

## **A REVIEW OF MENTAL TOUGHNESS AND ITS EFFECT ON SPORTS PERFORMANCE**

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### **ABSTRACT**

Competitive sports demand a high level physical ability, and at the same time, they require a sharp mental focus. In a world where many athletes are physically, technically and tactically increasingly similar, it is the mind which offers perhaps the greatest scope for a competitive advantage. Mental toughness is one of the psychological dimensions that is considered important in performance, achievement and excellence across many domains of life. Mental toughness is a term used throughout the sporting world it resides in common vocabulary of coaches, athletes, fan, and commentators across sporting context. The creation of a proper concept of mental toughness has been a challenge because previous researches have lacked to distinguish between what actually mental toughness is and what the essential attributes of being mental tough are (Crust, 2007). Mental toughness is an unshakeable perseverance and conviction toward a common goal despite pressure or adversity (Middleton et. al., 2004). It is suggested that mentally tough players can use mental toughness attributes to help endure and perform well during adverse situations, but they can also employ other attributes of mental toughness when the game is going well to keep them playing at their best (Gymbrah. M., 2013). Some aspects of mental toughness are gained through social experiences, while other aspects could be taught. Several studies have demonstrated a positive relationship between mental toughness and performance. It is presumed that athletes who perform better are more mentally tough (Newland. A, 2012). A number of theoretical frameworks have been put forward in the past years to explain the concept, meaning, development, maintenance, and measurement of mental toughness. Also various researches have been conducted to highlight the importance of mental toughness in sports performance.

**Keywords:** Mental Toughness, performance, attributes,

### **INTRODUCTION**

Sport is becoming an integral part of human life. From very simple beginning it has now become highly organized activity of human society. The success and failure of an athlete is dependent on the combination of physical ability, conditioning, training, mental preparation and the ability to perform well under pressure. In today's competitive world it is very difficult to stay mentally tough and perform under tremendous pressure. More physical and mental energy is needed and for this it is essential to be mentally tough hence mental

toughness is on high demand. Player are subject to performance evaluation by coaches, manager, fellow team-mates, spectators, press and media which occur before, during and post-performance. Player are expected to make a split second judgment and accurate movement or reaction to the opponent's move, often under immense pressure and tough situation, which can have far reaching effects with games at all levels. It is essential to be aware of the importance of sport psychology to assist athletes to perform sport skills better. There are also variety of factors in sport disciplines and competition in terms of the type of sports because athletes experience specific psychological behaviors. The demands in team sports are different from that of individual sports. The nature of sports makes an individual to behave in a certain manner. In group sports like football, basketball, handball and others the nature of these sports causes the athletes to commit many fouls during competition, as a result they experience negative emotion and show problematic behaviour. In contrast in individual sports, athletes depend on to their individual abilities. In individual sports, performance criteria is one dimensional while in group sports performance depends on the teammates performance. In team sports, athletes are involved with teammates and spend a lot of time practicing with teammates and have more interaction with one another, in contrast in individual sports athletes spend a lot of time alone in practicing. In some of individual sports athlete have more time for mental skills practice and they do so in a quiet environment while distraction and loss of concentration are part of the team sports. In individual sports, the outcome is either winning or losing and there isn't tie, but in team sports all three results are possible.

**Mental toughness:** With regards to sport, mental toughness is a term that coaches, athletes and sport psychology consultants use when discussing psychological factors that differentiate between successful and less successful athletes (Gucciardi et al., 2008; Tristan et al., 2010). Mental toughness is perhaps the single most valuable psychological characteristic in sports (Bull, Shambrook, James, and Brooks, 2005; Jones, Hanton, & Connaughton, 2002). For instance a mentally tough person is described as the one who is a self-oriented person and who accepts criticism and failure without getting discouraged (Tuko and Richards, 1971). Conversely 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". Many experts propose numerous attributes to clarify the nature of mental toughness, like not letting adverse situations affect performance (Gould et al., 1987), rebounding from failures (Woods et al., 1995), possessing superior mental skills (Bull et al., 1996), having the ability to cope with pressure (Goldberg, 1998) and being resilient (Crust, 2008). Loehr (1982) believes that mental toughness is the one factor that mediates the mind-body connection. He also describes some of the characteristics of a mentally tough athlete, including self-motivated, positive and realistic, emotional control, calmness, being highly energetic, determined, focused, self-confident, and responsible. Mental Toughness can be described as having the psychological edge that allows athletes to reach optimal performance states regardless of obstacles and/or adversity (Burton & Raedeke, 2008; Crust, 2008; Jones et al., 2002). Mental Toughness is also a concept that can be learned by athletes through systematic, long-term psycho educational training in Mental skills and is important to promoting ideal performance in critical and/or adverse situations (Loehr, 1986; Parkes & Mallett, 2011). (Thewell et. al., 2005) defined mental toughness as having the natural or developed psychological

edge that enables you to; always cope better than your opponents with the many demands (competition, training, lifestyle) that soccer places on the performer and specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure. (Jones et al. 2002) suggested that Mental attributes such as (a) an unshakeable self-belief, (b) ability to bounce back from set-backs, (c) insatiable desire and intrinsic motivation to be successful, (d) ability to remain focused in the face of distraction or unexpected events, (e) managing physical or emotional pain, (f) coping with anxiety, and (g) thriving during pressure-packed competitions are characteristics of Mentally tough athletes. Bull et al., 2005; Thelwell et al., 2005; Gucciardi et al., 2008; Gucciardi & Gordon, 2009) identified specific key psychological components that affect performance across many sports codes. These include: self-confidence, self-motivation, attention control, hardiness, enjoyment, ability to handle pressure, resilience and quality preparation. However, some dimensions are sport-specific, such as reaction time, team cohesion and team dynamics. In other words, the context of mental toughness may be determined by the nature of a specific sport (Crust, 2008; Connaughton & Hanton, 2009; Gucciardi & Gordon, 2009). Research suggests that mentally tough athletes may be better able to maintain an optimal mindset throughout competition (Cashmore, 2002), handle criticism, losses, and poor performances (Clough et al., 2002), overcome or rebound from setbacks (Jones et al., 2002), take personal responsibility for performance (Fourie & Potgieter, 2001), and remain calm and relaxed in high pressure situations (Clough et al., 2002). Additionally, the mental toughness components of confidence, anxiety management, and concentration have all been found to positively relate to athletic performance (Durand-Bush, Salmela, & Green-Demers, 2001; Meyers, Le Unes, & Bourgeois, 1996; Smith & Christensen, 1995; Smith, Schutz, Smoll, & Ptacek, 1995). The literature clearly shows that mental toughness is imperative for peak sport performance. Gould, Hodge, Peterson, and Petlichkoff (1987), Gould, Eklund, and Jackson (1993a), Williams (1998), and Gould, Dieffenbach, and Moffett (2002), all state that mental toughness is an important psychological characteristic of sport performance.

## **REVIEWS**

### **Concept of Mental Toughness**

There is no precise beginning to the study of mental toughness, nor is there one definition or preeminent theory that has been widely accepted (Crust, 2008). However, as research evolved, the conceptualization of this topic gained some clarity. Several essential works appeared in the development of mental toughness as an area of study (Connole. I., 2009). The early belief was that mental toughness is an important factor in deciding the outcome of sports contests (Clough et.al. 2002). Despite this belief there is a lack of conceptual clarity in the literature of mental toughness. But lately there have been some interesting researches conducted in this area (e.g., Jones et. al. 2002; Clough et. al, 2002; Middleton et. al, 2004; Bull et. al, 2005; Gucciardi et. al, 2008). Researchers have been persistent in their efforts to provide conceptual clarity by proposing improved theoretical frameworks to study the attributes of mental toughness (Assamoah. B., 2013). Mental Toughness can be described as having the psychological edge that allows athletes to reach optimal performance states regardless of obstacles and/or adversity (Burton & Raedeke, 2008; Crust, 2008; Jones et al., 2002). Mental

Toughness is also a concept that can be learned by athletes through systematic, long-term psycho-educational training in Mental skills and is important to promoting ideal performance in critical and/or adverse situations (Loehr, 1986; Parkes et. al., 2011). In the past, mental toughness has been explained mainly by lists of positive qualities that mentally tough athletes possess, example resilience, (Gould et. al., 1987), the ability to overcome setbacks and poor performance (Goldberg, 1998), and optimal self-confidence (Clough et. al., 2002). These psychological attributes have some competitive benefits (e.g., a psychological edge and coping better than one's opponents), which differentiate between successful and less successful performances (Jones et. al., 2007). Many of these works made connections to other areas of research (e.g., hardiness, psychological skills of successful athletes, talent development) in order to gain a deeper understanding of what mental toughness is, where it comes from, and what it allows athletes to do (Connole. I., 2009).

### **DEFINING MENTAL TOUGHNESS**

Loehr was the first expert to explain the importance of mental toughness in sport. Mentally tough performers are disciplined thinkers who remain composed, unperturbed and energized regardless of competitive stress. They are able to do this because they can trigger the flow of positive energy under adverse conditions (Loehr, 1986). Mentally tough athletes are not only able to cope and perform well under excessive pressure, but ability to have control over the varying demands placed on them in training and their personal life Collection of values, attitudes, behaviors and emotions, which enable an individual to persevere and overcome any obstacle, adversity or pressure experienced, but also to maintain concentration and motivation when things are going well, to consistently produce high levels of performance is mental toughness (Gupta. S., 2013). Mentally tough individuals tend to be sociable and outgoing as they are able to remain calm and relaxed, they are competitive in many situations and have lower anxiety levels than others. With a high sense of self-belief and an unshakable faith they are able to control their own destiny. These individuals can remain relatively unaffected by competition or adversity (Clough et. al., 2002). (Clough et. al., 2002) used four C's to describe mental toughness, they have suggested that challenge, commitment, control, and confidence are central to mental toughness. Mental toughness is defined as having a natural or developed psychological edge that enables you to generally cope better than your opponents with the many demands that sport places on a performer and specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure (Jones et. al., 2009). The definition is important for a number of reasons. It suggests that mental toughness is something that can be developed. It also suggests that mental toughness has a competitive aspect. For instance, players who are mentally tough will be able to cope better than opponents, or be more consistent than opponents (Gymbrah. M., 2013). Mental toughness is having the natural or developed psychological edge that enables you to always cope better than your opponents with the many demands that sports places on the performer and specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure (Thelwell et. al., 2005). It was also argued that mental toughness includes some form of outcome measure (e.g., psychological edge, coping better than opponents) where comparisons are made with opponents (Jones et al., 2002). Mental toughness in Australian Football is a collection of values, attitudes, behaviors, and emotions that enable you

to persevere and overcome any obstacle, adversity, or pressure experienced, but also to maintain concentration and motivation when things are going well to consistently achieve your goals (Gucciardi et al., 2008).

### **ATTRIBUTES OF MENTAL TOUGHNESS**

Despite widespread agreement on the importance and benefits of mental toughness and calls to identify psychological attributes that create champions, high quality research into mental toughness is limited. (Fourie et. al., 2001) analysed written responses from 131 expert coaches and 160 elite athletes, their analysis identified twelve components of mental toughness including: motivation level, coping skills, confidence maintenance, cognitive skill, discipline and goal directedness, competitiveness, possession of prerequisite physical and mental requirements, team unity, preparation skills, psychological hardiness, and ethics. (Jones et. al., 2002) also identified twelve attributes of mental toughness, these attributes include self-belief, an unshakeable focus, high levels of desire and determination (especially at times of distress), and overall consistency of effort and technique despite life and sport stresses. (Middleton et. al., 2004) suggested that they consider an athlete mentally tough if they possess at least some of the 12 attributes in their study, which includes: self-efficacy, potential, mental self-concept, task familiarity, value, personal best, goal commitment, perseverance, task focus, positivity, stress minimisation, and positive comparisons. Mental toughness generally enhances an individual's ability to cope effectively with stress, challenges, adversity and maintaining focus in everyday life (Assamoah. B., 2013). The attributes of mental toughness are: self-belief, robust and resilient confidence, thriving on competition, dedication and commitment, self-focus, ability to keep perspective, self-reflection. These were then sub categorised into five general dimensions which entail: developmental factors, personal responsibility, dedication and commitment, belief, and coping with pressure (Bull et. al., 2005). The following are the characteristics of mental toughness have also been defined: having total self-belief at all times that one will achieve success, wanting the ball at all times (when playing well and not so well), having the ability to react to situations positively, having the ability to hang on and be calm under pressure, knowing what it takes to grind oneself out of trouble, having the ability to ignore distractions and remain focused, controlling emotions throughout performance, having a presence that affects opponents, having everything outside of the game under control, enjoying the pressure associated with performance (Thelwell et. al., 2005). Attributes of mental toughness like focusing, keeping cool and calm and having high emotional intelligence have been identified by (Yadav S.K., 2012). According to (Goldberg. A., 2004) mental toughness consist of the following factors: reboundability, dealing with pressure, concentration, confidence and motivation. From their study (Bull et. al., 2005) said that tough character, tough attitudes and tough thinking as the characters of mental toughness. It is suggested that mentally tough players can use mental toughness attributes to help endure and perform well during adverse situations, but they can also employ other attributes of mental toughness when the game is going well to keep them playing at their best (Gymbrah. M., 2013).

### **DEVELOPING AND MAINTAINING MENTAL TOUGHNESS**

According to (Davis et. al., 2005) “achieving elite sport performance depends not only on perfecting the biomechanical efficiency of required movements but also on the efficient utilization of cognitive resources”. Hence the development of mental toughness is very essential for better performances. Mental toughness can



be developed in a number of ways. (Alderman, 1974) suggested that athletes, in addition to being taught to be physically tough, are being taught to be mentally tough as well. By increasing knowledge of the methods available to develop one's Mental Toughness, athletes can begin laying groundwork for enhancing performance and increasing the chances of success. Mental toughness is characterized by innate as well as developed characters (Gould et. al., 2002). The development of mental toughness may be specific to the framework to which the construct applies (Assamoah. B., 2013). Some aspects of mental toughness are gained through social experiences, while other aspects could be taught (Gordon et. al., 2005). Certain extraneous factors are influential in the advancement of mental toughness. These factors were listed as environmental influences which serve as the basis for the progression of other identified characteristics (e.g., character, attitude, and thinking) in the systematic maturation of mental toughness. Environmental influences include the performer's childhood background, upbringing, and subsequent exposure to unfamiliar circumstances and environments (Bull et. al., 2005). (Connaughton et. al., 2008) highlighted the importance of three key mechanisms facilitating mental toughness development and maintenance: an insatiable desire and motivation to succeed, a strong social support network, and the use of basic as well as advanced psychological skills. Training programmes also influence the development of mental toughness in a debilitating or facilitative manner (Gucciardi et. al., 2009). The following mechanisms influence the development of mental toughness: early childhood experiences including emotional support and encouragement, coach-athlete relationship example open lines of communication, coaching philosophy that is holistic development of athletes' skills and social and personal development, training environment (creating a challenging environment both on and off the field), specific strategies for improving three characteristics including: personal values, concentration and focus, and ability to handle pressure (i.e., using drills and training that help players develop an awareness and understanding of the game) (Gucciardi et. al., 2009). (Gucciardi et. al., 2009) believe that a healthy coach-athlete relationship enhances the development of a key mental toughness characteristic of emotional intelligence. Many specific mental skills training programmes have been designed to develop Mental Toughness in performance, as it is believed Mental Toughness is not an inherited gift but the fruits of learning which was acquired through hard work, understanding, and practice (Connaughton et. al., 2007).

## **MEASURING MENTAL TOUGHNESS**

In sports the recognition and nurturing of mentally tough athletes have become a prime focus. Therefore a need arises for psychometrically-sound instruments to assess mental toughness. Over the years researchers have focussed on developing questionnaires to measure mental toughness. (Loehr, 1986) developed the Psychological Performance Inventory (PPI) as the general measurement of sports mental toughness. The PPI is a 42-item self report instrument developed to measure reflecting Mental Toughness factors. Seven factors were presented by means of six questions each and these factors included: self confidence, negative energy, attention control, visual and imagery control, motivation level, positive energy and attitude control. All the presented questions in the PPI were answered by means of a 6 point Likert scale ranging from 1 representing false to 6 representing true. The PPI has, however, been subjected to criticism regarding its proposed weak psychometric properties and for lacking an adequate conceptual grounding (Middelton et. al., 2004).

(Clough et. al., 2002) presented a rigorous measure of mental toughness The Mental Toughness Questionnaire-48 (MTQ-48). The scale consisted of 4 attributes which were challenge, commitment, control and confidence and included 48 questions. An 18-item (MT18) was additionally developed and utilised to allow increased accessibility for the sports people (Clough et. al., 2002). The 18 items of the MentalToughness-18 are measured on a five-point Likert type scale anchored by 1 (strongly disagree) and 5 (strongly agree)

The Mental Toughness Inventory(MTI) (Middleton et. al., 2004) was a 67-item self-report instrument purported to measure 12 attributes of mental toughness as well as a global measure of mental toughness, namely: self-efficacy, potential, mental self-concept, task familiarity, personal best, value, goal commitment, perseverance, task-specific attention, stress minimization, positivity, and positive comparison. The MTI is now revised and reduced to 36 items.

(Gucciardi et. al., 2009) developed the Australian Mental Toughness Inventory to measure the mental toughness of Australian Footballers.

(Sheard et. al., 2009) has develop sport Mental Toughness questionnaire(SMTQ) to measure Mental Toughness. The 14-item SMTQ provides a global measure of MT as well as the three subscales of confidence, constancy, and control. Participants respond to items using a 4-point Likert scale, ranging from (1) not at all true, to (4) very true.

(Goldberg. A., 2004) developed a mental toughness questionnaire. The questionnaire consists of 30 items and includes both positive and negative responses that is true and false. It covers 5 attributes namely reboundability, dealing with pressure, concentration, confidence and motivation.

## **MENTAL TOUGHNESS AND PERFORMANCE**

Several studies have demonstrated a positive relationship between mental toughness and performance. It is presumed that athletes who perform better are more mentally tough (Newland. A., 2012). In a study of the psychological characteristics of Olympic champions, (Gould et. al., 2002) identified mental toughness as the mental skill factor most frequently cited as a significant contributor to sports performance enhancement. (Alderman ,1974) highlighted the association between mental toughness and sport performance when he proposed that the best athletes need to be both physically and mentally tough. Mental Toughness is the edge that enables you to be consistent, confident, focused and determined during high pressure situations in order to perform at maximum potential. An individual with mental toughness can be quite, well mannered, ethical, friendly, helpful, and affable and warm. The quality of mental toughness means that an individual has the ability to master the naturally unmanageable desire of the body and mind and bring them under a discipline to achieve and sustain demanding goals and performance under pressure (Kamlesh et. al.,1998). Golby et. al., 2003) reported that rugby and Wushu athletes, respectively, at higher levels of competition were more mentally tough than their less skilled peers. In studies evaluating the reliability of the MT48, (Clough et. al., 2002) showed greater performance on a cognitive planning task among more mentally tough subjects, while (Crust and Clough 2005) showed a significant and positive relationship between mental toughness and

performance on a weight bearing endurance task. There is evidence that Mentally tough athletes reach higher skill levels than athletes who are less Mentally tough (Golby et. al., 2004). There is also evidence that Mental skills training programs enhance both performance and self-rated levels of Mental Toughness (Sheard et, al., 2004). Mental Toughness can make a bigger difference in the outcome of athletic performance than physical abilities (e.g., speed or power), especially in athletes at high skill levels (Williams, 2009). (Crust, 2008) suggested that successful outcomes be seen in relative, rather than absolute, terms because, theoretically, Mental Toughness is a concept applicable to athletes of all skill and ability levels. (Loehr ,1995) described Mental Toughness as an ability to consistently perform towards the upper ranges of one's talent and skill, regardless of competitive circumstances.

### **TYPE OF SPORTS AND ITS EFFECT ON PSYCHOLOGY**

(Mahony et. al., 1987) indicated that there is a difference between psychological profile athletes of team sports and individual sports. (Cox et. al., 1996) found that athletes of individual sports because they cannot rely on the teammate have higher level of preparation. (Wals et. al., 2002) showed that type and nature sports are different in terms of some features. (Jones et. al., 1995) stated that athletes in different sports during competition give different responses to stimulates and according to mental skills their interpretation is different from the anxiety and also believe that skills which in the open skills sports (which are preferably group) are should not necessarily be used in the closed skills sports (which are more individual).( Adam et. al., 2009) hypothesized that there would be significant differences in mental toughness among athletes of different: (a) achievement level, (b) gender, (c) age, (d) sporting experience, and (e) sport type (team vs. individual and contact vs. non-contact sports)

### **SUMMARY**

Although mental toughness is said to be an essential factor in deciding the outcomes of sports performances there has been very few researches on this topic. Lately many researchers have identified the importance of mental toughness and conducted many studies regarding the same. Various definitions of the term mental toughness have been put forth. It is said that mental toughness consists of many attributes. All these attributes contribute to the athlete being mentally tough. It gives an edge to the athletes over their opponents. Over the years many scales have been developed to measure the mental toughness of the general population as well as the athletes. The studies that have been previously conducted show that there is a direct relation of mental toughness with performance. It shows that mental toughness depends on the age, gender, type of sports and level of achievement of the players. Higher the level of achievement better is the mental toughness. Also the type of sports plays a role in mental toughness. Hence the researcher has chosen this topic to compare mental toughness between individual game and team game players.

### **CONCLUSION**

Often sports competitions are decided by narrow margins. The outcome of these games are based mostly on the psychological supremacy that the athletes possess over each other. It has also been suggested in previous researches that mental toughness plays a very vital role in winning competitions. A number of



theoretical frameworks have been put forward in the past years to explain the concept, meaning, development, maintenance, and measurement of mental toughness. Also various researches have been conducted to highlight the importance of mental toughness in sports performance. Hence it is essential to outline the framework of the researches that have been conducted on mental toughness as it will serve well to support the argument behind this current study. It will serve as a bridge between the introduction of the research question and presentation of the original contribution.

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