

MENTAL TOUGHNESS : WHAT IS IT AND HOW TO BUILD IT

FORÇA MENTAL: O QUE É E COMO CONSTRUI-LA

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ABSTRACT

Mental toughness is a term that has been long talked about but often misunderstood. Fortunately, in the past 12 years, researchers have begun to study this phenomenon. Although there are differences among researchers, mental toughness appears to contain four critical attributes including motivation, coping with pressure, concentration, and confidence. In terms of developing mental toughness, one way to approach its development is to consider that it is sometimes taught and sometimes caught. Teaching mental toughness involves a deliberate attempt to train specific mental skills (e.g., goal setting, relaxation, focus) whereas sometimes mental toughness is simply caught due to environmental influences (e.g. having a sibling how was older but pushed you to be more competitive and to continually strive to improve). The paper concludes with some suggestions for future research including focusing on the early development of mental toughness as well as developing interventions to test the effectiveness of mental toughness training.

Keywords: Sport, Psychology, Exercise.

INTRODUÇÃO

Coaches have been teaching physical skills and techniques for years but it is only relatively recently that they have started to focus on, and teach mental skills. The lack of focus is unfortunate, in that over 20 years ago Gould, Hodge, Peterson and Petlichkoff (1987) found that 82% of coaches rated mental toughness as the most important psychological attribute in determining wrestling success, although only 9% of them felt that they were successful in teaching it. However, there has been an increase in mental toughness research during the past several years that has tended to focus on the conceptualization of mental toughness specific to establishing a clearer definition of the construct.

DEFINING MENTAL TOUGHNESS

Mental toughness research has tended to focus on elite performers from various sports

(JONES, HANTON, CONNAUGHTON, 2002; 2007) as well as within specific sports such as elite cricket (BULL, SHAMBROOK, JAMES, BROOKS, 2005; GUCCIARDI, GORDON, 2009), soccer (COULTER, MALLETT, GUCCIARDI, 2010; THELWELL, WESTON, GREENLEES, 2005), and Australian football (GUCCIARDI, GORDON, DIMMOCK, 2008). Collectively, findings from these studies demonstrated a fair amount of consistency on what constitutes mental toughness (e.g., coping with pressure, self-belief, dedication and commitment, personal responsibility).

It is interesting to note that in the theoretical development of the construct of mental toughness, several different perspectives have been offered. For example, Clough and his colleagues (2002) used hardiness as a theoretical framework to develop a definition and model of mental toughness (i.e., the 4C's model). Specifically, these authors combined the components of hardiness (i.e., control, commitment, challenge) with confidence. Another example is Jones, Hanton and

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Connaughton, (2007), who reported 30 attributes of mental toughness and proposed a framework on how these attributes can be used. Specifically, the framework consists of four separate dimensions (i.e., attitude/mindset, training, competition, and post-competition) and offers insights into which of the attributes are necessary in the different settings. This framework has recently been extended (CONNAUGHTON, HANTON, JONES, 2010) to offer an insight into the development and maintenance of mental toughness across athletes' various career stages. Finally, Gucciardi, Gordon and Dimmock, (2008) adopted Personal Construct Psychology (PCP) as a framework to create a grounded theory of mental toughness. A key principle of PCP is that individuals strive to make sense of themselves and their environment by devising theories about their world. Further, PCP emphasizes that individuals differ in how they perceive situations and interpret them, what is considered important, and what is implied by individuals' particular construing of events (Kelly, 1991). The mental toughness model (GUCCIARDI; GORDON; DIMMOCK, 2009a) encompassed the interaction of three components that were considered central to the conceptualization of mental toughness specific to Australian football including characteristics (11 ranked bipolar constructs such as self-belief vs. self-doubt; work-ethic vs. lazy), situations (i.e., internal and external situations that demand mental toughness), and behaviors (i.e., behaviors displayed in the situations requiring mental toughness). From a theoretical and empirical point of view it is extremely important to understand and define mental toughness. Nevertheless, from practical and applied perspectives it is important for coaches, athletes and significant others to understand how to build and develop mental toughness.

Pillars of Mental Toughness

As just noted, although various models and frameworks of mental toughness have been developed, Jones and Moorehouse (2007) provided a useful practical framework based on the attributes of mental toughness research that categorizes the various attributes into the four pillars of mental toughness (i.e., motivation,

self-confidence, attentional focus, coping with pressure). From a practical perspective, the pillars of mental toughness can provide a structured framework for which to identify strategies to teach and build mental toughness. The four pillars are described below and are later used to offer practical strategies on how to build mental toughness by either teaching mental skills or creating a suitable environment (e.g., physical, mental emotional, social).

Motivation

Recognizing that certain types of motivation and motivational strategies are more conducive than others for optimal performance, this pillar is centered on the optimal levels and types of motivation required to achieve your goals. Motivation for the mentally tough athlete would encompass a strong desire for success; willingness to push oneself, persist, and work hard; setting difficult but attainable goals; and bouncing back from performance setbacks (JONES; HANTON; CONNAUGHTON, 2002; WEINBERG; BUTT; CULP, 2011).

Self-Confidence

Considered one of the most important mental toughness characteristics (GUCCIARDI; GORDON; DIMMOCK, 2008; JONES; HANTON; CONNAUGHTON, 2002), this pillar encapsulates mentally tough athletes' belief that they have the abilities to achieve their goals. According to Jones and Moorhouse (2007), this strong belief in oneself enables the mentally tough athlete to take educated risks, learn from criticism, control unwanted thoughts and feelings, and expect that good things will happen in the future, for example.

Attentional Focus

Being able to focus their attention on the relevant cues in the environment and maintain that focus despite distractions, as well as not allow things to detract their attention from their priorities is a hallmark of mentally tough athletes (JONES; HANTON; CONNAUGHTON, 2002; 2007; GUCCIARDI; GORDON; DIMMOCK, 2008). Mentally tough athletes maintain such attentional focus by focusing on controlling the controllables;

staying in the moment; focusing on the positives; and focusing on the process (JONES; MOORHOUSE, 2007).

Coping witsure

This pillar relates to being able to perform under pressure by controlling the amount and nature of stress experienced (JONES; MOORHOUSE, 2007). The different aspects of pressure as it relates to mental toughness include coping effectively with adversity; staying calm under pressure; accepting that anxiety is inevitable and enjoying it; thriving on pressure; and interpreting anxiety as facilitative for performance (GUCCIARDI; GORDON; DIMMOCK, 2008; JONES; HANTON; CONNAUGHTON, 2002; 2007; WEINBERG; BUTT; CULP, 2011).

Developing Mental Toughness

Although there is on-going research and debate as to exactly how mental toughness is developed, from existing research (CONNAUGHTON; WADEY; HANTON; JONES, 2008; GUCCIARDI; GORDON; DIMMOCK; MALLETT, 2009; WEINBERG; BUTT; CULP, 2011) it appears that mental toughness is both “caught” via environmental influences and “taught” through training. Following a similar line of inquiry to talent development, mental toughness researchers have used the reflective accounts of elite athletes to provide important information on how they developed their mental toughness during earlier stages of their careers (BULL; SHAMBROOK; JAMES; BROOKS, 2005; CONNAUGHTON; WADEY; HANTON; JONES, 2008). Findings from these studies highlight that mental toughness can be developed (i.e., caught) through certain environmental influences. For example, Bull, Shambrook, James and Brooks, (2005) reported that environmental influences provided the foundation for the development of tough character (e.g., competitiveness), tough attitudes (e.g., go the extra mile mindset), and tough thinking (e.g., robust self-confidence) in elite cricketers. When referring to environmental influences, athletes who are retrospectively recalling their development are not referring to situations that they have deliberately placed themselves in to specifically develop their

mental toughness, but rather they are recalling how the environment has influenced them (BULL; SHAMBROOK; JAMES; BROOKS, 2005; CONNAUGHTON; WADEY; HANTON; JONES, 2008).

Effective Environment to Develop Mental Toughness: The Roles of Parents and Coaches

Coaches and parents have important roles to play in developing mental toughness (whether “caught” or “taught”). In a study focusing on National Collegiate Athletics Association (NCAA) athletes, for example, coaches were reported as having the most influence in developing their mental toughness (BUTT; WEINBERG; CULP, 2010). These strategies included creating a tough physical practice environment (e.g., intense competitive practices, tough physical conditioning), a positive mental environment (e.g., confidence building/positive atmosphere, high expectations), and providing awareness/learning opportunities (e.g., observing others being mentally tough). Similarly, in a study involving athletes’ mental toughness development across career stages (CONNAUGHTON; WADEY; HANTON; JONES, 2008), coaches were mentioned as being important in the development of mental toughness, specifically referring multiple times to the coaches’ leadership styles. In essence, coaches were seen as directly (mentoring, planned teaching) or indirectly (fostering/nurturing/instilling important skills) teaching mental skills.

Implementing tough physical conditioning is emerging in the literature as one way to build a tough practice environment. For example, NCAA coaches reported using tough physical conditioning to build the mental toughness attributes of performing under pressure and self-belief (WEINBERG; BUTT; CULP, 2011). The extent to which mental toughness has a physical component is not fully understood, although a consistent finding is that being physically prepared is linked to displaying high levels of self-belief (BULL; SHAMBROOK; JAMES; BROOKS, 2005; BUTT; WEINBERG; CULP, 2010; GUCCIARDI; GORDON; DIMMOCK, 2008). From a practical perspective, this connection between the physical and mental aspects should be emphasized when building

mental toughness and designing training sessions.

Manipulating practice environments to create competitive, difficult and pressure inducing situations is an important strategy for building mentally tough athletes. However, these environments should be positive and confidence-building as opposed to negative and punishment-oriented (BUTT, WEINBERG, CULP, 2010; CONNAUGHTON; WADEY; HANTON; JONES, 2008; WEINBERG; BUTT; CULP, 2011). For example, elite athletes have reported that being in a rewarding (e.g., opportunity to demonstrate ability) and enjoyable (e.g., opportunity to master skills) environment has influenced their mental toughness development, and appears to be particularly salient in developing the motivational attributes (CONNAUGHTON; WADEY; HANTON; JONES, 2008). These findings are consistent with the talent development literature (GOULD; DIEFFENACH; MOFFETT, 2002) and with much of the recent sport psychology research on reinforcement and feedback, which emphasizes a positive approach to the learning and performance of skills and competition (SMITH, 2006). To help create this positive climate, coaches should consider providing reinforcement and feedback, which emphasizes a positive approach to the learning and performance of skills and competition (e.g., provide encouragement, give positive and instructional feedback, set-up practices that are fun and enjoyable, consider individual differences).

To develop mental toughness, athletes being exposed to encouraging environments (both inside and outside of the sport setting) is not only linked to the roles of coaches but also to the roles of athletes' parents (BUTT; WEINBERG; CULP, 2010; CONNAUGHTON; WADEY; HANTON; JONES, 2008). A consistent finding in youth-sport literature is that parents play a central role in their child's sporting experience in general and can also influence their motivation to participate in sport, and their enjoyment (BRUSTAD; BABKES; SMITH, 2001). Talent development literature supports the idea that parents are important in helping aspiring young athletes to fulfill their potential (Bloom, 1985; CÔTÉ, 1999;

GOULD; DIEFFENACH; MOFFETT, 2002) and progress through the various stages of their careers. The role of parents influencing an appropriate attitude towards sport participation was found in studies involving NCAA Division 1 athletes as well as elite cricketers (BUTT; WEINBERG; CULP, 2010; BULL; SHAMBROOK; JAMES; BROOKS, 2005). The recurring theme among these research findings is that parents encouraged a "if it's worth doing, it's worth doing right" mindset.

Collectively, these findings indicate that with the appropriate support and encouragement, parents can influence the development of mental toughness. It is important to note that existing sport psychology literature in these areas (e.g., mental toughness, psychological talent development, youth sport) typically acknowledges that parents should adopt an appropriate level of involvement in their child's sport development to be supportive (CONNAUGHTON; WADEY; HANTON; JONES, 2008; GOULD; DIEFFENACH; MOFFETT, 2002; GOULD; LAUER; ROLO; JANNES; PENNISI, 2008). Specifically, parents maintaining an appropriate perspective on their child's sporting involvement, encouraging ownership and responsibility, as well as being part of a supportive social support network are considered important parent behaviors for developing elite athletes' psychological characteristics (GOULD; DIEFFENACH; MOFFETT, 2002) and mental toughness (CONNAUGHTON; WADEY; HANTON; JONES, 2008).

Training to be Mentally Tough: Combining "Taught" and "Caught" Strategies

In addition to manipulating the training environment to develop mental toughness as previously discussed (i.e., the caught element), mental skills appear to have an important role to play in training athletes to be mentally tough. In support of this view, elite athletes have reported the successful use of mental skills (e.g., mental preparation, imagery, goal-setting, self-talk) in helping them not only to develop their mental toughness but also as a strategy to maintain it (CONNAUGHTON; WADEY; HANTON; JONES, 2008). Intervention research has provided preliminary support for the usefulness

of mental skills training targeting specific mental toughness attributes for its enhancement with youth footballers (GUCCIARDI; GORDON; DIMMOCK, 2009b). When implementing strategies to develop mental toughness, both knowledge from environmental influences and specific mental skills can be combined for optimal effectiveness. Using the four pillars of mental toughness model as a framework (JONES; MOORHOUSE, 2007), this next section draws upon the development of mental toughness literature to provide an overview of some strategies to build mental toughness.

Motivation

Having a desire to succeed and sustaining this internal motivation over long periods of time are often noted as being essential characteristics of mental toughness (JONES; HANTON; CONNAUGHTON, 2002; 2007). This desire can be fueled by both intrinsic and extrinsic motivation (GUCCIARDI, 2010), although research has indicated that individuals with high intrinsic motivation exhibited more interest, excitement, confidence, and persistence than individuals motivated largely by external demands and rewards (VALLERAND, 2007).

Creating an effective environment. Coaches can create a practice environment whereby athletes are exposed to successful experiences. Along these lines, they can focus not only on outcome but also on enjoyment, and they can be involved in some decision making to provide a feeling of ownership. In terms of practice environments, although it appears that a positive motivational climate is appropriate for enhancing intrinsic motivation, using competitive rivalry to develop the motivational properties of mental toughness has received some support in the literature (BULL; SHAMBROOK; JAMES; BROOKS, 2005; CONNAUGHTON; WADEY; HANTON; JONES, 2008). In addition, (GUCCIARDI; GORDON; DIMMOCK; MALLETT, 2009; WEINBERG; BUTT; CULP, 2011), creating a tough environment by setting-up intense competitive practices was mentioned by all interviewed coaches as a strategy to build mentally tough athletes. Specifically, coaches designed drills “to put athletes in difficult

situations to encourage them to hang in there” under difficult circumstances. Besides the practice environment, it is also important to note that the behaviors coaches adopt can play important roles in developing athletes’ intrinsic motivation. For example, coaches can focus on giving athletes rewards that are contingent on their performance, using verbal and non-verbal praise, and being able to vary the content and sequence of practice drills.

Training motivation

The mental strategy of goal-setting can be used to enhance the motivational attributes of mental toughness. For example, the elite athletes in Connaughton et al.’s (2008) study reported goal-setting to be a key skill used in their mental preparation and one that helped them to further develop their desire and internalized motives to succeed. In general, research has demonstrated that goals direct attention and action and help players focus on what they need to do both in the short-term and long-term (LOCKE; LATHAM, 1990). Having specific goals to reach desired outcomes is considered more effective than setting “do your best” goals or simply knowing what you want (e.g., winning a championship). Indeed, results from goal-setting research consistently demonstrates that specific and hard goals produce better performance than easy goal, do your best goals, or no goals at all (LOCKE; LATHAM, 1990). Although in the scientific literature a goal is usually defined as an objective, a standard, an aim, or a level of performance or proficiency, there are three major types of goals namely outcome, performance, and process goals.

Setting each type of goal can improve sports performance, although research with elite athletes (FILBY; MAYNARD; GRAYDON, 1999) has shown that setting these three types of goals in combination is related to top performance. When considering the types of goals to set as an athlete, the important point is that for every outcome goal, there should be several performance and process goals set that ultimately lead to achieving that outcome. Existing literature highlights that mentally tough athletes not only have a clear focus on their long-term goals but are also able to control their focus at important times during competition

(JONES; HANTON; CONNAUGHTON, 2007). In addition to the types of goals, there are some key principles involved in setting effective goals. A good tip for helping athletes remember effective goal principles is S.M.A.R.T.S. (Figure 1).

- **SPECIFIC**
 - Be precise
- **MEASURABLE**
 - Quantify the goal
- **ACTION-ORIENTED**
 - How are you going get there?
- **REALISTIC**
 - Set your goals to be challenging and attainable
- **TIMELY**
 - Set your goals within a reasonable time frame
- **SELF-DETERMINED**
 - Athlete input

Figure 1 - Principles of goal-setting.

Self-belief

Existing literature consistently supports self-belief a key attribute of mental toughness (GUCCIARDI; GORDON; DIMMOCK, 2008; WEINBERG; BUTT; CULP, 2011), with some ranking this facet as the most important (JONES; HANTON; CONNAUGHTON, 2007). Self-belief relates to an athlete's confidence and numerous studies have revealed that confidence has a positive impact on sport performance (VEALEY, 2001). Accordingly, confidence is considered one of the most important attributes an athlete can possess, yet it is also considered to be one of the most fragile attributes. Therefore, finding ways to build and maintain

confidence is important for mental toughness development and for successful performance.

Creating an effective environment. The importance of creating a mastery and positive motivational climate has emerged in the mental toughness development literature (CONNAUGHTON; WADEY; HANTON; JONES, 2008). In shedding some light on developmental considerations, athletes' recollections of developing mental toughness attributes such as self-belief, desire, and motives to succeed throughout varying career stages (i.e., early, middle, later) included mastery, enjoyment, exposure to friendly rivalries, and social support. In a more recent study (WEINBERG; BUTT; CULP, 2011), coaches emphasized that building confidence in athletes required a positive environment and lots of support (e.g., encouragement, positive and instructional feedback

Research has also highlighted the role that physical preparation can play when developing the confidence aspect of mental toughness (CONNAUGHTON; WADEY; HANTON; JONES, 2008; WEINBERG; BUTT; CULP, 2011). Specifically, quality physical preparation is often linked with positive psychological characteristics such as confidence (HAYS; MAYNARD; THOMAS; BAWDEN, 2007; VEALEY; HAYASHI; GARNER-HOLMAN; GIACCOBI, 1998). Thus, with self-belief being reported as the most important attribute of mental toughness in various studies (GUCCIARDI; GORDON; DIMMOCK, 2008; JONES; HANTON; CONNAUGHTON, 2007), it is not surprising that being fully prepared physically has emerged in the literature as a possible prerequisite to demonstrating specific attributes of mental toughness such as confidence and performing under pressure (WEINBERG; BUTT; CULP, 2011).

Training self-belief

Based on current mental toughness research, enhancing self-belief appears to be linked with strategies such as modeling/watching others (CONNAUGHTON; WADEY; HANTON; JONES, 2008; WEINBERG; BUTT; CULP, 2011), and recalling previous successful actions (GUCCIARDI; GORDON; DIMMOCK, 2009b). There is a long history of research in

both imagery (WEINBERG, 2008) and modeling (MCCULLAGH; WEISS, 2002) attesting to its positive impact in not only improving performance, but also enhancing mental skills. So far in the mental toughness literature, athletes have reported using imagery for a variety of reasons including staying focused, building self-belief, and increasing desire to achieve goals. When developing the self-belief properties of mental toughness, it is important for coaches to recognize the value in providing athletes with opportunities to observe their own performances and recent accomplishments but also to watch other successful athletes. The use of video clips and performance analysis can be incorporated into athletes' practice schedules to facilitate this development.

Coaches can also incorporate imagery into their practice environments to help athletes mentally prepare for competition. For example, coaches can call out different plays to their respective units whereby the players are then asked to imagine what they would do in specific situations. Another strategy might be for coaches to ask their players to visualize their events the night before competition and see themselves carrying out the movements and strategies as required. Probably one of the most important uses of imagery would be imaging positive performances as a way to build a robust self-belief. Recalling a positive performance can help athletes maintain confidence to perform specific skills during competition

Attentional control

Concentration is the ability to remain focused on the task at hand, and maintain that focus over a period of time. Being able to remain fully focused especially when faced with adversity is consistently reported as an important mental toughness attribute (JONES; HANTON; CONNAUGHTON, 2002; 2007; GUCCIARDI; GORDON; DIMMOCK, 2008). In addition to elite athletes recognizing the importance of focus for mental toughness, coaches also consider it to be an important attribute (WEINBERG; BUTT; CULP, 2011). The central theme is that regardless of what is going on in the environment, mentally tough

athletes have strong attentional control skills and are able to focus on the task at hand.

Creating an effective environment

The practice environment when learning psychological skills is just as important as the learning of physical skills. To improve concentration in competition, it is important that attentional control is self monitored (e.g., monitoring how much time was spent on a given task, or identifying situations when you had good focus versus losing focus) and that competition is simulated during practice environment. With regard to the development of concentration, setting up practices that encourage athletes to make quick decisions is one way to train concentration. In addition, over-learning skills in practice can enable athletes to make complicated decisions quickly during competition. Finally, a coach can "stop" or "freeze play" during practice to ask players what they were focusing on while performing a specific task. By doing this training exercise, players can receive immediate feedback about what they were focusing on to perform a specific task, and if they can improve upon it.

Training attentional control

Although many strategies have been identified to enhance attention control (e.g., competition plans and established routines, negative thought-stopping), recent research supports the utility of self-talk statements (COULTER; MALLETT; GUCCIARDI, 2010). Two common causes of attentional problems tend to be in the form of internal distracters such as attending to past events) or attending to future events. Therefore, developing a set of specific verbal and positive cues can help athletes to keep their mind focused on a given task. Verbal cues tend to be broken down into either motivational (e.g., I can do it) or instructional (e.g., keep your eye on the ball) and can both be appropriate depending upon the situation. For mental toughness development, instructional self-talk provides specific information on how to perform a skill, whereas motivational self-talk can help athletes achieve their optimal ready state for

competition or help them to hang-in-there during a tough competition.

Dealing with pressure

A consistent theme when investigating mental toughness is players' ability to manage their emotions and cope with pressure. Mentally tough athletes do not merely deal with pressure but they thrive on it and can produce an exceptional performance at important moments (JONES; HANTON; CONNAUGHTON, 2007; WEINBERG; BUTT; CULP, 2011). It is important that athletes develop a range of coping strategies because they will undoubtedly experience a variety of stressors throughout their sporting careers.

Creating an effective environment

Recent research on mental toughness development (CONNAUGHTON; WADEY; HANTON; JONES, 2008) provides insight into how elite athletes' learned to cope with their anxiety and thrive on externally derived pressures. Specifically, athletes felt that they learned to cope with anxiety and pressure due to increased competitive experience. It is important then for mental toughness development that athletes are exposed to competitive stressors in the practice environment so they can learn to enjoy pressure. When considering the best practice environment for mental toughness development, research suggests that physical conditioning should be part of it (GUCCIARDI; GORDON; DIMMOCK, 2008).

Various techniques to cope with pressure can be used and integrated into athletes' physical practice environments. For example, coaches can create pressure situations in various ways and will often involve manipulating time, space, and levels of opposition (e.g., overload situations) within the drills that echo a game-related situation. In addition, coaches can choose to hold a physical conditioning session at the start of practice so that players will be prepared to perform skills when they feel fatigued. This approach would lend itself to how some athletes and coaches in the literature reflect on the role of fitness. That is, athletes would probably only be able to perform something 'spectacular' under pressure towards the end of the game if they were physically fit.

Training to deal with pressure

With regard to athletes learning to accept anxiety as part of competition, it is important that they are equipped with some strategies to help them view anxiety as having more of a positive influence than a negative influence on performance. One important coping mechanism to facilitate a positive interpretation of cognitive anxiety that is supported in the literature is cognitive restructuring (THOMAS; HANTON; MAYNARD, 2007). Cognitive restructuring can help athletes counter negative thoughts and expectations and turn them into positive thoughts and expectations through a process of rationalization. Typically, 'countering' involves the following three phases: (a) identifying negative thoughts and situations that trigger them through self monitoring procedures, (b) developing a thought-stopping cue to help stop the negative thoughts before they become harmful to performance, and (c) replacing the negative thoughts with positive thoughts that can direct your focus back to the task at hand.

FUTURE RESEARCH

From the emerging research, it appears that creating both a positive and tough competitive environment is important for mental toughness development, although the balance between the two environments and at what career stage each one should be emphasized needs to be further explored. Along these lines, although support has been found for creating a tough competitive environment in various stages of athletes' careers such as the middle and later stages of development (CONNAUGHTON; WADEY; HANTON; JONES, 2008), in NCAA athletes, and also in elite athletes (BULL; SHAMBROOK; JAMES; BROOKS, 2005; WEINBERG; BUTT; CULP, 2011), relatively little is known about mental toughness development in athletes during earlier stages of their careers. Second, consistent with talent development research (Bloom, 1985); GOULD; DIEFFENACH; MOFFETT, 2002), there are some findings indicating that coaches also play important roles in developing athletes' mental toughness (CONNAUGHTON; WADEY; HANTON; JONES, 2008). Thus, the

psychological skills of athletes and the role that coaches may play in developing and nurturing these skills at various stages of development may be an important avenue for future research. Finally, empirical intervention research is warranted to investigate the effectiveness of mental toughness interventions. Gucciardi and his colleagues (2009b) have done some initial intervention studies with youth participating in Australian football, which can be used as a benchmark to spur future research in this area. To date, most information regarding building mental toughness has come from athletes' recollections, which, although important, might

be questioned due to the long time period in their reflections. Collecting empirical data across different age groups attempting to build mental toughness attributes will provide much needed information regarding the learning of skills necessary to become mentally tough. Furthermore, when considering intervention research, individual differences such as competitiveness and intrinsic motivation (as well as other personality attributes) should be examined to understand how they might influence and relate to the development of mental toughness.

FORÇA MENTAL: O QUE É E COMO CONSTRUÍ-LA

RESUMO

Os treinadores têm ensinado habilidades físicas e técnicas durante anos, mas apenas recentemente começaram a focar e ensinar habilidades mentais. A falta de foco é algo desastroso. Há mais de 20 anos Gould, Hodge, Peterson e Petlichkoff (1987) constataram que 82% dos treinadores consideravam a força mental como o mais importante atributo psicológico para o sucesso em luta romana, embora apenas 9% deles sentiram que foram bem sucedidos no ensino da mesma. Porém, nos últimos anos tem havido um aumento em pesquisa tendendo a focar a conceitualização de força mental especificamente para estabelecer uma definição mais clara do construto.

Palavras-chave: Esporte, Psicologia, Exercício.

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