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Understanding, Developing and Maintaining Mental Toughness in Tennis

Introduction
‘Mental toughness’ is invariably associated with performance excellence in the coaching and sport psychology literature. Loehr(1,2) was perhaps the first sport psychologist to popularize the term ‘mental toughness’ and contended that at least 50% of superior athletic performance could be attributed to mental factors. Despite widespread agreement on the importance and benefits of mental toughness, research studies are limited and many definitions of mental toughness are evident within the literature.(3)

In a pioneering qualitative study with 131 expert coaches and 160 athletes, Fourie and Potgieter(4) identified 12 characteristics constituting mental toughness. These characteristics were: 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, Hanton and Connaughton(5) also identified 12 attributes as keys to mental toughness in their qualitative study of international athletes. These attributes were listed in rank order of importance as: (a) self-belief in one’s ability to achieve competition goals; (b) self-belief that one possesses unique qualities and abilities; (c) desire and internalized motive to succeed; (d) recover from performance setbacks; (e) thrive on competitive pressure; (f) accept competitive pressure as inevitable and cope with it; (g) not adversely affected by other’s performances; (h) fully-focused in the face of personal distractions; (i) ability to switch a sport focus on and off as required; (j) fully-focused in the face of competition-specific distractions; (k) ability to push physical and emotional pain barriers; and, (l) psychological control following unexpected and uncontrollable competitive sport events.

While Jones et al(5) made significant advances towards an understanding of mental toughness, and the attributes of the mentally tough performer, the Jones et al. study examined a mixed elite sport population (representing swimming, sprinting, artistic and rhythmic gymnastics, trampolining, middle-distance running, triathlon, golf, rugby union and netball). In their recommendations for future research, the researchers highlighted the need for sport-specific investigations of mental toughness. In response, there have been, to date, three sport-specific studies on mental toughness, namely in cricket,(6) soccer(7) and Australian football.(8)

Abstract
Eighteen (10 female and 8 male) recently retired top world-ranked Australian professional tennis players responded to a questionnaire that was developed to address future directions by mental toughness researchers. A series of inductive content analyses was conducted to analyze the qualitative data obtained from participants’ responses. These analyses revealed that mental toughness is a most sought-after dynamic attribute that encompasses a range of abilities (e.g., focus, work ethic) to consistently perform well under pressure. Further, mental toughness is thought to be ‘taught’ and/or ‘acquired’ over many years and can be influenced by factors that include injury, changes in a player’s technique and match results. Examples of mentally tough players were cited and reasons given as to their selection as outstanding mentally tough competitors. Sport psychologists, coaches, parents and other mentors were identified as significant members of a support team to guide and equip players to be mentally tough competitors. This study’s value to the tennis community includes practical benefits from gaining a fuller understanding of what is arguably one of the most important psychological skills in achieving excellence and enjoyment in tennis, namely mental toughness.

Keywords: mental toughness, tennis.
The Bull et al. (6) study of international cricketers identified four themes of mental toughness, which were subsequently used to disseminate findings to the cricket coaching and playing population in England. These themes were: (a) environmental influence; (b) tough character; (c) tough attitudes; and, (d) tough thinking.

Findings of the Thelwell et al. (7) study of elite soccer players were generally consistent with those of Jones et al. (5) Mentally tough soccer players were found to exhibit 10 key attributes, namely, self-belief, focused attention, ability to react to situations positively, ability to persevere under pressure, commitment to get out of trouble, controlled emotions, wanting the ball at all times, having an on-field presence, control of off-field issues and enjoying the competition.

In their study of Australian footballers (8) endorsed the major attributes generally ascribed to mental toughness, namely, self-belief and confidence, attentional control, motivation, commitment and determination, positive and tough attitude, resilience, enjoying and handling pressure and quality preparation. These researchers concluded that mental toughness appears to be a multi-dimensional construct with interconnected attributes and was important not only for situations with negative effects (e.g., injuries, de-selection) but also for some situations with positive effects (e.g., good form, previous season champions). Based on their work, Gucciardi et al (8) developed a definition of mental toughness as:

A collection of experientially developed an inherent sport-specific and sport-general values, attitudes, emotions, and cognitions that influence the way in which an individual approaches, responds to, and appraises both negatively and positively construed pressures, challenges and adversities to consistently achieve his or her goals

Given the emphasis placed on National Tennis Associations and today’s tennis coaches to develop mentally tough players, (9) and recommendations for sport-specific research on mental toughness, (5,10) the need existed for a study of mental toughness in tennis. This first known mental toughness tennis study addressed this need and, further, sought to answer questions posed by mental toughness researchers (5, 11) as to how performers successfully maintain a state of mental toughness throughout their sporting careers, why mental toughness might fluctuate and ‘what’ needs to be taught and ‘how’. Accordingly, the main aims of this study were to gain a fuller understanding of mental toughness, how it can be developed, maintained, lost and taught from the perspective of former elite professional players who had had invaluable experiences in challenging themselves to be constantly mentally tough in order to succeed on the international circuit.

Method

Participants
Eighteen (10 female and 8 male) former top-ranked Australian professional tennis players participated in the study. Female and male players had competed on the circuit for an average of 11.6 (± 4.8) years and 12.8 (±2.1) years respectively. On average, female players had retired from the professional circuit in 2004 compared with 2003 for male players. Female players had achieved a mean career high world singles rankings of 116 (range 4-400) and doubles ranking of 120 (range 3-400). Male players had achieved a mean career high world singles ranking of 85 (range 19-215) and doubles ranking of 46 (range 1-135).

Material
Mental toughness was examined by means of a written questionnaire that was developed for the purposes of this study. The questionnaire contained the following open-ended questions:

1. What does mental toughness mean to you?
2. Which players (current and former) do you consider to be mentally tough and why?
3. How did you, or how do you think other players, develop mental toughness?
4. How do players maintain their mental toughness on a match-by-match basis and throughout their careers?
5. Why might players lose their mental toughness edge?
6. What recommendations do you have to assist/teach players to be mentally tough? What needs to be taught, how and by whom?

These questions had been finalized after consultations with a member of the Australian College of Sport Psychologists, who was knowledgeable in qualitative research design and the purposes of this study.

Procedures

Selection of participants
Participants were selected from a list provided by Tennis Australia of former top 10 Australian players who had retired from the professional circuit since 2000 and whose contact details were known. Of the 25 players contacted, 18 (64%) agreed to participate in the study.

Data collection method
The first researcher spoke (in person and by telephone) with each player on the said list about the study (outlining its purpose, benefits and requirements) and, if the player was in agreement, then emailed the player a copy of the
questionnaire. If requested, a hard copy of the questionnaire was also mailed. Participants were instructed to respond in as much detail as possible and requested to email or mail responses with assurance given that these would remain anonymous. Data was collected over a 4-month period.

- Data analysis
A series of inductive content analyses were conducted to analyze the qualitative data. This procedure involved the identification of raw data themes in participants’ narratives (smallest unit of information that could stand by itself) and those themes that shared explicitly similar meaning were then grouped into higher order themes. All steps in the inductive content analyses were scrutinized by an independent member of the Australian College of Sport Psychologists, who was knowledgeable in qualitative research methods. This member reviewed the researcher’s analyses and challenged her to justify the identification and organization of raw data themes. Where discrepancies between the member and researcher existed, these were discussed and consensually validated.

Results

What mental toughness means
Six key characteristics reflecting mental toughness in tennis were revealed from the analysis. Each characteristic is presented in Table 1 with two representative quotes.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Representative Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to address challenges</td>
<td>Constantly finding solutions – especially when things are not going your way</td>
</tr>
<tr>
<td></td>
<td>The ability to consistently come up with a way to win a match no matter what the</td>
</tr>
<tr>
<td></td>
<td>prevailing circumstances</td>
</tr>
<tr>
<td>Emotional control</td>
<td>Be in control of your emotions and don’t give anything away to your opponents even</td>
</tr>
<tr>
<td></td>
<td>if you are crossed at yourself</td>
</tr>
<tr>
<td></td>
<td>Not getting too nervous in tight situations in matches</td>
</tr>
<tr>
<td>Focus</td>
<td>Thinking clearly while under pressure</td>
</tr>
<tr>
<td></td>
<td>Ability to focus on the match and compete in the moment</td>
</tr>
<tr>
<td>Never-say-die persistence</td>
<td>Having the will to fight at all stages of the match even if you are facing</td>
</tr>
<tr>
<td></td>
<td>defeat or getting thrashed</td>
</tr>
<tr>
<td></td>
<td>When things are stacked against you, you have the strong mind to push through all</td>
</tr>
<tr>
<td></td>
<td>self-doubt</td>
</tr>
<tr>
<td>Self-belief and confidence</td>
<td>It is an inner belief that a player has when he/she is confident in their ability</td>
</tr>
<tr>
<td></td>
<td>To remain strong and confident in battle</td>
</tr>
<tr>
<td>Take responsibility</td>
<td>Take ownership of the outcomes</td>
</tr>
<tr>
<td></td>
<td>Do not have any excuses when you lose</td>
</tr>
</tbody>
</table>

Players who are mentally tough
As previously reported, Rafael Nadal was considered the most mentally tough player with 10 (55%) participants nominating him ahead of Lleyton Hewitt (33%), Serena Williams (22%) and Roger Federer (17%) and other past and current champions. Nadal was seen as an exceptional player in light of his unwavering ability to compete for every point each time he plays; a love, hunger and passion for competition; and, a resilient positive self-belief after return from injury.

How players develop mental toughness
The key means by which players were thought to develop mental toughness were: (a) mental skills training and tools; (b) physical training; (c) experiential learning; (d) self-reflection; (e) natural ability; (f) self-motivation and focus; and, (g) parents and support team. As articulated by one participant,

*Mental toughness comes from having many different types of experiences both on and off the court and learning from them. It’s figuring out how not to make the same mistakes and setting up drills and tasks on the practice court so that when you play a match you know the patterns of play you want to create and giving yourself tools to cope with any situation. Certainly being able to identify the times in matches when you were in the zone and finding ways to replicate that.*

How players maintain mental toughness
The key means by which players were thought to maintain mental toughness on a match-by-match basis...
and throughout their careers were: (a) a player’s on-going self-reflection for improvement; (b) right support team around a player; and, (c) adoption of psychological tools. These means are illustrated by one participant,

A player who is mentally tough believes in their own abilities. They wake up every day trying to become a better player and athlete. They fine-tune their skills from ball striking/to executing patterns of play /analyzing how they can improve their strengths and weaknesses. Players who are able to set both short term and long-term goals that are realistic are able to keep their focus/mental toughness.

This quote highlights the tool of goal setting. Other psychological tools adopted by players to maintain their mental toughness included having rituals both on- and off- the court, using positive affirmations, visualization and developing game plans.

Why players lose their mental toughness

An array of factors was cited as reasons why players lose their mental toughness. Key factors included: (a) injury and illness; (b) lack of goals after achieving success; (c) lost passion and burnout; (d) self-doubts and inability to handle expectations; (e) traumatic incident; (f) continued losses; and, (h) loss of confidence after making changes to the game. As illustrated by one player,

Players can lose their edge as they get older and the fire is maybe not burning quite so bright. It happens regularly in tennis. Tennis is so demanding physically, travel, mentally that it is hard for players to stay on top of their games. Injuries can play a big part in players losing mental toughness. They lose confidence and as there are always younger, hungrier players coming up, it is hard to stay at the top of the game for an extended period.

What needs to be taught, how and by whom

All participants made suggestions to guide aspiring players to become mentally tough. Key suggestions included: (a) teaching psychological skills including relaxation, visualization, focus, goals setting, self-awareness, game planning and positive perspective on success; (b) adopting role models and developing team support; (c) empowering player to make decisions and take responsibility; and (d) developing outstanding fitness and a weapon (e.g., powerful serve or forehand). Participants nominated parents, coaches, sport psychologists, fitness advisors and ex-players are those equipped to guide players in these endeavors. As articulated by one player,

It is important to have a coach/mentor who understands what being mentally tough is. The coach needs to be able to communicate with the player how to be mentally tough. They need to help the athlete to develop a strong/disciplined work ethic. Identify successful patterns of play for that particular player and make sure the player understands them. The coach identifies the weaknesses of a player and works on improving that area or it may be that area can be hidden because of the players other strengths.

Discussion

This study extended the knowledge base of mental toughness in sport with a sport-specific study of mental toughness in tennis. In terms of understanding what mental toughness means, this study endorsed Gucciardi’s (8) notion that mental toughness is a multi-dimensional construct that embraces a range of positive skills, abilities, emotions, cognitions and values. Further, this study provides evidence to support the notion of mental toughness as a set of global characteristics that highlight the importance of self-belief, focus and persistence. Notwithstanding, this study when taken in context with other sport-specific studies, (6,7,8) highlights the importance of text and consideration of critical demands and challenges pertaining to individual sports. With respect to tennis, mental toughness requires players to be emotionally in control with the ability to solve problems and deal with demands such as matches, training, media, travel, fatigue, loneliness etc. While these requirements may be assets in other sports, they are essential in tennis.

It is interesting to note the link this study makes between ‘mental and physical fitness’. Participants proposed that attending to physical training helps develop mental toughness and a lack of fitness contributed to players losing their mental toughness edge. This link between body and mind has been long espoused by ancient Greek philosophers and forms the cornerstone of the concepts of ‘flow’ and ‘playing in the zone’. (14) For the mentally tough player, the distinction between the mental and physical appears to merge so that he/she consistently performs to the best of his/her ability under difficult, challenging and pressure conditions. No excuses are ever required because one’s best is constantly given to the task at hand.

This study’s findings as to why players might lose their mental toughness suggest mental toughness is fluid, dynamic and, indeed, volatile. It is not something that once gained, remains forever! Rather, players need to continually tend to their craft and embark on an on-going program of daily improvement. To this end, participants in this study offer a range of suggestions that focus around the adoption of mental skills including visualization, goal setting and a ‘winning’ approach (where effort and improvement are key perspectives versus winning matches).

Participants’ suggestions to guide aspiring player how to be mentally tough also support Gordon’s (11) contention that mental toughness can be ‘taught’ and ‘caught’. In
this context, former professional players are themselves potential mentors and support persons to aspiring players. Indeed, former players have ‘been there and done that’ such that their own experiences are invaluable reference points in guiding others. Parents, coaches, fitness trainers and sport psychologists also can play a contributing role and form a support team to provide a player with a ‘like-minded’ group who believe in the player and espouse the values of hard work, discipline, fair play, fun, tenacity, perseverance and passion in their everyday activities.

While the strength of this study was its information-rich groups of participants (12) to help elucidate the nature of mental toughness in tennis, the study is not without its limitations. Limitations include the use of self-report data. (15) and, accordingly, future researchers might look at an alternative approach (e.g., longitudinal study). Notwithstanding, it is hoped this study provides clues as to how players can gain a psychological advantage and enjoy the pursuit of excellence by developing and maintaining mental toughness. No longer is mental toughness deemed to be just a ‘gift’ but rather a reward for concentrated hard work to consistently give one’s best at all times.

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References

Conflict of interest: none declared

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Tennis Australia and the International Hall of Fame recently honored Dr Young for her contributions to Australian Tennis.

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