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What is the size of the relationship between global mental toughness and youth experiences?

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ABSTRACT

Youth experiences are a core requirement for components of positive youth development and may be associated with an athlete's mental toughness. The purposes of this study were to examine the relationship between mental toughness and youth experiences. Two hundred and ninety nine athletes (M_{age} 19.48 years, *SD* 1.30) completed the Sport Mental Toughness Questionnaire and Youth Experiences Survey. We then conducted a standard multiple regression on the data. *R* for regression was significantly different from zero, $F(6, 292) = 8.106$, $p = .0001$, with R^2 at .14. Altogether, 14% (13% adjusted) of the variance in mental toughness was accounted for by youth experiences. These results reveal that initiative experiences have the strongest relationship with mental toughness; however, youth experiences may not be as important as previous studies suggest.

1. Introduction

The purposes of this study were to examine the size of the relationship between mental toughness and youth experiences in a sample of youth athletes (i.e., 15–24 years: United Nations, 2005). Gould, Griffes, and Carson (2011) suggested that mental toughness may be an outcome of positive youth development and there was a possibility of linking the two areas of research by discussing their reciprocal augmentation. Gould and colleagues stated that both fields emphasize the importance of developing self-belief, giving maximum effort, and dealing with failure and adversity, and they believed components of mental toughness have potential to be life skills; however, researchers need to establish how the two concepts are related. Youth need structured voluntary activities (e.g., sport) because these types of activities provide the conditions to facilitate development. Sport can provide opportunities for growth; however, sport is certainly not a panacea for positive development (Holt & Jones, 2008). Larson, Hansen, and Moneta (2006) reported that for some people sport was associated with higher levels of stress and social exclusion as competition with peers may lead to feelings of rivalry (Brustad, Babkes, & Smith, 2001), impede empathy, and possibly interfere with moral development (Shields & Bredemeier, 1995). For other athletes, sport can provide conditions for development of positive skills, like identity work, initiative, emotion regulation, and teamwork and social skills, interpersonal relationships, and adult networking (Hansen, Skorupski, & Arrington, 2010); particularly if sport is rule bound, structured, volitional and represents a context that accounts for a large proportion of youths' free time (Larson & Verma, 1999). Academics know that youth sport provides many positive life experiences (Larson et al., 2006) and they know that young athletes exhibit mental toughness attributes (Gucciardi, 2010); however, it is unclear which youth experiences are associated with mental toughness.

Gucciardi, Gordon, and Dimmock (2009) defined mental toughness in sport as a collection of values, attitudes, behaviors, and emotions that enable an individual to persevere and overcome obstacles, adversities, or pressures, but also to maintain concentration and motivation when things are going well to achieve goals. Over the past decade, researchers have diversified their research questions from asking what mental toughness is, to asking how people acquire it (Connaughton, Thelwell, & Hanton, 2011). In line with this diversification, researchers expanded sampling frames from elite and super elite athletes (e.g., Jones, Hanton, & Connaughton, 2002, 2007) to youth participants (e.g., Gerber et al., 2012; Gucciardi, 2009, 2010, 2011). With these changes, scholars have begun to understand processes that may explain how athletes develop mental toughness.

Connaughton and colleagues (e.g., Connaughton, Hanton, & Jones, 2010; Connaughton, Wadey, Hanton, & Jones, 2008) examined the development and maintenance of mental toughness in sport by interviewing elite and super elite athletes, coaches and sport psychologists. The synthesis of both studies revealed that mental toughness developed differently across the athletic lifespan (e.g., the early years, the middle years, and later years) with each

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development period providing different developmental experiences. Participants reported factors that developed mental toughness during the initial involvement in sport (e.g., the early years) included being competitive in training and engaging in activities for enjoyment, socialization, and skill mastery. The intermediate to elite level phase comprised discipline and structure in training, learning from role models, and doing what was necessary to achieve success. In the later years, when the super elite became Olympic or World champions participants reported that they developed mental toughness experiences of elite competition, an intense desire to win, a social support network, the use of mental skills, attaining the correct balance in life, gaining knowledge from respected individuals (e.g., coaches, competitors, sport psychologists), and reflective practice.

According to Connaughton et al. (2008, 2010), motivational climate (e.g., enjoyment, challenge, mastery), external assets (e.g., social support networks), and developmental experiences (e.g., critical incidents, competitive rivalry, vicarious experiences, demonstration of ability) are all potential mechanisms that facilitate the development of mental toughness. Connaughton and colleagues provided an excellent example of how mental toughness develops in elite and super elite athletes; however, it is unclear whether non-elite sports people develop mental attributes in the same way. Holt and Dunn (2004) identified that the majority of talent development research in sport psychology has been retrospective and descriptive, where successful athletes reflected on their athletic career (often after they have retired). It is evident that the same is true of some mental toughness development literature. In line with Holt and Dunn's suggestions, more research is required with young athletes and non-athletes in order to understand more about the formation of mental toughness.

Researchers have suggested that a relationship exists between youth experiences and mental toughness (e.g., Gucciardi, 2011; Gucciardi & Jones, 2012). Gucciardi and Jones investigated differences in developmental assets and negative emotional states between cricketers with high, moderate, and low levels of mental toughness in a sample of 226 community level cricketers. Gucciardi and Jones captured distinct mental toughness clusters, and demonstrated that cricketers with high levels of mental toughness reported possession of more developmental assets and lower levels of negative emotional states in comparison to cricketers with moderate and low levels of mental toughness. Overall, Gucciardi and Jones highlighted that mental toughness, and constructs associated with developmental success (e.g., developmental assets and youth experiences), warranted further exploration.

Gucciardi (2011) collected data from adolescent cricketers in order to examine the relationship between developmental experiences and self-reported mental toughness. Gucciardi tested the relationship between youth experience and mental toughness in a sample of 187 adolescent cricketers. Gucciardi's structural equation model demonstrated that positive and negative developmental experiences explained 40% of the variance in global mental toughness, with initiative experiences exhibiting the strongest relationship with mental toughness. Gucciardi noted that although the single sport, homogenous design (i.e., male cricketers) has some advantages, future research should examine the relationship between developmental experience and mental toughness using a heterogeneous sample. It is possible that individual sports offer different types of developmental experiences to team sport participants (Hansen et al., 2010) and females may experience different things compared with males (e.g., differences in identity development). Gucciardi stated that researchers should examine whether cricket specific findings generalize to other sports and across male and female participants. However, Gucciardi used a sport-specific measure of mental toughness, therefore a direct replication of Gucciardi's work is impossible if sampling across sports. In order to understand whether a relationship exists between youth experiences and mental toughness across sports, researchers must use a sport-general measure of mental toughness. To this end, the purposes of this study were to examine the size of the relationship between global mental toughness and youth experiences in a sample of athletes across sports.

2. Methods

2.1. Participants

Following approval from the University Ethics Committee, we sampled 299 male ($n = 186$) and female ($n = 112$) athletes (M_{age} 19.48 years *SD* 1.30) from sports teams at a British University (one participant, a 20 year old rugby player, did not report his or her gender). The sample consisted of athletes from 28 different sports (e.g., association football, field hockey, rugby, netball, cricket, badminton, golf, athletics, and equestrianism). We recruited athletes because researchers have recognized that mental toughness is a crucial attribute for success in sport and previous researchers have demonstrated that mental toughness exists in athletes (Sheard, Golby, & van Wersch, 2009). We do not believe that mental toughness is exclusive to athletes, in fact, researchers have shown that non-athletes demonstrate mental toughness attributes (e.g., Gerber et al., 2012); however, in the current study we focused on athletes because Gucciardi (2011) stated that researchers should examine whether cricket specific findings generalize to other sports.

The first author administered the instruments at prearranged times when participants had no other commitments. All participants voluntarily took part in the study. The testing protocol took approximately 10 min.

2.2. Measures

We asked participants to complete two self-report questionnaires: The Sport Mental Toughness Questionnaire (SMTQ: Sheard et al., 2009), and the Youth Experiences Survey (YES 2.0: Hansen & Larson, 2005).

2.2.1. Sport Mental Toughness Questionnaire (SMTQ: Sheard et al., 2009)

The SMTQ is a 14-item instrument that measures three dimensions of mental toughness: confidence ($\alpha = .80$, 6 items), constancy ($\alpha = .74$, 4 items), and control ($\alpha = .71$, 4 items). Participants rated items on a four point Likert scale anchored by not true at all and very true. Higher composite subscale scores reflect higher levels of each dimension and higher scores a single composite score reflects higher global mental toughness.

2.2.2. Youth Experiences Survey (YES 2.0: Hansen & Larson, 2005)

The YES 2.0 is a 70-item instrument that measures 6 domains of positive and 5 domains of negative experiences in youth activities. The 6 positive domains of the YES 2.0 are identity ($\alpha = .84$, 6 items), initiative ($\alpha = .94$, 9 items), basics skills ($\alpha = .87$, 10 items), interpersonal relationships ($\alpha = .86$, 8 items), teamwork and social skills ($\alpha = .93$, 10 items), and adult networks and social capital ($\alpha = .87$, 7 items). The 5 negative domains of the YES 2.0 are stress ($\alpha = .86$, 3 items), negative peer influences ($\alpha = .94$, 4 items), social exclusion ($\alpha = .82$, 3 items), negative group dynamics ($\alpha = .75$, 3 items), and inappropriate adult behavior ($\alpha = .94$, 4 items). Participants rate the extent to which they have had an experience in their current or recent involvement in their chosen activity (i.e., primary sport) using a four point Likert scale (1 = yes definitely, 2 = quite a bit, 3 = a little, 4 = not at all). All items were reverse scored so that a higher number reported greater experience in the specific domain. We calculated a mean score for each YES 2.0 subscale.