

**AN INVESTIGATION INTO THE NATURE
OF MENTAL TOUGHNESS IN SPORT**

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DECLARATION

I, the undersigned, hereby declare
that the work contained in this thesis is my own original work
and that I have not previously in its entirety or in part
submitted it at any university for a degree.

SUMMARY

This study investigated the components of mental toughness as reported in the sport psychology literature and by coaches and athletes. A questionnaire devised for this purpose by the researcher, was completed by 131 expert coaches from 30 different sport disciplines and by 160 elite level athletes from 31 different sport disciplines. The information gathered from the literature, as well as from the coaches' and athletes' written statements, was analysed by means of an inductive content analysis. Content analysis organises the data into increasingly more complex themes and categories representing the components of mental toughness. From the literature analysis, eight components of mental toughness were identified, these being: motivation level, arousal control, confidence maintenance, cognitive skill, competitive behaviour, planning skills, emotional readiness and team cohesion. The analysis of the statements provided by the coaches and athletes resulted in the identification of 12 components of mental toughness. These are, in descending order: 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, religious convictions and ethics. In addition the coaches and athletes rated their mentioned characteristics. The coaches regarded concentration as the most important characteristic while the athletes regarded perseverance as most important. The coaches rated a coach and a sport psychologist respectively, to be significantly more effective ($p < 0.05$) in strengthening the characteristics of mental toughness than athletes did. It is concluded that a definition of mental toughness should include the following components: motivation level, coping skills (including arousal control strategies), confidence maintenance (including discipline and goal directedness), cognitive skill, competitive behaviour (including competitiveness and possession of the prerequisite physical and mental requirements), planning and preparation skills, psychological hardiness (including emotional readiness) and, finally, religious convictions and ethics. In team sports the definition of mental toughness contains an extra component, namely team cohesion and unity.

OPSOMMING

Hierdie studie het die komponente van sielkundige taatheid ondersoek soos dit in die sport-sielkunde literatuur en deur afrigters en atlete vertolk word. 'n Vraelys, wat deur die navorser vir hierdie doel ontwerp is, is deur 131 kundige afrigters vanuit 30 verskillende sportdissiplines en deur 160 elite atlete vanuit 31 verskillende sportdissiplines, voltooi. Die inligting ingesamel vanuit die literatuur, asook die stellings gemaak deur die afrigters en atlete, is deur middel van 'n induktiewe inhoudsanalisemetode geanaliseer. Inhoudsanalise organiseer data in toenemende komplekse temas en kategorieë wat die komponente van sielkundige taatheid voorstel. Vanuit die analise van die literatuur het die volgende agt komponente van sielkundige taatheid na vore gekom: motiveringsvlak, beheer van opwekking, handhawing van selfvertroue, kognitiewe vaardigheid, kompeterende gedrag, beplanningsvaardighede, emosionele gereedheid en spankohesie. Die analise van die afrigters en atlete se stellings het tot gevolg gehad dat 12 komponente van sielkundige taatheid geïdentifiseer is. Hulle is, in dalende volgorde: motiveringsvlak, hanteringsvaardighede, handhawing van selfvertroue, kognitiewe vaardigheid, dissipline en doelgerigtheid, mededingendheid, beskikking oor die nodige liggaamlike en sielkundige vereistes, eenheid van die span, voorbereidingsvaardighede, sielkundige gehardheid, godsdienstige oortuigings en etiese waardes. Bykomend het die afrigters en die atlete die belangrikheid van hul stellings beoordeel. Konsentrasie is deur die afrigters as die belangrikste geoordeel terwyl deursettingsvermoë deur die atlete verkies is. Die afrigters het bepaal dat 'n afrigter en sportsielkundige beduidend meer ($p < 0.05$) die eienskappe van sielkundige taatheid kan versterk, as wat die geval met die atlete was. Die gevolgtrekking is dat 'n definisie van sielkundige taatheid, die volgende komponente moet bevat: motiveringsvlak, hanteringsvaardighede (sluit opwekkingsbeheer in), handhawing van selfvertroue (sluit dissipline en doelgerigtheid in), kognitiewe vaardigheid, kompeterende gedrag (sluit mededingendheid en beskikking oor die nodige fisieke en sielkundige vereistes in), beplanning- en voorbereidingsvaardighede, sielkundige gehardheid sluit emosionele gereedheid in) en, laastens, godsdienstige oortuigings en etiese waardes. Spansportsoorte se definisie van sielkundige taatheid sluit 'n ekstra komponent, spankohesie en –eenheid in.

DEDICATION

- To Hanzo and my family for their support.
- To my supervisor, Prof. J.R. Potgieter, for his knowledge and guidance.
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CHAPTER ONE

STATEMENT OF THE PROBLEM

Why does an athlete with outstanding physical abilities, not become a champion?

The answer is often related to mental factors. Williams (1988) states that mental toughness may have more of an influence on the outcome of a contest than such obvious physical attributes as speed and power. Fox (in Williams, 1988) contends that when performance deteriorates, the cause is usually a decline in mental efficacy. Jimmy Connors (in Williams, 1988) estimates that succeeding at top-level competition is 95% due to mental factors. He insists that the essential component in order to succeed at top-level sport, is not strategic planning, but the right attitude towards the increase in pressure, money and an active tournament schedule.

Mental toughness is a term that is frequently used by sport commentators when a team or individual is perceived to exhibit some characteristic that is helping them gain the upper hand. But what is mental toughness? What are the characteristics athletes display when they have mental toughness? Can the elements of mental toughness be taught and thus strengthened by a coach or sport psychologist and subsequently be both learned and applied by athletes?

PURPOSE OF THE STUDY

The researcher aims to find a definition of mental toughness by reviewing the opinions of authors in the relevant literature. In addition, expert coaches and elite athletes will complete a questionnaire designed by the researcher in order to ascertain their opinions about this matter. They will be asked to rate the characteristics they mention. In addition they will be asked to what extent a coach or sport psychologist could strengthen these characteristics. The purpose is therefore to identify the components of mental toughness as reported in the sport psychology literature and by coaches and athletes. The differences and/or similarities that may be found between these sources of information will be highlighted. An additional purpose is to determine whether the targeted subjects believe that coaches and sport psychologists can strengthen the characteristics of mental toughness.

RELEVANT LITERATURE REVIEW

There is a surprising dearth of information in the printed literature dealing specifically with studies of mental toughness. Journal articles dealing with mental toughness utilise this term when studying team selection (Rathbun, 1983, Tindall, 1980), or when highlighting the factors of importance to success in specific sports (Edinger, 1983; Jones, 1982; Thomas, Schlinker, & Over, 1996; Thomas & Sinclair, 1978; Tunney, 1987; Watts, 1978). An article by Potter (1998) highlights mental toughness as a factor of importance during injury rehabilitation. Articles by Taylor (1989) and Sargent (1998a) focus on suggestions to develop mental toughness and Sargent (1998b) reviews case studies of problem athletes. Only four articles were found that specifically studied mental toughness.

The authors who first mentioned the term mental toughness were Tutko and Richards (1972). They did not specifically focus on mental toughness, but developed the total *Motivation Rating Scale*. This scale determines an athlete's mental toughness by analysing the answers to only five questions using a 5-point Likert scale (Tutko & Richards, 1972). Dennis (1978) utilised this scale in the first relevant study to be discussed. He did not obtain very encouraging findings regarding mental toughness and 16 years passed before other studies were conducted on this specific subject. The relevant printed studies will be discussed in more detail below.

Dennis (1978) tried to examine the interactional effects of the personality trait of mental toughness and success and failure instruction upon subsequent performance. The underlying rationale was that if this personality trait contributed to excellence of performance, then individuals with strong and weak mental toughness would respond differently when confronted with failure conditions. The subjects were 238 undergraduate physical education students who completed the total *Motivation Rating Scale*. The respondents with the highest and lowest score on the subscale of mental toughness were identified. A choice reaction time task, described by Carron and Bennett (in Dennis, 1978), was used as the dependant variable. To introduce the experimental condition, some subjects were informed that they were either well below their performance goals, or exceeding them. The experimental statistical analysis consisted of a 2 (success vs. failure) x 2 (high vs. low mental toughness) factorial design.

Dennis (1978) reported that no significant interactions between mental toughness and success or failure were found. Similarly, no differences were found between either the two levels of mental toughness or the two levels of success. He raised the question of whether mental toughness is a valid personality construct. He concluded that it would be erroneous to suggest to physical educators and coaches that mental toughness is an important personality attribute underlying behaviour in sport. In this study Dennis (1978) attributed the lack of results to three possible reasons.

The first is the relative unknown reliability and validity of the *Motivation Rating Scale* that was used and thus the uncertainty of whether or not mental toughness is a valid personality construct. The second reason is the fact that the subjects came from a population that is regarded to be predominantly “mentally tough”. The third reason, as previously mentioned, is that the scale used determines mental toughness from the responses to only five questions using a 5-point Likert scale. This is a relatively small number of questions and a restricted continuum of choices. Dennis (1978) does not feel that these reasons are convincing. A plausible alternative explanation appears to be that the construct of mental toughness, as it applies in laboratory success and failure, lacks validity.

The second relevant study was done by Dongsung and Kang-Heon (1994). They tested the psychological factors of mental toughness of 223 female athletes (107 elite, 116 non-elite) using Loehr’s (1982) *Mental Toughness Test*. Loehr (1982) proposes that elite athletes should obtain a minimum score of 19 for each mental toughness factor as ascertained by this test. Dongsung and Kang-Heon (1994) compared the mental toughness of athletes at different skill levels (elite and non-elite female athletes) and athletes in different sport disciplines (volleyball, table tennis, badminton, archery and shooting). They computed the mean and standard deviations of the psychological factors of mental toughness of each different group’s skill level, as well as that of the participants in each sport discipline. A two-way analysis of variance (ANOVA) was conducted to test the influence of the psychological factors with respect to the sport disciplines and skill levels. The Student-Newman-Keuls test was used to assess whether the participants in the different sport disciplines differed from one another regarding psychological factors. The effects of interrelated factors between the participants with different skill levels and in the different sport disciplines were tested by means of a t-test.

They found that the mental toughness profiles for the factors of visualisation and imagery control, motivation level and attitude control, were high in elite female athletes, although there were slight differences among the different sport disciplines. Generally the female athletes in the sport disciplines of volleyball, archery and shooting showed higher mental toughness than the table tennis and badminton players. They found that all the athletes showed an average score of 18 for the arousal control and attention control factors. They suggested that certain strategies be employed to eradicate this deficit. They also found that all factors, except arousal control, were higher in the elite female athletes than in the non-elite female athletes. The co-efficiencies between sport disciplines and skill levels were significantly different in the psychological factors self-confidence, arousal control and positive energy (Dongsung & Kang-Heon, 1994).

The third study was conducted by Kang-Heon, Dongsung, Myung-Woo and Elisa (1994). The purpose of this study was to develop a norm for the *Mental Toughness Test* (MTT) for Korean table tennis players. The subjects consisted of 172 middle school, 199 high school, and 145 college and adult table

tennis players. Each player's mean and standard deviation score for the Korean version of the MTT were calculated. The tests used for the statistical analysis were the two-way ANOVA and the Student-Newman-Keuls. The norms were developed for the 7 subscales of the MTT and were provided in a standard score and percentile value.

The results revealed that compared to Loehr's (1982) suggested minimum score of 19, this sample's scores were high on the following factors, namely motivation level, attitude control and visual imagery control. The sample's scores on the following factors were lower than the suggested minimum score of 19, namely arousal control, self-confidence and positive energy. Kang-Heon, et al. (1994) suggested that these table tennis players should employ some sort of intervention strategy to improve their mental toughness scores on those factors that were lower than the suggested score.

The fourth relevant study to be reviewed was executed by Davis and Zaichkowsky (1998). Their sample was 38 players who were either eligible for National Ice Hockey League (NHL) entry drafting or were in their first season on an International Ice Hockey League team. They investigated the mental toughness of these ice hockey athletes, assessing causal explanations for hypothetical, but realistic events. The object was to judge whether those players classified as showing mental toughness in their on-ice behaviour, are different from those rated as having less mental toughness. They used *Seligman's Attributional Style Questionnaire* developed by Peterson and Seligman (in Davis & Zaichkowsky, 1998) to determine the players' attributional style. The players were judged to have either an optimistic explanatory style or a pessimistic explanatory style. Five observers, the general manager, the coach and two assistants rated the players' mental toughness. Due to geographical constraints, it was not possible for each player to be rated by each evaluator. Each player did, however, receive a minimum of two ratings.

Davis and Zaichkowsky (1998) developed the criteria for rating of mental toughness in consultation with the evaluators. The five following criteria for on-ice behaviours were as follows:

- (1) *Adversity response*. The athletes seem to respond with increased effort and competitiveness to challenge, failure and setbacks.
- (2) *Over-achievement*. They exceed their usual performance while under stress.
- (3) *Effort*. They play consistently and with effort at the level of their ability.
- (4) *Enthusiasm*. They appear enthusiastic and generate enthusiasm in their team-mates.
- (5) *Skill*. This was a subjective assessment of the players' demonstrated ability.

Davis and Zaichkowsky (1998) found that contrary to their predictions, the on-ice behaviours of these athletes suggested that players rated high on mental toughness used an explanatory style that is characterised by internal, stable and global explanations for negative events. This puts them at risk of

pessimistic and depressive thinking. It was concluded that positive on-ice behaviour during adversity may be mediated by a pessimistic explanatory style. This study suggested that mentally tough players were pessimistic despite their histories of success and prominence in the NHL entry draft and evaluators-rated evidence of a positive response to adversity, over-achievement, effort and enthusiasm. It was thus concluded that young ice hockey athletes, who are rated as mentally tough, can use a high risk explanatory style for negative events without giving behavioural evidence of depressive mood.

It can thus be deduced that a study of mental toughness is of great importance. It is hoped that this study will serve an important function in clarifying the term mental toughness.

It is clear from the study of Dongsung and Kang-Heon (1994) that James Loehr's writings covering the subject are thorough and extensive. Loehr started conducting mental toughness clinics in 1981. He has also written several books and produced an audio-tape on the subject (Williams, 1988). His ideas and point of view will be thoroughly discussed in chapter two. This chapter will also review the literature covering the subject.

IMPORTANCE OF THE STUDY

Many athletes have all that it takes physically to be champions, but for some reason they do not perform to the best of their abilities. If the psychological factors that influence performance can be identified, understood and controlled, then physical execution of skills will improve (Graham, 1990). It is therefore important to be able to identify those mental characteristics that contribute to better performance. These attributes can then be taught to and subsequently developed by the athlete until they can be utilised during competitive situations (Sargent, 1998a). Mental toughness may be an important factor when striving for personal excellence in the sport domain and in life (Hodge, 1994).

Hawthorne and Hawthorne (1995) believe that it is essential to increase the emphasis on psychology in sport where the improvement of mental toughness is essential. They state that all over the world sport psychology plays a major role in elite sport, but in South Africa the emphasis is placed on superior physical ability. This is done to the detriment of mental toughness. They furthermore contend that "a shift in emphasis from single-minded preparation for 'the big day' to an all-round scientific approach to training and sports readiness is desperately needed in South Africa" (p. 52). Lastly they maintain that South Africans should stop focusing only on the outcome of sports participation and start concentrating on the process. Determining and strengthening mental toughness would be an integral part of that process.

METHODOLOGY

An in-depth study of the literature dealing with mental toughness will be undertaken in order to extract the themes of importance via an inductive content analysis procedure. A questionnaire regarding biographical information and sport coached or participated in, will be administered to expert coaches and top-level athletes. This questionnaire will contain an open-ended question regarding the characteristics of mentally tough competitors.

PROCEDURES

The study will be carried out in ten stages. These are:

- Stage 1: The literature regarding mental toughness will be probed to obtain an understanding of the term mental toughness. The information will be organised into themes and categories representing the characteristics of mental toughness as presented by the various authors.
- Stage 2: The empirical phase, which describes the research and the method of capturing the data, will be discussed. This will include some descriptive data about the samples (coaches and athletes).
- Stage 3: The responses of the top South-African experts in the field of coaching to the open ended question regarding the characteristics of mental toughness, will be subjected to the same procedure as is described in stage 1, in order to identify the themes that emerge.
- Stage 4: Elite athletes' responses to the question about mental toughness will similarly be subjected to this procedure to identify themes.
- Stage 5: The emerging themes from stages 3 and 4 will be combined and clustered into coherent and important themes. Subsequent higher order themes will be identified inductively.
- Stage 6: The themes regarding mental toughness emerging from the experts in the literature will be defined and discussed.
- Stage 7: A definition and discussion of the themes that emerged from the expert coaches' and the top athletes' answers.
- Stage 8: The frequency with which different characteristics are mentioned and their rating by the expert coaches and top athletes will be presented and discussed.
- Stage 9: A presentation and discussion of the coaches' and athletes' opinions regarding the effectiveness of the coach or sport psychologist in strengthening mental toughness.
- Stage 10: A discussion of the findings, conclusions and recommendations for future research.

CHAPTER TWO

MENTAL TOUGHNESS: A LITERATURE REVIEW

This chapter will review various authors' opinion regarding mental toughness with important aspects of high level participation opening the discussion. The process will culminate in a definition of mental toughness as derived from the literature. The importance of mental toughness as highlighted in the literature will be mentioned. Furthermore a description will be given of the athlete who is deemed to possess it with the attributes and mental characteristics of mental toughness being highlighted. The discussion on the development thereof will include the building blocks, a programme, an approach, and the steps required. A method to determine mental toughness will also be given. The point of view of James Loehr, a leader in the field of mental toughness, will be thoroughly discussed.

IMPORTANT ASPECTS OF HIGH-LEVEL PARTICIPATION

Jennings (1993) explains that each sport demands something unique from the athlete in the highly stressful and demanding moments of competition. The elements that he highlights from interviews with elite sportsmen are as follows:

- A high level of concentration.
- A strong need to survive.
- An ability to keep on going when hurting and having to deal with pain.
- Learning to play to limitations.
- An ability to focus on not playing their favourite shot under pressure.
- An ability to take no unwanted risks.
- The so-called three Ps: Pain, patience and pressure. The more patience athletes have during competition, the more pressure they are likely to put on their opponent, but the more pain they will have to endure.
- The ability of the mind and body to become one and integrate. The mind will pick up vital cues from the body (and vice-versa). Athletes emphasise that physical toughness creates mental toughness due to the interdependent connection between mind and body.
- Relaxedness.
- Calmness together with an increased determination.
- Focus on a goal — a sign of mental strength.
- Commitment and courage.
- A high expectation of success.

PERCEPTIONS OF MENTAL TOUGHNESS

According to Tutko and Richards (1971), a number of personality traits have been associated with athletic achievement. They are: drive, determination, intelligence, aggression, leadership, organisation, coachability, emotionality, self-confidence, mental toughness, responsibility, trust, and conscience development. These personality traits are divided into two general areas: desire factors and emotional factors. Desire factors are related to the individual's expectations from sport and his/her willingness to work towards reaching his/her goals. Emotional factors deal with the athlete's personal feelings and attitudes about himself/herself, his/her coach and the manner in which he/she is treated. Tutko and Richards (1971) place mental toughness in the area of emotional factors.

Dennis (1981) postulates that one theory that may explain poor performance is the degree to which an athlete possesses mental toughness. He states that mental toughness, as a personality trait, has not received the attention of many personality theorists. It is the responsibility of the coach to treat and communicate with every athlete according to his/her temperament. The coach should first determine which of his/her athletes have strong mental toughness and which have poor mental toughness. This can be achieved by either subjectively evaluating the athletes or by administering the questionnaire that Tutko and Richards (1972) devised, namely the total *Motivation Rating Scale*. The reliability and validity of this scale, however, have not been determined.

DEFINITION OF MENTAL TOUGHNESS

According to Loehr, mental toughness is the ability to welcome, not avoid or minimise, competitive pressure. It is winning the contest with yourself, in other words, with your internal thoughts, emotions and external reactions, which is the ultimate challenge when competing (in Williams, 1988). Fox defines mental toughness as the ability to cope with stress and mental punishment (in Williams, 1988).

IMPORTANCE OF MENTAL TOUGHNESS

Bull, Albinson and Shambrook (1996) state that sport is only partly about ability, talent, accuracy and skill. These factors are not enough — superior nerve is. This means the ability of athletes to respond to a critical situation by playing their best. This again refers to the importance of the mental side of competition. Athletes, coaches and managers all agree that mental toughness is an extremely important attribute to possess if top level performance is desired. These authors contend that many athletes suggest that mental toughness is the deciding factor during competition. Today, at the highest level of

modern sport, there is little else to separate performers in their technical competence or physical fitness.

Smith and Smoll (1989) see mental toughness as a highly prized characteristic within the sporting community. They regard it as the ability to deal with stress and adversity in such a way that performance does not suffer (or even peaks) under conditions that place high physical and psychological demands on the competitor. They discuss four models of anxiety reduction, namely: an extinction model, counter-conditioning model, cognitive mediational model and a coping skills model. These models are beyond the scope of this discussion, but it is important to note that the authors regard anxiety reduction as a necessary component to achieve mental toughness in sport.

Loehr and Kahn (1989) state that “mental toughness is not a substitute for well-grounded strokes, all around athleticism, or top physical condition. But when most other things are equal, the mentally tough player — and the team that practices mental toughness — will succeed” (p. 127).

DESCRIPTION OF A MENTALLY TOUGH ATHLETE

Tutko and Richards (1971) explain that an athlete who is mentally tough is insensitive to the feelings and problems of other people. They maintain that this athlete rarely becomes upset when he/she loses, plays badly, or is spoken to harshly. He/she can accept strong criticism, without it hurting him/her and he/she does not require regular encouragement to be effective. This athlete does not depend on the team for a sense of belonging. They state that mental toughness can be developed in a sensitive athlete by informing him/her that he/she will be required to handle occasional criticism in order to make him/her more effective.

Dennis (1981) claims that athletes with weak mental toughness dwell on past mistakes because they know that their coach, team-mates and the spectators evaluate their performance. They subsequently feel that everyone has an unfavourable impression of them. The coach should not criticise these individuals, but should encourage them to keep on trying, not to give up in order to regain a sense of self-worth and accomplishment. The athlete with strong mental toughness is almost insensitive to criticism and can ignore failure and continue to perform. Dennis (1981) maintains that there may be complications associated with the mentally tough athletes. These athletes might unwittingly adopt the role of the coach and criticise their team-mates for failing. This could lead to hostility between team-mates. In this situation the coach has to point out to these athletes that although their feedback is appreciated, it is the coach's responsibility.

Webster (1984) states that the great American basketballer Bill Russell once made the following statement (p163):

The principle difference between great teams and good teams is not physical skill, but mental toughness. That is, how well a team can keep its collective wits under pressure. Teams which can do this under the greatest pressure will win most of the time. Heart in champions has to do with the depth of their motivation and persistence, how well their minds and bodies react to pressure. It is concentration - that is, being able to do the best under maximum stress, fatigue and pain.

Hodge (1994) defines a mentally tough person as someone who makes things happen, someone who is pro-active, assertive, motivated and committed to mastering their goals. Fox describes successful players as those who expect to win during a competition. The players who overcome poor decisions by judges or referees and physical tiredness, are those with great mental toughness (in Williams, 1988).

ATTRIBUTES OF A MENTALLY TOUGH ATHLETE

Bull, et al. (1996) state that mentally tough athletes possess a number of related attributes, each of which is an element of the overall mental toughness quality. The following are the attributes of mental toughness as identified by them and suggestions to how they might be achieved:

- A strong desire to succeed: Athletes clearly target their ultimate achievement by ensuring that their training programmes have a real sense of purpose, that their sporting careers have an obvious direction, and that they really want to reach their potential. The athlete should set up a detailed goal-setting programme in consultation with his/her coach. This way each training session has a specific purpose and thus the athlete can be focused, committed and dedicated to achievement. The athlete takes P.R.I.D.E., i.e. Personal Responsibility In Delivering Excellence, in his/her performance.
- The ability to stay positive in the face of challenge and pressure: Competition presents continuous problems and it is the athlete's emotional response to problems that determine success or failure. The athlete cannot expect that things will run smoothly during competition and should thus be able to deal with problems in a confident and controlled manner.
- The ability to control the controllables: Athletes should not worry about bad weather, inferior equipment or the opposition's experience. They should instead focus on things about which they can do something. The athletes can thus ensure that their technical,

physical and mental preparations are the best they can possibly be on the competition day. The athletes can enjoy the competition by ensuring that they enter the arena feeling and thinking positively.

- A strong commitment with a balanced attitude: The athletes should be willing to make the necessary sacrifices in order to succeed, should give 100% during good and bad training and competition situations, should put in extra time on physical and mental preparation, take responsibility for their development and dedicate themselves fully to the training and competition programme. But through all this, sport should not consume the athletes' lives. The athletes should take time to enjoy the company of family and friends so that they can return feeling fresh and rejuvenated.
- A high level of self-belief: The athletes should be highly confident and believe that they have the capability to perform well under the most challenging situations. The athletes should also have the ability to refocus and make a strong comeback after a disappointment. Concentration and confidence ensure this, but can only be exhibited with effort and commitment.
- A positive body language: The importance of projecting a positive attitude with appropriate body language should not be underestimated. The signals that the athletes send should display a confident and tough image, which in turn makes it easier to feel positive and ensure a positive attitude (Bull, et al. 1996).

Hemery (1991) states that when athletes do more training and work under more difficult conditions than their opponents do, this prompts them to have greater mental toughness and confidence that they are better prepared than their competitors. This also reduces their self-doubt.

MENTAL CHARACTERISTICS OF A MENTALLY TOUGH ATHLETE

Graham (1990) states that all great golf players in history have achieved mental toughness and consistency by displaying a defined set of mental skills. He mentions that all these players have the following mental characteristics. They are:

- self-motivation
- positive but realistic in their expectations
- in control of their emotions
- determination
- calm and relaxed under pressure
- highly energetic and ready for action
- mentally alert
- self-confidence
- fully responsible

Graham (1990) is convinced that these mental attributes can be used by anyone, regardless of individual personality, temperament, or physical ability. This author further describes an ideal performance state, that, if it is controlled, can be the key to playing consistently well, because all physical action is rooted in the mind. If the psychological factors that influence performance can be identified, understood, and controlled, then physical execution will improve. The above-mentioned elements of mental toughness are a by-product of the ideal performance state and will occur naturally when you learn to get into the “Zone”. The eleven elements of the Zone are as follows:

- mental calmness
- physical relaxation
- low anxiety
- energy
- optimism
- enjoyment
- effortlessness
- automation
- alertness
- self-confidence
- control

DEVELOPMENT OF MENTAL TOUGHNESS

Hodge (1994) states that mental toughness is a skill that can be learned and enhanced through effective teaching, hard work and practise. Loehr and Van den Meer (1981) also state that mental toughness and mental strength are mental skills that can be learned.

The building blocks

Hodge (1994) has identified seven lessons as the vital building blocks of mental toughness and personal excellence. They are as follows:

- Lesson 1: Athletes require mental toughness to succeed and achieve their goal in life. Skill is not enough, they need the will (power) to harness and use their skill.
- Lesson 2: Sport and life are emotional experiences. Sport is all about passion, and when they choose to be involved in competitive sport, they are stating their desire to set and achieve goals, to develop some new skills and competencies, to test their physical and mental limits and to pursue some level of excellence.
- Lesson 3: Champions are not extraordinary people, they are ordinary people who do extraordinary things. Most successful people in sport share a philosophy about mental toughness that goes something like this: “There is no such word as, can’t! If it is not possible this way, then there must be another way. Never give in and never give up.”
- Lesson 4: Mental toughness comes from athletes seeking their own Ideal Performance State (IPS). The IPS is that mood, feeling or state in which athletes feel totally in control, totally focused, mentally and physically, on the sport performance and are confident they will

perform to their best. For athletes to create and reproduce their IPS, they have to develop a realistic and positive belief in their ability. They have to believe that their abilities can meet the challenge of a particular situation. To believe in their abilities they have to like, accept and respect themselves.

- Lesson 5: The IPS and mental toughness both require a strong and stable level of self-esteem. Self-esteem is the foundation building block of motivation, commitment and mental toughness. The most useful self-measurement criteria for self-esteem are a set of task/mastery goals. Task/mastery goals focus on how to win, not winning itself. These goals are under control and a sense of control is vital for self-esteem and subsequently for mental toughness.
- Lesson 6: Self-esteem, the IPS and mental toughness are all based on mastery goals. Athletes' belief in themselves and a belief in their goals are the crux of commitment in sport. Commitment is a combination of their satisfaction with their investments in an activity, the attractiveness of the best alternatives to the activity, their level of enjoyment, the involvement opportunities afforded by continued participation, social constraints to continue participating and the overall level of investment in the activity itself (e.g., time, effort, money). The fully committed person is more determined, works harder, sets more challenging goals and invests more time and energy in achieving peak performance.
- Lesson 7: Mental Toughness Training - if it is to be, it is up to me! Control should be achieved by setting mastery goals. Hard work, determination and commitment to goals are vital. The athletes, and only they, can motivate themselves, do the hard work, maintain their commitment, and like, accept and respect themselves (Hodge, 1994).

Programme to develop mental toughness

Sargent (1998a) suggests a type of programme that a sport psychologist might follow in developing mental toughness. He alleges that the major psychological skills that should be considered when enhancing the mental skills of athletes, are professionalism, focusing on controllables, practise through the use of successive simulations, athletes knowing their ideal performance states and fostering team harmony and cohesion. By professionalism he means that the athletes cover all contingencies and assure complete preparation and planning across a whole season in an integrated approach. They stay positive and focused despite distractions and disappointments. The athletes furthermore approach their sport in a systematic and scientific way by analysing their performance, by welcoming peer analyses and by receiving regular feedback.

When athletes concentrate on the controllables, they are concentrating on the task at hand - their performance. They take responsibility for their performance by focusing on themselves, their technique and their self-talk. Success should furthermore be defined in terms of performance factors

and not on outcomes. Mental toughness should be practised through successive simulations. Just as physical skills are developed through stages, so does mental toughness proceed through similar stages. These skills should be practised with patience in non-competitive situations until they can be utilised in game situations.

Knowing one's IPS provides pertinent information about optimal pre-game routines, states of arousal, refocusing strategies, types of effective self-talk and effective concentration cues. Team harmony and cohesion should be fostered by effective communication channels and through team building by planning team development, social activities, and leadership and initiative opportunities. Thus a strong feeling of team belonging is pertinent to the enjoyment, fun and success a player experiences (Sargent, 1998a).

An approach to advance mental toughness

Sargent (1998a) contends that the so-called ICE approach can be utilised to foster readiness and toughness. This comprises the following:

- I for Intensity: For the duration of practise as well as playing, every athlete gives everything he/she has to give.
- C for Concentration: The athletes ensure that frustrations and hassles are left behind when practising or playing, they come ready to play.
- E for Enthusiasm: Athletes come with a positive attitude, wanting to work hard, willing to support one another and to have an enjoyable time.

Steps towards mental toughness

Loehr (in Zelkovich, 1992) developed twelve steps that can teach mental toughness in racquet sports. These steps are as follows:

- Eye control: Athletes should focus on one object during shots. This reduces the chances of losing concentration and being distracted by spectators, opponent and other distractions.
- Rituals: A careful, almost methodical physical and mental ritual should be followed before play starts. This allows athletes to compose and focus themselves.
- Pacing: Athletes should determine the pace of the game, decide where they feel comfortable and then try to not waver from this.
- Breathing patterns: Athletes should learn to breathe in when the ball is approaching and breathe out at the point of contact. This causes upper-body tension to be released through exhalation.
- High positive intensity: Athletes should stand tall and project an air of confidence.

- **Confident image:** This entails the athletes looking confident even when their inner voices are chastising them. Athletes should not let the opponents know that they have any doubt in their minds about the outcome of the contest.
- **Relaxation:** Athletes should relax between points by listening to their breathing.
- **Managing mistakes:** This entails the athletes turning away, forgetting and steadying themselves, after making bad shots.
- **Eliminate self-talk:** This will ensure that concentration is held, but if the athlete must talk to himself/herself, it should be positive.
- **Enjoyment:** Athletes should always project an image that they love competition and they are going to try their best the whole time. The more they enjoy it the better they play, because they are not placing too much pressure on themselves.
- **Attitude:** If athletes want to be winners, they have to think like winners and thus send out the signals and images of winners.
- **Racquet up:** If athletes keep the head of their racquets up, they are telling their opponents that they are up and ready for anything and are still feeling confident.

METHOD OF DETERMINING MENTAL TOUGHNESS

Loehr (in Williams, 1988) determines a tennis player's mental toughness quotient based on the following five areas which all reflect what happens under pressure:

- **Stroke production:** Can the player still hit the ball reasonably well when he/she is nervous or angry?
- **Strategy:** This entails the athlete's style of play. A player who is not mentally tough, either plays timidly or goes for too much too soon. It takes courage to play aggressively, but still play shots that have the best chance of staying in the court. The athlete wants to hit a good shot that forces his/her opponent to hit a great one.
- **Emotional response:** Four variations are identified, namely: (1) the player starts withdrawing emotion and energy, eventually gives up and finds many excuses for failure; (2) he/she struggles on, but with so much negative emotion that he/she becomes enraged and ineffective; (3) he/she becomes nervous, a good sign, because it shows he/she is trying hard and may play better as a result; and (4) he/she achieves the challenge response, which is putting himself/herself 100 percent on the line. This is called the state of athletic grace and all athletes should strive to achieve this.
- **Physical condition and appearance:** This does not entail the kind of shape that the athlete is in, but the way he/she looks while he/she is playing. The athlete should project a strong

powerful presence during competition, especially during a crisis. In other words, the athlete should look the way he/she wants to feel.

- The mental factor: This entails the extent to which the athlete is a positive thinker, which leads to positive results. Anticipation plays a big role, with the athlete orchestrating the next point in his/her mind.

LOEHR — A LEADER IN THE FIELD OF MENTAL TOUGHNESS

The researcher regards James (Jim) E. Loehr a leader in the field of mental toughness. His field of speciality is tennis and most of his research is thus conducted in this sport. He has written two books, one USA professional tennis manual, and one article on the subject of mental toughness. He has produced an audio tape on the subject and has also been conducting mental toughness clinics since 1981. These clinics evolved from Loehr's conviction that mental toughness can be learned (Williams, 1988). Loehr also developed the *Mental Toughness Test* (1982). He is the only sport psychologist who has spent this much time and effort on the expansion of research on mental toughness. His most important findings and statements are discussed hereafter.

Toughness training for sports

Loehr (1994) claims that his programme, *New Toughness Training for Sports*, is about building mental and emotional toughness. He explains that toughness training is the process of developing an athlete's ability to deal with any kind of stress, be it physical, mental or emotional, so that he/she will become a more competent competitor. He further explains that it is a way of perfecting the athlete's sport skills, while minimising the chance of physical injuries and emotional setbacks that so often accompany overtraining. A key factor of this training is refining the athlete's recovery-from-stress routines during practise and between competition. He maintains that this training will cause the mind, body and emotions to become more adaptable, responsive, resilient and stronger.

Clarifying toughness

Loehr (1994) explains the need for toughness by discussing talent and skill. He claims that talent is an athlete's genetic potential, i.e. the apparent exterior extent of his/her genetic potential. Where talent is a gift, skills are learned. The mechanics and technique of the execution of a certain movement are gained through hard work, repetition and practise. He claims that skills influence achievement in sports much the same way talent does. These, however, are not the most important contributors to reaching a high level of sporting participation. Loehr states that the most critical factor in athletic achievement is toughness.

Loehr (1994) defines toughness as follows: “Toughness is the ability to consistently perform toward the upper range of your talent and skill regardless of competitive circumstances” (p.5). He elaborates on toughness as follows:

- Toughness is learned. Toughness has nothing to do with genetics or inherited instincts. Anyone can acquire it, at any stage in his/her life.
- Toughness is the skill that enables the athlete to bring his/her talent and skill into action on demand. Athletes can learn any mechanical skills that are needed if they possess toughness and it will push their talent to its absolute limit. Toughness is the limiting factor, not a lack of talent or skill.
- Toughness is Ideal Performance State (IPS) control. The IPS is the optimal state of physiological and psychological arousal to ensure peak performance. The following feelings and emotions usually accompany IPS, namely the athlete is self-assured, composed and calm, invigorated with positive emotion, challenged, focused and sharp-witted, automatic and unconscious, and ready for fun and enjoyment.
- Emotions run the performance show. Enabling emotions are those associated with challenge, drive, self-assurance, determination and tenacity, positive action, intensity, vivacity, perseverance and fun. Disempowering emotions are feelings of exhaustion, incompetence, apprehension, low energy, weakness, dismay and confusion. These emotions either bring the athlete closer to his/her IPS or move him/her away.
- Toughness is the ability to consistently access empowering emotions during competition. When emotions can be controlled, performance can be controlled.
- Toughness is mental, physical and ultimately emotional. Thinking tough, acting tough, fitness, proper rest and diet are essential to ensure that the athlete feels tough.
- Toughness is physical. Loehr (1994) states that the body is physical; talent and skill are physical; emotions are neurochemical events, therefore also physical; and finally thinking and visualising are electrochemical events in the brain and are thus physical.

All these factors are fundamental to achievement in sport.

Ideal Performance State (IPS)

Loehr (1994) claims that if an athlete wants to mobilise his/her body's performance potential he/she has to acquire a special kind of psychological and physiological balance, namely the Ideal Performance State (IPS). This special condition of body arousal is characterised by feelings of relaxation, peacefulness, high efficacy, assuredness, alertness, focus, confidence, instinctiveness, determination and gratification. Loehr and Van den Meer (1981) emphasise the importance of an athlete's being aware of all changes that take place physically and mentally. The goal is for the athlete to identify his/her optimal physical and mental state where he/she performs at his/her best. The mental

feelings associated with this are calmness, automatism, energy, alertness, focus and positiveness. The physical feelings associated with this are free-flowingness, relaxedness, quickness, smoothness and looseness. They maintain that these feelings are learned through better self-awareness.

Loehr (1994) claims that athletes can withstand the rigours of constant competition by learning exceptional performer skills. He explains that it has been found that actors and actresses can activate emotion-specific transformations in their bodies by moving their facial muscles in the direction of the intended emotion. He explains that great competitors are great actors because they have learned to move their body chemistry in the desired direction, namely IPS. These competitors have learned to produce feelings of confidence, high energy, relaxation, fun and challenge, no matter how they really feel. In actual fact athletes always have to produce the same emotions and therefore they have the same script for every competition. Loehr (1994) states that “emotions respond much as muscles do. The ones you stimulate the most become the strongest and most accessible” (p.25). The skills needed to access targeted emotions are called performer skills and these involve the following:

- Disciplined thinking and imaging skills: The thoughts and images in the athlete’s head has direct emotional consequences. It is therefore of much importance that these performer skills reflect positive and realistic outcomes.
- Disciplined physical acting skills: When athletes act (body language) the way they want to feel, (i.e. full of confidence, fun and fight) this will move them closer to their IPS.
- Emotional response practise: With practise the underlying biochemical mechanisms can be trained and firmly established.

Classification of toughness

Loehr (1994) states that “toughness is not a destination; it’s a journey without end” (p. 89) and “to get tougher, always focus your training on your weakest links” (p. 39) and “the journey towards toughness must follow the road of improved self-awareness and self-understanding” (p. 115).

Loehr (1994) maintains that the classification of toughness is as follows:

- Emotional flexibility: This is the ability to handle sudden emotional change by staying adaptable, non-defensive and poised. It also includes the ability to call on a wide range of positive emotions, like fun, joy, fighting spirit, humour and others.
- Emotional responsiveness: This entails the ability to remain emotionally vital, engaged and coherent under pressure. The athlete will stay alert and compassionate, attached to his/her surroundings and himself/herself and eager to perform well.
- Emotional strength: This is the ability to exert and endure vital force emotionally under pressure, to maintain an effective fighting spirit against impossible odds.

- Emotional resiliency: This entails the ability to take some strain emotionally and then return to equilibrium quickly, to recover from setbacks, errors and missed opportunities and bounce back ready to resume the battle.

Further classification: The prerequisites

Loehr (1994) maintains that the body becomes aware of unmet needs through chemical messengers that take form as feelings and emotions. These needs may be physical or psychological. He contends that toughness comes from responding to these negative messages in appropriate ways. Loehr (1994) terms the way an athlete really feels, his/her Real Self and the way he/she needs to feel to perform at his/her peak his/her Performer Self.

For an athlete to perform consistently under pressure in the upper ranges of his/her talent and skills, the following are required:

- A physically well prepared Real Self. All basic physical and emotional needs should be met to ensure that toughness and IPS can be controlled.
- A highly developed Performer Self. This signifies the athlete's ability to transform himself/herself from the Real Self to the Performer Self on demand, which calls for precision thinking and acting skills.
- The capacity to endure great physical, mental and emotional stress. A fundamental component of toughness is therefore physical fitness. Toughness requires great physical, mental and emotional versatility, responsiveness, depth and resiliency.

Loehr (1994) warns that it is possible for the Performer Self to become too dominant. This results in the Real Self's needs not being met. The athlete will feel alienated and things will stop making sense. He maintains that true toughness requires balance. A flexible, responsive, strong and resilient Real Self combined with a highly skilled Performer Self, is what real toughness is all about.

Loehr (1994) claims that athletes should be able to move skilfully from the Real Self to the Performer Self. This is only conceivable if athletes have acquired highly refined performer skills that provide the means for them to move their body chemistry in the direction of the targeted emotions. To meet this challenge successfully, two acquired skills are fundamental:

- Tough thinking: This is the athlete's ability to use words and images to control his/her Ideal Performance State. Tough thinking is disciplined thinking and keeps the athlete calm when things get frantic.
- Tough acting: This is the athlete's ability to use his/her body to control his/her Ideal Performance State by acting in a predetermined way. The athlete should try to look

courageous, fresh, confident, challenged and believe with all his/her conviction that the more intense the competition is, the better it will be for him/her.

Loehr (1994) claims that if an athlete wants to become a better competitor, he/she has to consistently perform at the upper range of his/her talent and skill. This requires the athlete confronting his/her weaknesses, which requires courage. He/she has to connect with the Real Self and its needs. Loehr (1994) claims that a fundamental belief of toughness training is that in order to get tougher, the athlete has to focus on his/her weakest links. The prerequisites for improving toughness is (a) gaining a clear understanding of weaknesses and (b) developing a strong commitment and strategy for change.

Measurement of toughness

Loehr (1994) proposes that an athlete measure himself/herself on the following twenty-six performance factors on a continuum from one to ten. Anything below four is a weakness and above seven a strong point.

- | | |
|--|--|
| 1. Even-tempered vs. Moody | 14. Coachable vs. Uncoachable |
| 2. Resilient vs. Non-resilient (Quick vs. slow emotional recovery) | 15. Focused vs. Unfocused |
| 3. Competitive vs. Non-competitive | 16. Mature vs. Immature |
| 4. Self-reliant vs. Dependant | 17. Motivated vs. Unmotivated |
| 5. Committed vs. Uncommitted | 18. Emotionally flexible vs. Emotionally rigid |
| 6. Aggressive vs. Passive | 19. Good vs. Poor at problem solving |
| 7. Confident vs. Insecure | 20. Good vs. Poor at team playing |
| 8. Patient vs. Impatient | 21. Willing vs. Unwilling to take risks |
| 9. Disciplined vs. Undisciplined | 22. Skilled vs. Unskilled at acting |
| 10. Optimistic vs. Pessimistic | 23. Strong vs. Weak in body language |
| 11. Responsible vs. Irresponsible | 24. Relaxed vs. Tense |
| 12. Realistic vs. Unrealistic | 25. Energetic vs. Non-energetic |
| 13. Challenged vs. Frightened | 26. Physically fit vs. Physically unfit |

The most important factor for athletic success is motivation. If the athlete scores below seven on motivation, this is a warning sign. A low score on motivation can be the result of unmet needs, excessive pressure to perform, too much perceived failure and not enough success, too much overall stress or not enough recovery.

Loehr (1994) declares that the ultimate measure of toughness is the extent to which an athlete can consistently perform toward the upper range of his/her talent and skill during competition. He believes that another measure is pain. Pain is evident when the athlete is not physically tough enough. When

he/she has exceeded his/her physical limits, he/she will experience pain, or sustain an injury and therefore be in a state of overtraining. It is clear that an athlete who is physically tough will be able to endure an enormous amount of physical stress.

In terms of mental and emotional toughness, the same holds true. When an athlete is not tough enough mentally or emotionally, it becomes evident as persistent negative thinking and feeling. Examples of mental and emotional pain are the following:

- Mental and emotional fatigue
- Constant negative thinking
- Bad moods
- Depression
- Nervousness and anxiety
- Boredom
- Low motivation
- Low enjoyment
- Low self-esteem and confidence
- Burnout
- Feeling defensive and intimidated

Loehr and Kahn (1989) identify the following as signs of excessive emotional stress, namely reduced motivation, loss of confidence, increased moodiness and depression, increased temper and anger, increased negativism, annoyance and decreased satisfaction. Excessive emotional stress just as extreme physical stress, has been connected to an increased risk of injury and a depressed immune system,.

The *Mental Toughness Test* (Loehr, 1982) determines an athlete's mental toughness by means of responses to questions regarding seven factors thereof. These factors are (1) self-confidence, (2) arousal control, (3) attention control, (4) visualisation and imagery control, (5) motivation level, (6) positive energy and (7) attitude control. Loehr maintains an elite athlete should have a minimum score of 19 for each factor. A lower score indicates a deficiency or weakness that should receive some attention during mental training. He conducted interviews with top level athletes and coaches before developing this test. The athletes and coaches rated mental toughness' influence on performance between 50-90%, but admitted to only allocating 10% of their practise time to mental training.

Toughness as an emotional response

Loehr (1994) claims that toughness is a learned capacity to display a unique emotional response during competition. This emotional response might best be expressed in the word *challenge*. When the athlete is challenged he/she is positively engaged, mobilised and moving forward. The challenge feeling often accompanies feelings of fun, positive fight, confidence and focus. To consistently respond with challenge when things get rough during competition calls for great emotional skill. Rather than showing fear and helplessness during competition, the tough athlete generates particular

feelings of aggressiveness, enthusiasm and boldness, combined with a profound sense of calmness and confidence. Loehr (1994) claims that the distinguishing variable between winners, leaders or champions and weaker competitors, is the fact that winners respond to crisis, adversity and strain with a sense of challenge and love of the battle.

Practising overload emotional training will lead to an increase in mental toughness. The athlete will be able to regulate stress, have an increased resistance to stress, be able to maintain high positive energy levels in spite of obstacles or crisis conditions, show decreased moodiness during competition, show a reduced occurrence of temper, anger, or excuse making responses during play and drive and enjoyment levels will stay high despite unfavourable conditions.

Loehr (1984) maintains that to increase the probability of performing well, the following combination of feelings be triggered and maintained in the athlete: High energy (challenge, inspiration, determination, intensity), fun and enjoyment, no pressure (low anxiety), optimism and positiveness, mental calmness, being focused and being in control.

Mental toughness and physical fitness

Mental toughness and physical fitness go hand in hand. Loehr (1994) states that there is more to being an efficient competitor than simply being mentally tough. That is only half the battle. Being physically fit, possessing tough-acting skills, and going into the competition well recovered, typify the other half of the winning game. It is essential for athletes to understand how everything is interrelated. Sleep, diet, fitness, free time, tough acting and emotional toughness are all complementary. Loehr (1994) maintains that the ideal performance state can be attained by getting tougher physically and by getting tougher mentally. Getting tougher mentally means that the athlete exercises from the inside out. This calls for understanding when, how, and what to think and visualise before, during and after competition to gain the required effect emotionally. Being tough mentally means that the athlete has acquired skills in thinking, believing and visualisation that enables him/her to:

- effortlessly access empowering emotions during competition.
- promptly alter his/her emotional state from a negative to a positive one.
- cope emotionally with inaccuracy and failure.
- trigger an ideal performance state when needed.
- cope with crisis and misfortune.

Loehr (1994) claims that mental toughness is the ability the athlete has to continue to think productively, non-defensively, positively, and realistically and do it with composed clarity under pressure of competition.

Strategies to increase mental toughness

Loehr (1982) maintains that mental toughness is an acquired skill and not inherited. He claims that the most difficult mental skill to apply during competition is the maintenance of an ideal mental state which includes experiences of the following 12 inner states, namely: (1) physical relaxation, (2) mental calmness, (3) low anxiety level, (4) willingness, (5) optimistic thoughts, (6) pleasure, (7) easiness, (8) automatic state, (9) agility, (10) concentration, (11) self-confidence and (12) self-control ability. He proposes that the athlete employ a self-awareness training programme as a means to identify and develop his/her ideal mental state.

Loehr (1994) suggests the following strategies for athletes to become more mentally tough:

- Athletes should change their thinking in order to change the way they feel. It is of utter importance that athletes realise that they have considerable influence over the direction and content of their thoughts. Athletes can change negative thoughts into empowering thoughts through tough thinking.
- If athletes do not like the way they feel, they should change the picture in their minds. Images are more convincing triggers of emotion than words. Athletes can access the targeted emotions through images of success, of fighting back, of having fun, of staying relaxed and of being strong in the face of misfortune. Athletes should strive to make their self-image powerful, realistic and fearless through daily practise of such images.
- Athletes should take full responsibility for what and how they think. Athletes must make every effort to restrain negative feelings during competition, unless they can do something positive then and there to satisfy the expressed need.
- Athletes should continually practise positive thinking. Through repetition they should practise the correct mental habits to ensure that they continue to stay positive and practical during difficult and frustrating times during competition.
- Athletes should never think or say *can't* or *hate*. This type of rigid thinking patterns quickly build emotional roadblocks that lead to competitive problems.
- Athletes should think/visualise the following thoughts in clear emotional terms: They will put themselves on the line every day. They will not give up. They will not turn against themselves when things get tough. Every day they will turn up completely willing and able to compete. They will not reveal weakness to their opponents. The more absurd it gets, the more they will love it. They will love competing more than being victorious.
- The athletes should think humorously to break up negative emotions. When the athletes' thoughts are funny, silly or off-the-wall, this causes fear and anger to disappear and puts them back in control.

- Athletes should think more energetically. When athletes think “fun”, more positive energy will start flowing.
- Athletes should learn to keep a here-and-now focus during competition. The future is unknown, and thus scary, and the past can cause regret, anger and frustration. If athletes maintain a moment-by-moment focus, the natural expression of their talent and skill becomes much easier.
- Athletes should focus their attention outside themselves during critical moments of execution. They should strive to become entirely absorbed in the activity itself in order to control attention during difficult times.
- Athletes should practise strategic visualisation constantly. They should see, hear and feel themselves defeating their weaknesses and achieving significant goals. They should ensure that they experience triumph and mastery mentally, before they test themselves physically.
- Athletes should be more disciplined in the way they think about their mistakes. They should realise that inaccuracy is a part of learning. They should ask themselves what they could have done differently and what they can learn from the mistake. After these questions have been answered, athletes should intentionally decide to let it go.
- Athletes should be clear about why it is essential to fight before the contest begins and then make a commitment to fight. Without this, athletes will not be motivated to put themselves totally on the line and risk losing everything they have in order to reach higher standards.
- Athletes should use adversity to get stronger. They should view a crisis as an opportunity to grow and thus extend beyond their normal limits. They should realise that the right attitude regarding stress is a major component of emotional toughness.
- Athletes should constantly remind themselves to love the battle. They should love the process, the contest, the deploying of resources, the pushing, the falling back, the breakthroughs and the struggles.
- Athletes should use positive brainwashing to stop their negative mental habits. They should identify those mental habits (“I hate this” or “I can’t do that”) which affect their performance negatively and then brainwash themselves to change the negative statements into positive ones.
- Athletes should use the “just for today” approach to change their habits. Athletes should make the statement that, just for today, they will become challenged, not complain, be self-disciplined, take charge of their emotions, make time to relax, be organised, stop making excuses, find humour in mistakes, do the best they can and be satisfied with their efforts and believe that they are in control (Loehr, 1994).

Parents' influence on mental toughness

Loehr and Kahn (1989) maintain that in recent research it has been found that parental support and encouragement, coupled with parents' refusal to stress winning and to punish losing, are the critical factors when identifying what makes a sport champion. They state that champions claimed that they learned not to be afraid of losing from their parents. Although sophisticated skills were learned from their coaches, the underlying mental toughness known as the Ideal Performance State, was established early on and nurtured by parents. Parents have to maintain an emotional equilibrium in order to help their children succeed competitively. This requires toughness and parents' ability to clearly see the role that they have to play in their children's sport. Loehr and Kahn (1989) state that the crucial first step for the parents is to understand themselves and how they react under pressure.

The advantage of mental toughness

Loehr and Kahn (1989) state that parents' mental toughness can be a tool in maintaining a supportive emotional environment. This is an environment that allows the child to cope with pressure situations during play, makes for beneficial practise time and allows both parent and child to maintain a proper perspective.

Loehr and Kahn (1989) maintain that mental toughness minimises the possibility that a match will be lost through tanking, temper, or choking by athletes, as well as making burnout unlikely. Tanking is a term used to convey giving up, to reducing effort and energy and emotionally withdrawing. It is the end result of a low negative energy state. Temper occurs when negative emotions start taking charge. The player feels angry, frustrated, upset, or disappointed. It comes out of the high negative energy state. Choking, the third typical response to pressure, is the inability to follow-through on winning play, to finish off a victory and is characterised by nervousness and anxiety.

CONCLUSION

From the literature it can be seen that there are different factors deemed important by the different authors when discussing mental toughness. There are, however, underlying uniformities that emerge and these will lead to several themes being highlighted. The themes that are identified will be discussed and explained in chapter 4.

It is, however, important to realise that mental toughness is a skill and that it can be learned, developed and enhanced through effective teaching, hard work, and practise (Hodge, 1994). Mental toughness is an extremely important attribute to possess, if top level performance is desired (Bull, et al., 1996).

Mental toughness is regarded as the ability to deal with stress and adversity in such a way that performance does not suffer (or even peaks) under conditions that place high physical and psychological demands on the competitor (Smith & Smoll, 1989). It is the ability to welcome, not avoid or minimise, competitive pressure (Loehr, in Williams, 1988). Mental toughness implies that, under pressure of competition, athletes can continue to think productively, non-defensively, positively, and realistically and do so with composed clarity (Loehr, 1994). Mental toughness minimises the possibility that a match will be lost through tanking, temper tantrums, or choking, as well as making burnout unlikely (Loehr & Kahn, 1989). Mental toughness needs an element of relaxedness and requires calmness together with an increased determination. Mental toughness has at its core, commitment and courage (Jennings, 1993).

A mentally tough athlete is someone who makes things happen, someone who is pro-active, assertive, motivated and committed to mastering his/her goals. The mentally tough athlete has superior nerve and the will (power) to harness and use his/her skill (Hodge, 1994). The mentally tough athlete is almost insensitive to criticism and the feelings and problems of other people. He/she can ignore failure and he/she does not require a lot of encouragement to be effective. This athlete does not depend on the team for a sense of belonging (Tutko & Richards, 1971). The mentally tough athlete does more training and works under more difficult conditions than his/her opponents do and this prompts him/her to have greater mental toughness. The mentally tough athlete feels confident that he/she is better prepared than his/her competitors, which ultimately reduces his/her self-doubt (Hemery, 1991).

The mentally tough athlete possesses a number of related attributes, which are elements of the overall mental toughness quality. The attributes are a strong desire to succeed, the ability to stay positive in the face of challenge and pressure, the ability to control the controllables, a strong commitment with a balanced attitude, a high level of self-belief and a positive body language (Bull, et al., 1996). An athlete can achieve mental toughness by consistently displaying a defined set of mental skills. These are self-motivation, positive but realistic expectations, control of emotions, being calm and relaxed under pressure, being highly energetic and ready for action, determination, showing mental alertness, self-confidence and being fully responsible for performance (Graham, 1990).

Mental toughness comes from the athlete seeking his/her own Ideal Performance State (IPS). The IPS and mental toughness both require a strong and stable level of self-esteem. Self-esteem, the IPS and mental toughness are all based on mastery goals. An Ideal Performance State can be attained by getting tougher physically and mentally (Hodge, 1994). Getting tougher mentally means that the athlete exercises from the inside out. This calls for understanding when, how and what to think and visualise before, during and after competition to gain the required emotional effect (Loehr, 1994).

Being tough mentally means that the athlete has acquired skills in thinking, believing and visualisation that enables him/her to effortlessly access empowering emotions during competition. The athlete is also able to promptly alter his/her emotional state from a negative to a positive one, cope emotionally with inaccuracy and failure, trigger an Ideal Performance State when needed and cope with crisis and misfortune (Loehr, 1994).

Numerous strategies can be followed to improve mental toughness and it thus follows that mental toughness can be taught by the coach, parent or sport psychologist and subsequently learned by the athletes and then applied during their performances (Loehr, 1994).

CHAPTER THREE

EMPIRICAL PHASE

In this chapter the empirical phase will be described. The description includes the research process and the method of capturing the data. Some descriptive data regarding the sample of coaches and athletes who were used will be included. The qualitative research method of content analysis will also be explained and discussed.

THE SAMPLE

The first step in acquiring the sample of top coaches who participated in this study, entailed the supervisor contacting the National Department of Sport and Recreation from which the contact details of the sport federations in South Africa were obtained. This document was faxed to the supervisor and consisted of 97 organisations. Only federations that could meet the following criteria were contacted and asked to provide the details of their top coaches: (1) Having adequate contactable details, (2) Having a national team, (3) Having professionally trained coaches, (4) Participating in a competitive sport, (5) Not participating only at a recreational level. This led to 35 federations being excluded from the study.

Sixty-two federations were contacted via e-mail, post or fax. Thirty-six of these federations were affiliated with National Olympic Committee of South Africa (NOCSA), of which 26 were Olympic sports, one a winter Olympic sport, six recognised sports and three associate members of NOCSA. Twenty-six non-recognised recreation federations were also contacted.

The details of 38 coaching contacts from four different sporting codes, from different provincial unions or from different disciplines in a certain sporting code, were acquired via the Internet (South African Rugby Football Union, United Cricket Board, etc. websites) and via fax facilities (shooting sport codes). This step was deemed necessary either because the federation did not respond or because contact details of affiliates were also sent and in turn they had to be contacted. All of the above coaching contacts were contacted via fax. Fourteen sport disciplines were contacted at the University of Stellenbosch via personal contact or by telephone.

In total 114 sport federations were contacted of which 43 were via e-mail, 32 by post, 25 via fax and 14 through personal contact. After it had been detected that the federations contacted by post were not responding because of a postal strike the country was experiencing, they were also contacted via fax. After four weeks a letter of reminder was sent to 34 federations that had not yet responded.

In total 65 federations replied to the request and supplied a list of their top coaches. Twelve federations replied and informed the researcher that they did not have any top coaches or coaches who were professionally trained. No response was received from 46 sports associations, of which 24 requests had been sent by post. It can thus be concluded that the postal strike had a definite influence on the response rate. Unfortunately 3 federations' faxes could not be sent successfully and 2 federations' replies were received after the cut-off date. In total 79 federations replied in some form or another, giving a 69% success rate.

QUESTIONNAIRES DISTRIBUTED TO COACHES

The responses from the federations led to 284 coaches being contacted and sent a copy of the questionnaire. Of these questionnaires, 211 were sent by fax, 35 by post, 17 via e-mail, 12 were personally delivered and 9 were delivered by the supervisor in Namibia while presenting seminars prior to the 7th All Africa Games. After two weeks 158 coaches (56%) were reminded to return their questionnaire. (An example of the English version followed by the Afrikaans version of the questionnaire is shown in Appendix A).

In total 140 questionnaires were returned, which gives a response rate of 49%. It was deemed necessary to exclude some coaches' questionnaires when they did not meet the following criteria: They had to (1) coach either provincial, national or international athletes, (2) complete the biographical information, (3) return both pages of the questionnaire, (4) fall into the category of coach, not lecturer. These criteria caused 9 coaches' questionnaires to be eliminated. In total 131 coaches' questionnaires were used in the study.

It is interesting to note that 84 (39.81%) questionnaires were returned by fax, 24 (68.57%) by post, 5 (29.41%) via e-mail, 11 (91.67%) collected personally and 7 (77.78%) returned by the supervisor. In this study personal contact was therefore by far the most effective means of ensuring a high response rate when distributing questionnaires across the country. Another factor that could have had an influence on the response rate, was the fact that most of the coaches who were contacted, informed the researcher that they were very busy preparing for the 7th All Africa Games.

QUESTIONNAIRES ADMINISTERED TO ATHLETES

While the researcher was awaiting responses from the coaches, 239 questionnaires were distributed to athletes. Of these, 189 were administered to the second and third year Human Movement Science university students, 8 sent via e-mail, 19 personally delivered and 23 distributed by the supervisor in Namibia. (An example of the English version followed by the Afrikaans version of the questionnaire is shown in Appendix A).

In total 231 questionnaires were returned, giving a 97% response rate. Unfortunately 71 questionnaires had to be excluded because they did not meet the following criteria: Athletes had to (1) participate at a provincial, national, international or 1st team university level, (2) complete the biographical information and the entire questionnaire. Hundred and sixty top athletes' questionnaires were included in the study.

It is interesting to note that a 189 (100%) questionnaires were returned by the university subjects, only 2 (25%) returned via e-mail, 19 (100%) collected personally and 23 (100%) returned by the supervisor. It is clear that in this study personal contact ensured a very high response rate.

BIOGRAPHICAL INFORMATION OF SUBJECTS

Coaches

The researcher used 131 top South-African coaches from 30 different sport disciplines. Their average age was 42.7 years, ranging from 22 to 85 years old. The average number of years that these coaches had been coaching was 14.3 years, ranging from 1 to 42 years. The coaches had an Afrikaans/English ratio of 53 (40.458%) to 78 (59.542%). Their male/female ratio was 93 (70.99%) to 38 (29.01%). The coaches' personal opinion determined their level of coaching, which showed a distribution of 49 (37.4%) provincial coaches, 42 (32.1%), national coaches and 40 (30.53%) international coaches.

The sample of coaches came from the following sport disciplines:

- Track and Field: 27 (20.61%)
- Rugby: 17 (12.98%)
- Bowls: 15 (11.45%)
- Tennis: 10 (7.63%)
- Sports for persons with disabilities: 7(5.34%)
- Figure Skating: 6 (4.58%)

- Artistic Gymnastics: 5 (3.82%)
- Badminton, Golf, and Taekwondo: 4 each (3.1% respectively)
- Karate, Rhythmic Gymnastics, Shooting, and Soccer: 3 each (2.29% respectively)
- Basketball, Hockey, Netball, and Swimming: 2 each (1.53% respectively)
- Acrobatics, Aerobic Dance Sport, Cricket, Fencing, Judo, Korfbal, Springboard Diving, Trampoline, Tumbling, Waterpolo, Water-ski, and Wrestling: 1 each (0.77% respectively)

Athletes

The researcher used 160 top athletes from 32 different disciplines of sport. Their average age was 21 years, ranging from 14 to 35 years old. The sample of athletes showed an Afrikaans/English ratio of 70 (43.75%) to 90 (56.25%). Their male/female ratio was 87 (54.38%) to 73 (45.63%). The athletes' personal opinion determined their level of participation, which showed a distribution of 74 (46.25%) provincial athletes, 50 (31.25%) national athletes, 24 (15%) international athletes and 12 (7.5%) university athletes.

The sample of athletes came from the following sport disciplines:

- Rugby: 32 (20%)
- Netball: 16 (10%)
- Track and Field: 16 (9.38%)
- Hockey: 14 (8.75%)
- Cricket: 12 (7.5%)
- Karate: 9 (5.63%)
- Cycling: 7 (4.38%)
- Golf: 6 (3.75%)
- Swimming and Tennis: 5 each (3.13% respectively)
- Triathlon: 4 (2.5%)
- Artistic Gymnastics, Lifesaving, Rhythmic Gymnastics, Waterpolo, and Wrestling: 3 each (1.88%)
- Dancing, Drum Majorettes, Duathlon, and Orienteering: 2 each (1.25%)
- Baseball, Basketball, Canoeing, Judo, Shooting, Soccer, Softball, Springboard Diving, Surfing, Synchronised Swimming, and Volleyball: 1 each (0.63%)

CONTENT ANALYSIS

Berg (1998) perceives content analysis as a technique that offers the researcher the means to listen to the words of the text and to better understand the perspective of the author of the words. The researcher wants to understand some concept from the subject's viewpoint. Holsti (in Berg, 1998) broadly defines content analysis as any technique that is used to draw conclusions from collected data, by methodically and objectively identifying special characteristics.

Objective content analysis of data can only be accomplished when specific rules, called the criteria of selection, are applied during the analysis process. The selection criteria should account for each variation in the content of the data and must be rigidly and consistently applied during the analysis process. This painstaking procedure is necessary to ensure that other researchers, looking at the same raw data, would obtain similar or comparable results. It is a reliability of the measures and a validation of the eventual findings (Selltitz, in Berg, 1998). Through the course of the development of the selection criteria, the categories that emerge should reflect all relevant aspects of the data and retain, as far as possible, the exact wording used in the data. This ensures that all material is included and not only the data that supports the researcher's assumptions or preconceived ideas (Dey, 1993).

Content analysis organises raw data into interpretable and meaningful themes and categories. The employment of either deductive or inductive content analysis procedures, develops the themes. The deductive approach involves using a predetermined set of themes and categories to organise the quotes, while the inductive process allows the themes and categories to emerge from the quotes (Patton, 1980). Abrahamson (in Berg, 1998) indicates that an inductive approach begins with the researcher assimilating the information in order to identify the dimensions or themes that seem meaningful. In a deductive approach, researchers use a categorical scheme suggested by a theoretical perspective and the statements provide a means for assessing the hypothesis. Berg (1998) maintains that the use of inductive categories permit the researcher to link or ground these categories to the data from which they are derived. The development of categories must be decided upon from inductive references that are concerned with the patterns that emerge from the data.

The inductive building process of identifying emergent themes from quotes or statements, is similar to a conceptual factor analysis. It begins with the clustering of the statements around underlying uniformities (Glaser & Strauss, 1967). The underlying uniformities are the emergent themes. Clustering involves comparing and contrasting each statement with all the other statements and emergent themes, in order to unite statements with similar meaning and separate statements with different meanings (Glaser & Strauss, 1967; Patton, 1980). This means that similar statements with the same underlying theme are combined to form higher order themes. These are organised into

increasingly more complex themes and categories representing the characteristics of the data being analysed. In this case the characteristics will present the authors in the literature's point of view regarding mental toughness.

To be able to demarcate a theme as meaningful, the following three criteria have to be met: First, each individual theme, regardless of level of analysis, has to be inclusive (Patton, 1980). An inclusive theme adequately captures the clustering of lower order themes that comprise it. Second, all themes within a given level of analysis should be mutually exclusive, or distinct from each other (Krippendorff, 1980; Patton, 1980). Third, a higher level of analysis should have captured most of the lower order themes, leaving as few as possible unclustered themes (Krippendorff, 1980; Patton, 1980).

Method of inductively analysing the literature

The literature regarding mental toughness was probed to obtain an understanding of the term mental toughness. After attaining this familiarity, the basic unit of analysis was identified (Miles & Huberman, 1994). The statements made by the authors regarding the characteristics of a mentally tough athlete, were the basic unit of analysis. Each statement was self-determined and outlined in the declaration of a single, distinguishable aspect of the author's knowledge (Cloonan, 1971). The statements of the various authors were extracted and sorted into alphabetical order using the program Microsoft Excel. This was done to facilitate the identification of similar themes and the frequency with which certain themes were mentioned. A total of 426 statements, which varied in length from a word to a sentence, comprised the raw data for the content analysis.

The statements were printed and then separated to distinguish between different themes. Clustering the statements into underlying uniformities identified the different emerging themes. These were grouped and then further analysed to identify sub-themes. This process was repeated until the researcher felt that every statement in each group should be included in the theme, was distinct from others and that the higher order themes captured most of the lower-order themes. The higher order themes had become more interpretive and analytic of the lower order themes.

The whole process of inductive content analysis, starting with the identification of the statements and continuing upward with each theme level created, was consensually validated. Consensus validation is the mutual agreement between analysts on the final form of each theme title. The supervisor provided validation by checking the themes and making suggestions.

The highest order themes that were identified from the literature in the analysis process, will be discussed in Chapter 4.

Method of inductively analysing the coaches' and athletes' statements

Before the process of content analysis could begin, the questionnaires that had been answered in Afrikaans had to be translated into English. This was deemed necessary to simplify the analysis process. When the translation of the statements had been completed, the same procedure as described above, was followed with the raw data that had been collected by the open-ended question regarding mental toughness. A total of 1093 statements were received from the coaches and 1173 from the athletes. These totalled 2266 statements, which varied in length from a word to a sentence and comprised the raw data for the content analysis.

A coding procedure was used to categorise the statements into themes to facilitate the handling of so many responses. This coding system was used to simplify the arduous work of separating and manually sorting the statements. The statements were codified and then sorted into the different categories using the Microsoft Excel program. This resulted in 534 different statement categories from the coaches and 488 from the athletes. Both the coaches and athletes mentioned only 63 of these statement categories. This highlights the variety of statements received. Berg (1998) explains that arriving at the first coding categories is often a multileveled process that requires several successive sortings of all statements under examination. He describes the process with the researchers beginning with a general sorting of cases (statements) into some specified special class and then identifying the themes that emerge through repeated application of the analysis process.

The identified categories were printed and further analysed to identify sub-themes within a higher order theme. Each statement's frequency was determined by allocating the value of one to each characteristic that the subjects (coach or athlete) mentioned. Each statement subsequently had a number of 1s in the row next to it and these numbers were then summed to calculate the frequency. Table 1 explains the process.

Table 3.1: Example of method of frequency calculation

Characteristic	Athlete a	Athlete b	Athlete c	Athlete d	<i>f</i>
Concentration	1		1	1	3
Goal-orientated		1	1		2

Counting of the statements provide a means of identifying, organising, indexing and retrieving data (Berg, 1998). By reporting the frequency with which a given concept appears in text, the magnitude of the observation is suggested. Berg (1998) states that it is appropriate to use a frequency calculation to indicate the magnitude of certain responses; however, it is not appropriate to attach cause to these calculations.

Miles and Huberman (1994) explain that counting is used when the researcher identifies themes or patterns in the collected data. Themes are isolated when it (the theme) occurs a number of times and/or when it happens consistently in a specific way. These judgements of the frequency and consistency of a theme are based on counting. Miles and Huberman (1994) contend that there are three reasons to use numbers. These are: (1) to quickly see what kind of information is included in the data, (2) to verify a hunch or hypothesis and (3) to keep the researcher analytically honest, in other words to protect against bias.

The statements that had the highest frequencies were tentatively chosen as higher order theme titles, while other statements that matched the general theme, were arranged and sorted under these titles. New themes were created from the statements that did not fit. The few remaining unclustered themes were either disregarded if they could not be distinguished, or retained if their frequencies were sufficiently high enough to warrant a separate category.

Consensual validation was repeated after the whole process of inductive content analysis had been completed. The supervisor again provided validation by checking the themes and making suggestions.

The highest order themes that were identified in the process of content analysis of the coaches' and athletes' quotes will be discussed in Chapter 5.

SUMMARY

The empirical phase described the practical steps that were taken to ensure that the study succeeded. Many adjustments were made to accommodate unforeseen problems. The first problem experienced was the postal strike that necessitated some of the federations being contacted via fax. A second problem encountered was the fact that so many statements had to be translated into English. A third problem was the magnitude of statements provided by the athletes and coaches. This necessitated the usage of a coding system to simplify the category formation process. Fortunately all the problems were overcome and in the end the empirical phase was a stimulating process.

CHAPTER FOUR

THEMES IDENTIFIED FROM THE LITERATURE

In this chapter the results of the process of content analysis will be discussed. This will entail a definition and discussion of the highest order themes that were identified. The sub-themes, from which the higher order themes emerged, will be highlighted. An additional important, but unclustered, theme will also be defined and discussed. The method of content analysis has already been described in chapter 3 and will thus be excluded in this chapter.

RESULTS

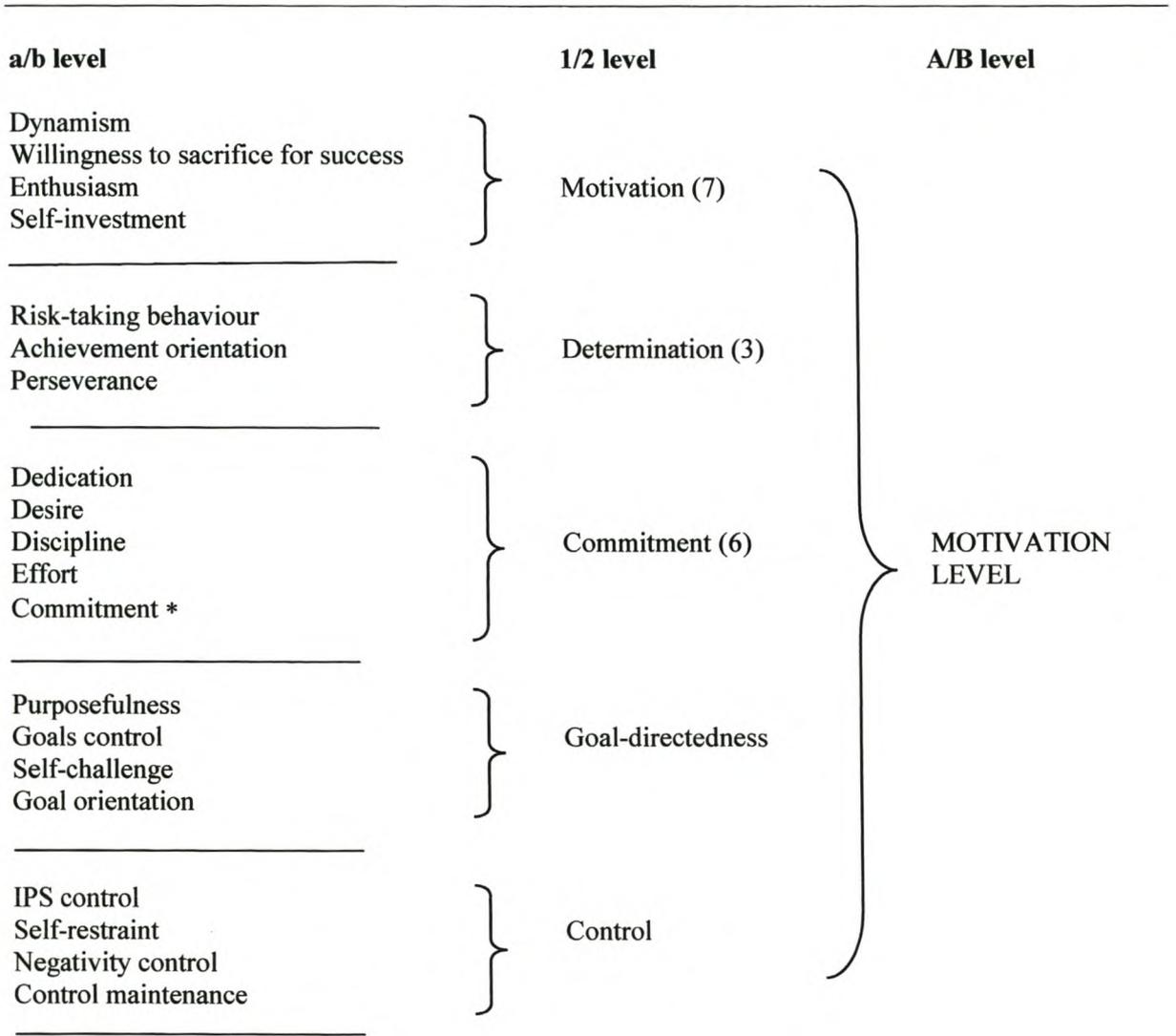
In order to simplify the presentation of the results, the characteristics of mental toughness, as identified by the various authors in the literature, will be presented in descending order from the highest order themes through the respective lower order themes. The reader is reminded that although the data is presented from right to left, the actual inductive analysis progressed from left to right. The illustration of the inductive content analysis, showing the emergent themes beyond the statement level, can be seen in Figure 4.1 - 4.8. In these figures, the a/b level themes (left column) clustered into the higher 1/2 level themes (middle column). Further clustering created the highest order A/B level themes (right column). The associated statements, from which the a/b level themes were derived, can be viewed in Appendix C-J. These statements were extracted from the literature review.

It is important to note that the a/b level theme followed by an asterisk (e.g. Commitment *) in the figures, represent the theme that was carried directly into the higher inductive level. Themes followed by numbers in parenthesis, represent the number of times the specific theme could be identified from the content analysis of the literature.

The eight highest order mental toughness themes emerging from the inductive content analysis include in order of appearance: motivation level, arousal control, confidence maintenance, cognitive skill, competitive behaviour, planning ability, emotional readiness and the unclustered theme: team cohesion.

A. MOTIVATION LEVEL

The first of the highest order themes emerging from the inductive content analysis is **motivation level**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 4.1. The associated statements, from which the level a/b themes were derived, can be viewed in Appendix C.



Note. *: The a/b level theme carried through to the 1/2 level themes.

Figure 4.1: Motivation level theme

Motivation level is defined as the athlete’s ability to maintain and produce a high intensity of motivation, determination, commitment, goal-directedness and control. This theme emerged from the

five 1/2 level themes presented in order of appearance are: motivation, determination, commitment, goal-directedness and control.

Motivation is defined as the dynamism, willingness to sacrifice, enthusiasm and self-investment level of the athlete. *Determination* is the athlete's willingness to take risks, his/her desire to achieve and his/her perseverance. *Commitment* is defined as the athlete's dedication and desire for his/her sport, as well as his/her discipline, effort and commitment. *Goal-directedness* is the athlete's purposefulness, his/her goal control, ability to display self-challenging behaviour and goal orientation. *Control* is the athlete's ability to display ideal performance state (IPS) control, self-restraint and control over negativity and to maintain control.

B. AROUSAL CONTROL

The second of the highest order themes emerging from the inductive content analysis is **arousal control**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 4.2. The associated statements from which the level a/b themes were derived, can be viewed in Appendix D.

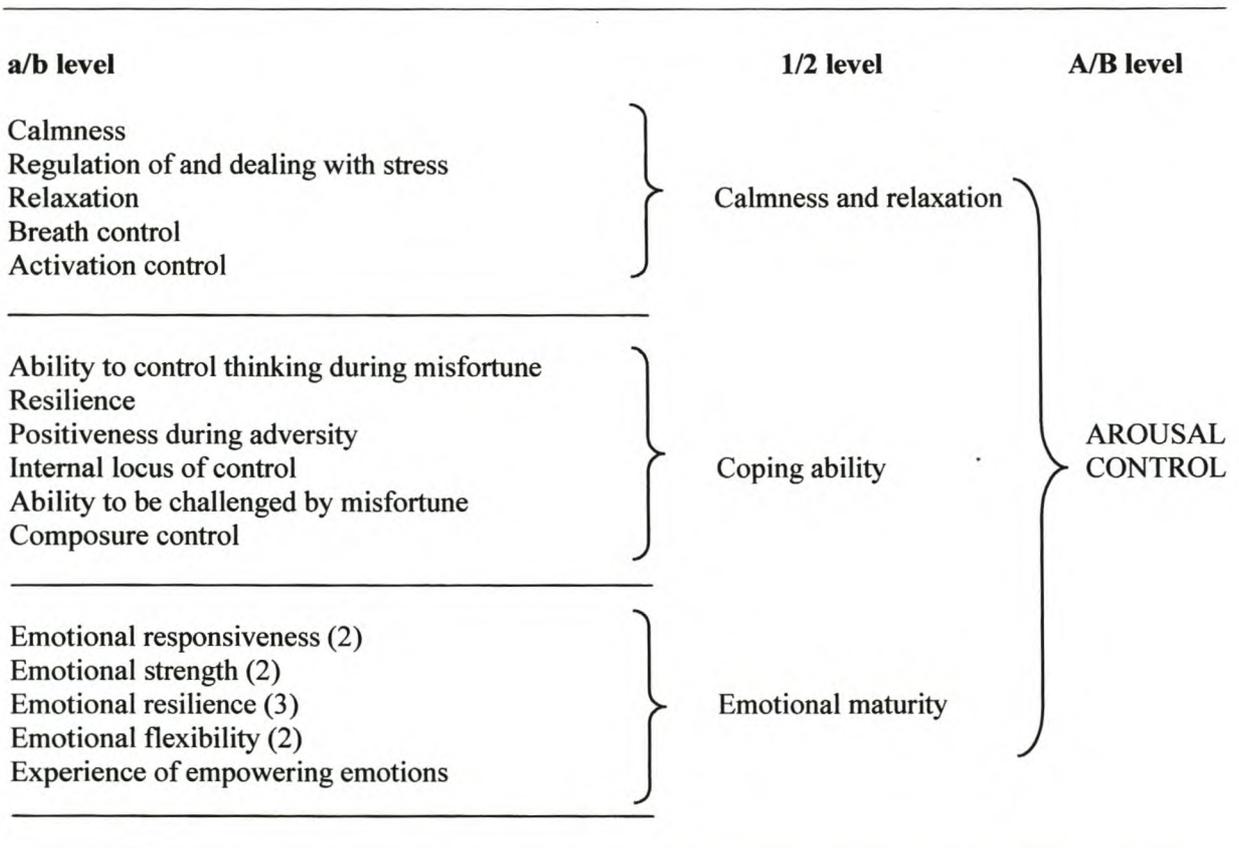


Figure 4.2: Arousal control theme

Arousal control is defined as the athlete’s ability to experience calmness and relaxation responses, to display coping skills as well as emotional maturity. This theme emerged from the three 1/2 level themes presented, in order of appearance are: calmness and relaxation, coping ability and emotional maturity.

Calmness and relaxation is defined as the athlete’s ability to manifest calmness, to regulate and deal with stress, to relax, to maintain breath control and display activation control. *Coping ability* is defined as the athlete’s ability to control his/her thinking during misfortune, show resiliency, stay positive during adversity, maintain an internal locus of control, be challenged by misfortune, and display composure control. *Emotional maturity* is defined as the athlete’s ability to display emotional responsiveness, strength, resilience, flexibility and to experience empowering emotions.

C. CONFIDENCE MAINTENANCE

The third of the highest order themes emerging from the inductive content analysis is **confidence maintenance**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 4.3. The associated statements from which the level a/b themes were derived, can be viewed in Appendix E.

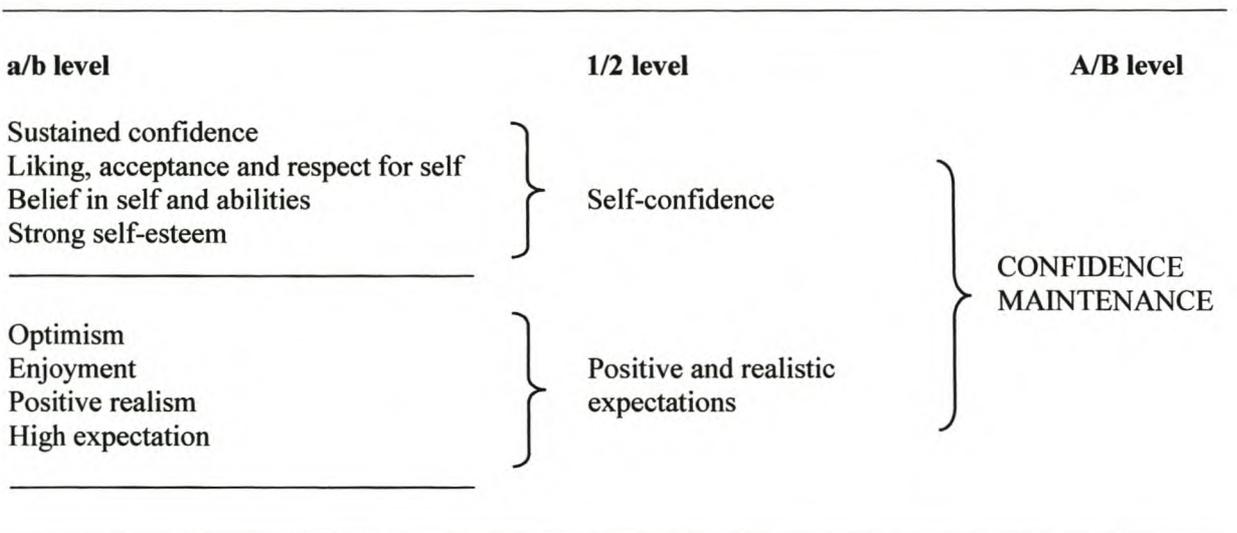


Figure 4.3: Confidence maintenance theme

Confidence maintenance is defined as the athlete’s ability to reveal self-confidence and harbour positive and realistic expectations. This theme emerged from the two 1/2 level themes presented, in order of appearance are self-confidence and positive and realistic expectations.

Self-confidence is defined as the ability of the athlete to sustain his/her confidence, to like, accept and respect himself/herself, maintain belief in himself/herself and his/her abilities and to display a strong self-esteem. *Positive and realistic expectation* is defined as the athlete's ability to reveal optimism, enjoyment, positive realism and high expectation.

D. COGNITIVE SKILL

The fourth of the highest order themes emerging from the inductive content analysis is **cognitive skill**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 4.4. The associated statements from which the level a/b themes were derived, can be viewed in Appendix F.

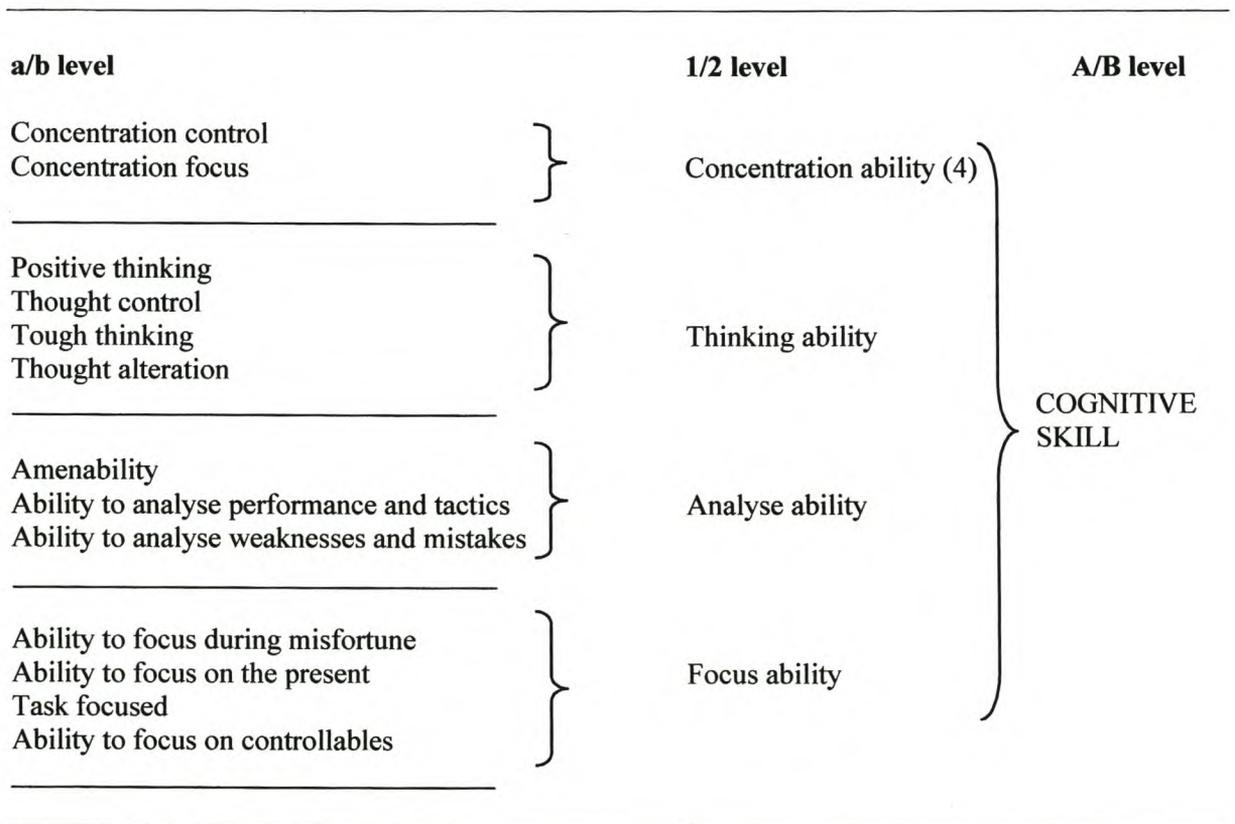


Figure 4.4: Cognitive skill theme

Cognitive skill is defined as the ability the athlete displays in applying and adapting his/her concentration, thinking, analysing and focusing abilities. This theme emerged from the four 1/2 level themes presented, in order of appearance are: concentration ability, thinking ability, analyse ability and focus ability.

Concentration ability is defined as the athlete's ability to control and focus his/her concentration. *Thinking ability* is defined as the athlete's ability to think positively, control his/her thoughts, display tough thinking and alter his/her thoughts. *Analyse ability* is defined as the athlete's ability to accept feedback, analyse performance and tactics and analyse his/her weaknesses and mistakes. *Focus ability* is defined as the athlete's ability to focus during misfortune, on the present, on the task and on the controllables.

E. COMPETITIVE BEHAVIOUR

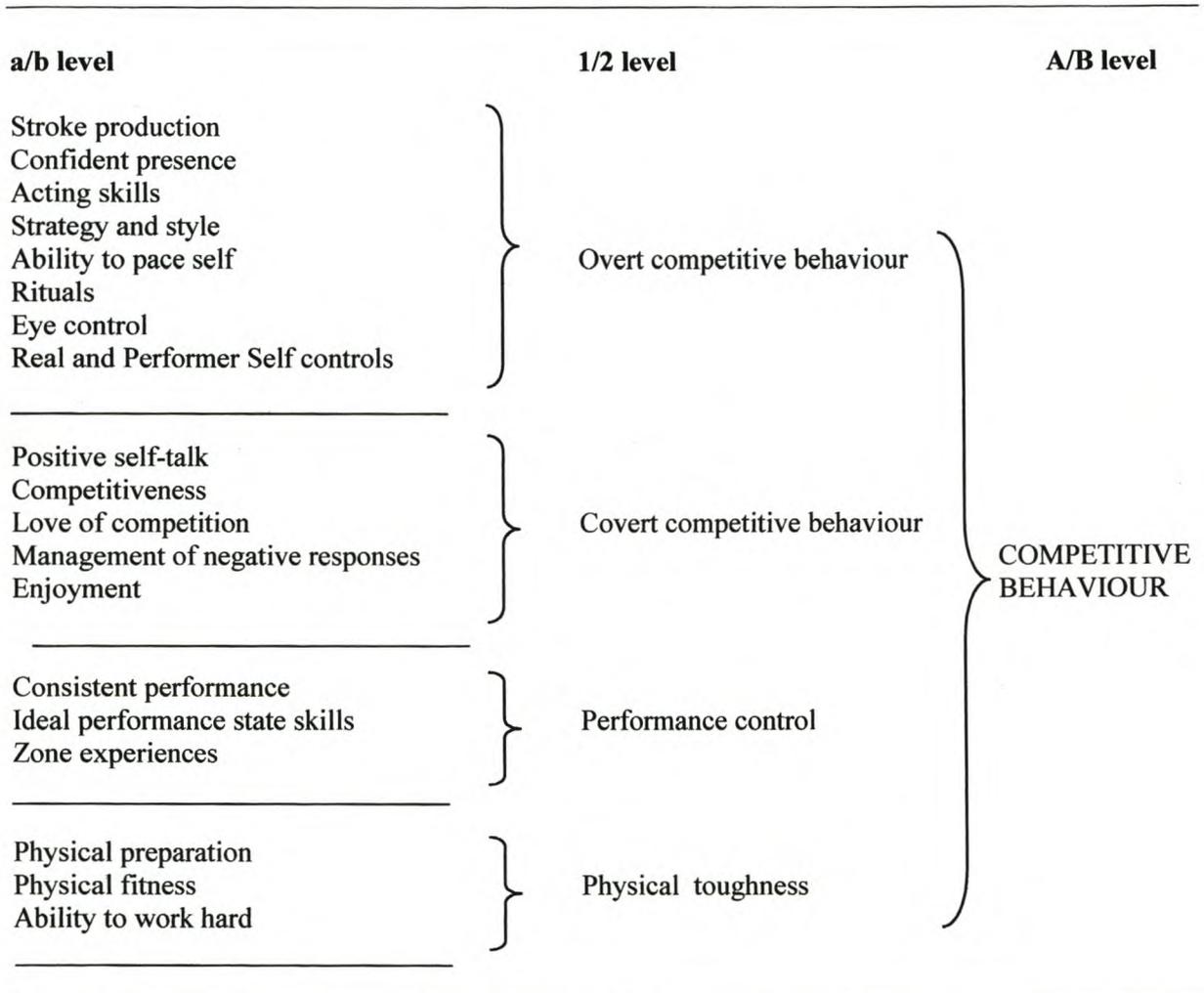


Figure 4.5: Competitive behaviour theme

The fifth of the highest order theme emerging from the inductive content analysis is **competitive behaviour**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 4.5. The associated statements from which the level a/b themes were derived, can be viewed in Appendix G.

Competitive behaviour is defined as the athlete’s ability to show distinct overt and covert competitive behaviour, to maintain performance control and the necessary physical toughness. This theme emerged from the four 1/2 level themes presented in order of appearance are: overt competitive behaviour, covert competitive behaviour, performance control and physical toughness.

Overt competitive behaviour is defined as the athlete’s ability to produce consistent strokes, display a confident image, show well-developed acting skills, to exhibit strategy and style, show an ability to pace himself/herself, display rituals, eye control and Real and Performer Self control. *Covert competitive behaviour* is defined as the athlete’s ability to display positive self-talk, competitiveness, a love of competition, management of negative responses and enjoyment. *Performance control* is defined as the ability that the athlete has to display consistent performance, ideal performance state skills and zone experiences. *Physical toughness* is defined as the ability of the athlete to demonstrate physical preparation, show physical fitness and to work hard.

F. PLANNING SKILLS

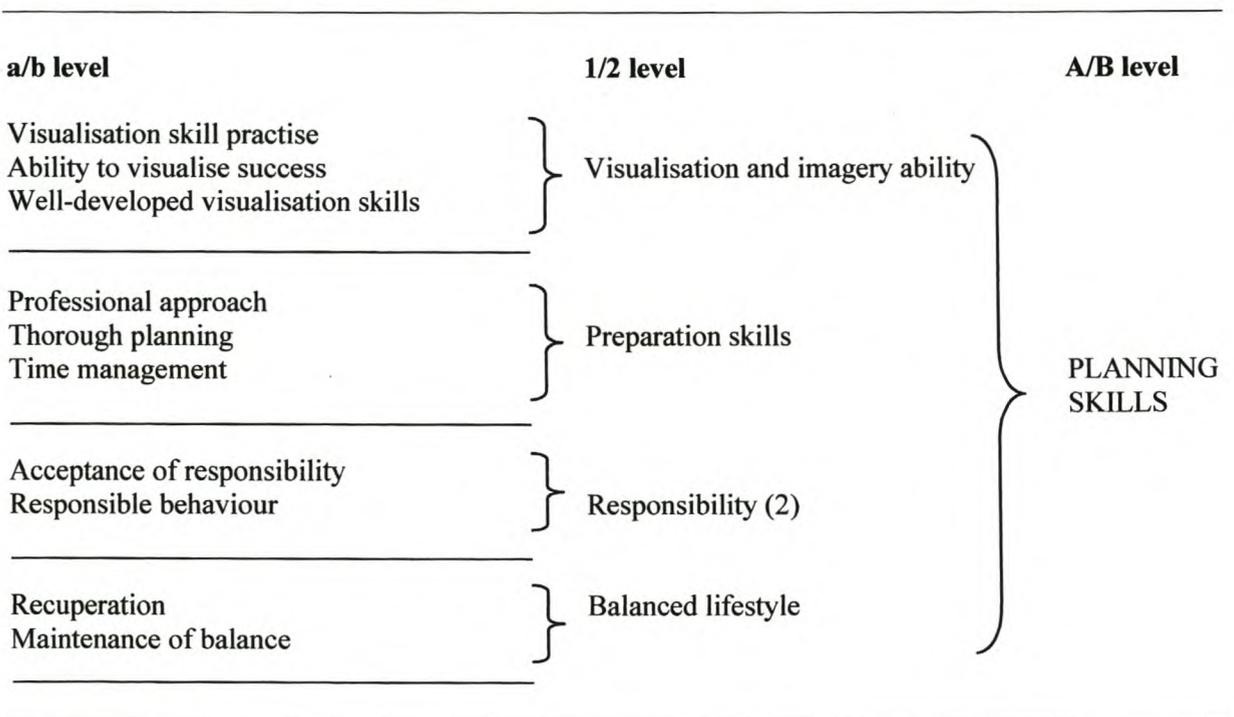


Figure 4.6: Planning skills theme

The sixth of the highest order themes emerging from the inductive content analysis is **planning skills**. An illustration of the inductive content analysis showing this emergent theme beyond the statement

level, can be seen in Figure 4.6. The associated statements from which the level a/b themes were derived, can be viewed in Appendix H.

Planning skills is defined as the ability of the athlete to apply visualisation and imagery skills, preparation skills, to bear responsibility and maintain a balanced lifestyle. This theme emerged from the four 1/2 level themes presented, in order of appearance are: visualisation and imagery skills, preparation skills, responsibility and balanced lifestyle.

Visualisation and imagery ability is defined as the athlete's ability to practise visualisation skills, to visualise success and to apply well-developed visualisation skills. *Preparation skills* is defined as the athlete's ability to maintain a professional approach, do thorough planning and demonstrate time management skills. *Responsibility* is defined as the ability of the athlete to accept responsibility and show responsible behaviour. *Balanced lifestyle* is defined as the athlete's ability to demonstrate recuperation and maintain a balance.

G. EMOTIONAL READINESS

The fifth of the highest order themes emerging from the inductive content analysis is **emotional readiness**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 4.7. The associated statements from which the level a/b themes were derived, can be viewed in Appendix I.

Emotional readiness is defined as the ability of the athlete to display readiness, energy, acceptance, attitude and toughness. This theme emerged from the five 1/2 level themes presented, in order of appearance are: readiness, energetic, acceptance, attitude and toughness.

Readiness is defined as the ability of the athlete to display a challenge response and alertness. *Energetic* is defined as the athlete's ability to demonstrate vivaciousness, positive energy and readiness to compete. *Acceptance* is defined as the ability of the athlete to accept pain, criticism and inaccuracy. *Attitude* is defined as the athlete's ability to reveal a positive and empowering attitude. *Toughness* is defined as the athlete's capacity to produce complete toughness, demonstrate positive participation responses and demonstrate control over his/her skill, talent and emotions.

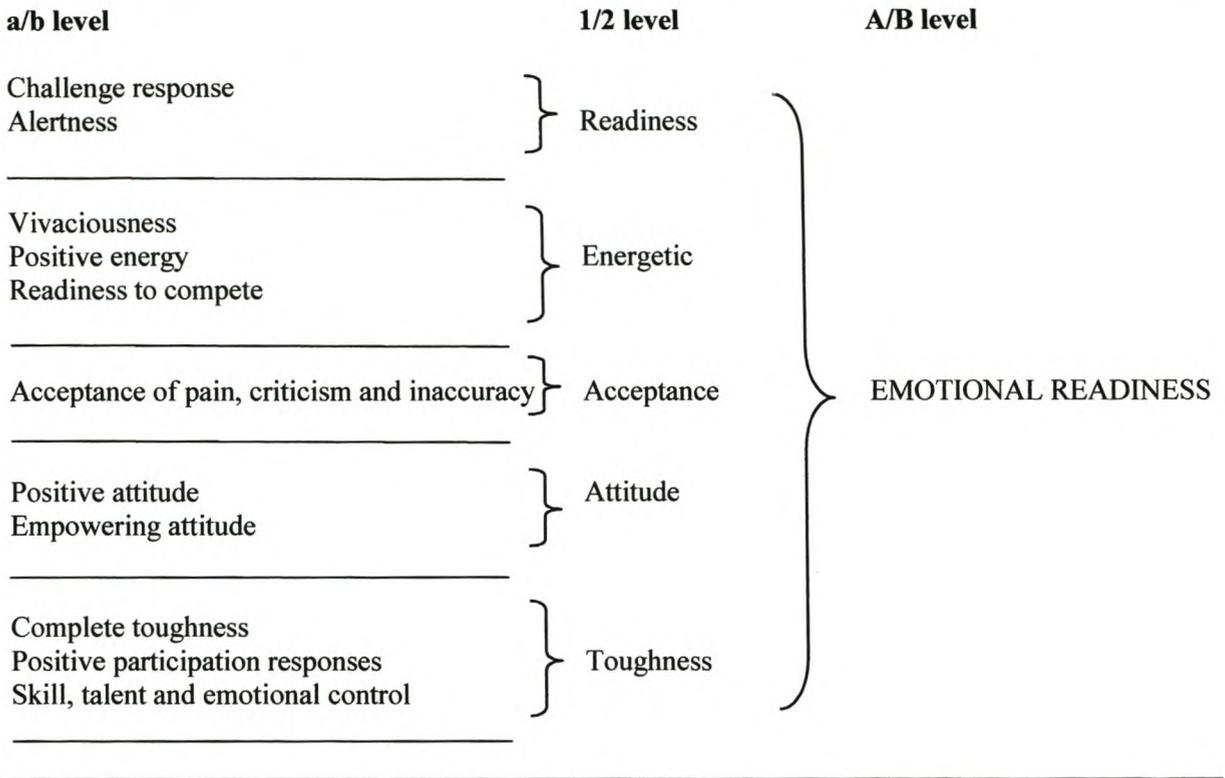


Figure 4.7: Emotional readiness theme

UNCLUSTERED THEME

H. TEAM COHESION

The eighth highest order theme emerging from the inductive content analysis is **team cohesion**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 4.8. The associated statements from which the level a/b themes were derived, can be viewed in Appendix J.

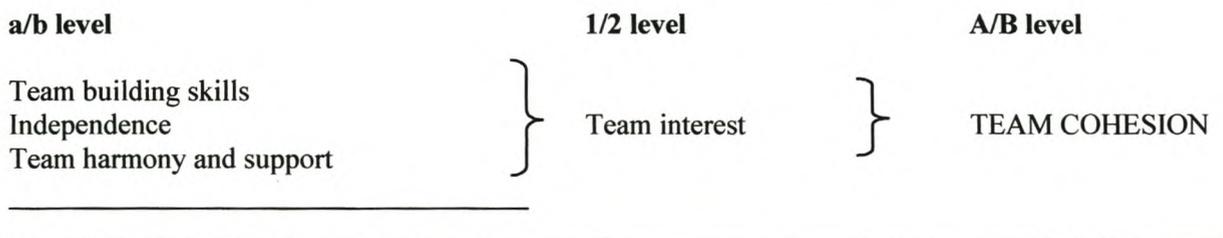


Figure 4.8: Team cohesion theme

Team cohesion is defined as the athlete's ability to maintain team interest. This theme emerged from the one 1/2 level theme presented is: team interest.

Team interest is defined as the capability of the athlete to display team building skills, independence and team harmony and support.

DISCUSSION

Due to a dearth of studies dealing with the subject of mental toughness, it is not possible to refer to any studies that deal specifically with the above-mentioned highest order themes. It is thus impossible to support or exclude any of the themes that were inductively identified via a content analysis of the literature surrounding mental toughness. Of the four studies that were discussed in chapter 1, Dennis (1978) used a scale that has not been validated or tested for reliability. The study of Davis and Zaichkowsky (1998) determined mental toughness by means of the subjective ratings of the five on-ice behaviours of: adversity response, over-achievement, effort, enthusiasm and skill. These show some similarity to the eight themes that were identified in the present study. The 1/2 level themes of the highest order theme *motivation level*, almost cover all these on-ice behaviours. The highest order theme of *competitive behaviour* also includes some of these on-ice behaviours.

The two Korean studies by Dongsung and Kang-Heon (1994) and Kang-Heon, Dongsung, Myung-Woo, and Elisa (1994), used the Mental Toughness Test (MTT) developed by Loehr (1982) to determine mental toughness. This test determines mental toughness according to the following seven factors: self-confidence, arousal control, attention control, visualisation and imagery control, motivation level, positive energy and attitude control. These too show some resemblance to the eight identified themes. The highest order themes of *confidence maintenance*, *arousal control*, *cognitive skill*, *planning skills*, *motivation level* and *emotional readiness* and their comprising 1/2 level themes include the above-mentioned factors of the MTT.

CONCLUSION

It can be tentatively concluded that the identified themes have some validity, but much research still has to be done to finalise the definition of mental toughness. From the inductive content analysis of the literature surrounding mental toughness, the following dimensions of mental toughness can be highlighted:

- The athlete's motivation level is of utmost importance if an athlete wants to develop and/or maintain his/her current level of mental toughness.
- The athlete has to control his/her arousal and maintain his/her confidence.
- He/she has to develop and maintain his/her cognitive skills, planning ability and emotional readiness.
- In team sports team cohesion is of importance to the team's mental toughness.

CHAPTER FIVE

THEMES IDENTIFIED FROM STATEMENTS OF THE COACHES AND ATHLETES

In this chapter the results of the process of the content analysis of the statements received from the coaches and athletes will be discussed. This will entail a definition and discussion of the highest order themes that were identified. The sub-themes, from which the higher order themes emerged, will be highlighted. Two additional important, but unclustered, themes will also be defined and discussed. The method of content analysis has already been described in chapter 3 and will thus be excluded in this chapter. The discussion of the qualitative nature of the results will be dealt with in chapter 6.

RESULTS

In order to simplify the presentation of the results, the procedure that was followed in chapter 4 will be repeated. The characteristics of mental toughness, as identified by the coaches and athletes, will be presented in descending order from the highest order themes through to the respective lower order themes. The reader is reminded, that although the data is presented from right to left, the actual inductive analysis progressed from left to right. The illustration of the inductive content analysis showing the emergent themes beyond the statement level, can be seen in Figure 5.1 - 5.12. As can be seen in these figures, the a/b level themes (left column) clustered into the higher 1/2 level themes (middle column). Further clustering created the highest order A/B level themes (right column). The associated statements, from which the a/b level themes were derived, can be viewed in Appendix K-V. These statements were extracted from the statements made by the coaches and athletes.

In the appendix the verbatim statements of the coaches and athletes are printed in italics. Note that the number in parenthesis following each statement and theme, represents the frequency with which both the coaches and athletes mentioned them. It is important to note that those a/b level themes followed by an asterisk e.g. (Perseverance *) in the figures, represent the themes that were carried directly into the higher inductive level.

The twelve highest order mental toughness themes emerging from the inductive content analysis include in order of appearance: 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, religious convictions and ethics.

A. MOTIVATION LEVEL

The first of the highest order themes emerging from the inductive content analysis is **motivation level**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 5.1. The associated statements from which the a/b level themes were derived, can be viewed in Appendix K.

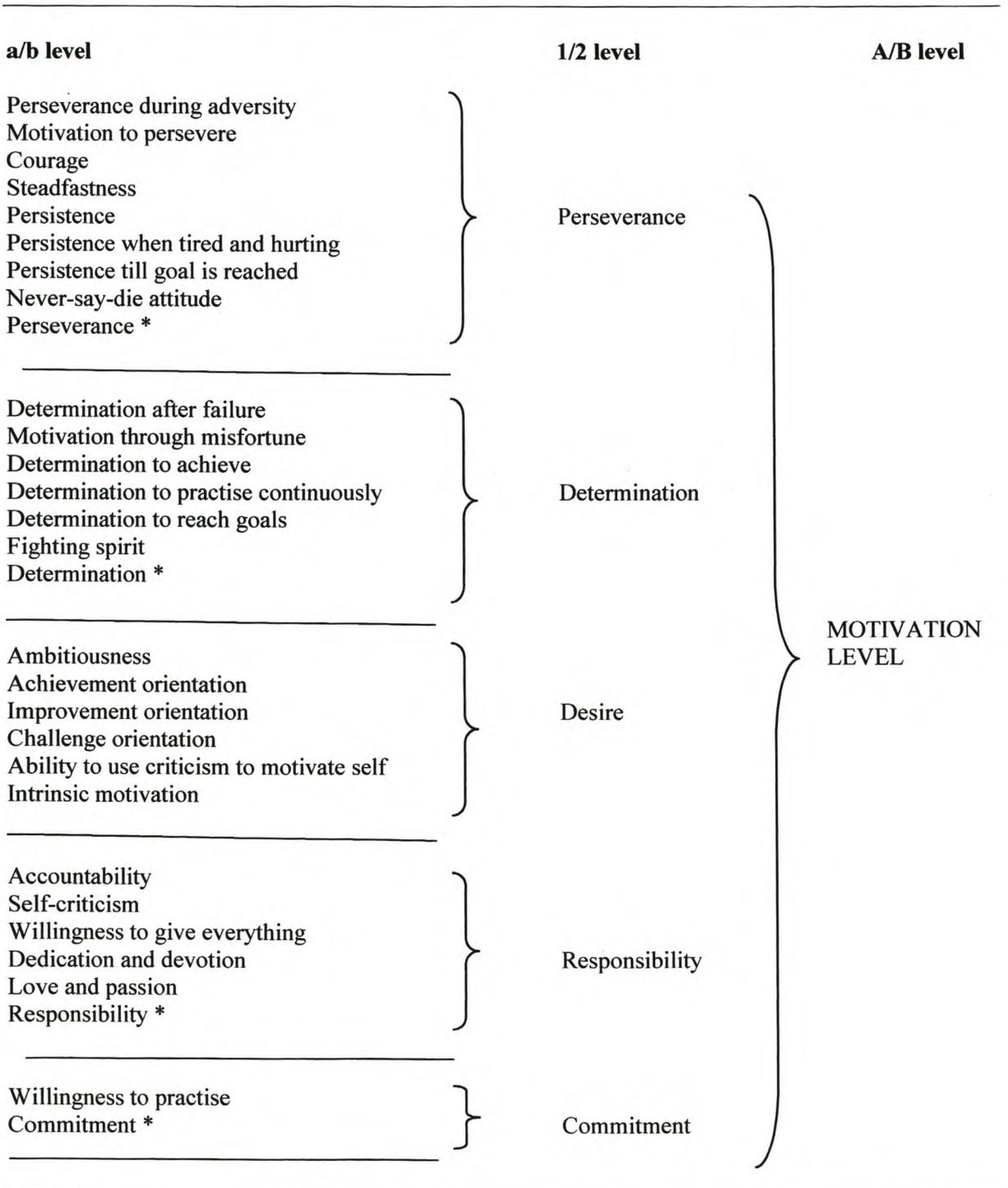


Figure 5.1: Motivation level theme

Motivation level is defined as the ability of the athlete to show perseverance, determination, desire, responsibility and commitment. This theme emerged from the five 1/2 level themes presented in order of appearance, namely: perseverance, determination, desire, responsibility and commitment.

Perseverance is defined as the ability of the athlete to persevere during adversity, display motivation to persevere, show courage, steadfastness, persistence when tired and hurting, persistence until his/her goals are reached, demonstrate a never-say-die attitude and perseverance. *Determination* is defined as the ability of the athlete to display determination after failure, to achieve, to practise continuously, to reach goals, to succeed, to show fighting spirit and determination. *Desire* is defined as the athlete's ambition, his/her orientation to achieve, improve and challenge himself/herself, and his/her ability to use criticism to motivate himself/herself. *Responsibility* is defined as the athlete's ability to be accountable, to exhibit self-criticism, his/her willingness to give everything, to dedicate and devote himself/herself, show love and passion and take responsibility. *Commitment* is defined as the athlete's willingness to practise and display commitment.

B. COPING SKILLS

The second of the highest order themes emerging from the inductive content analysis is **coping skills**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 5.2. The associated statements from which the a/b level themes were derived, can be viewed in Appendix L.

Coping skills is defined as the ability of the athlete to reveal his/her coping ability, demonstrate composure, acceptance, activation control and adaptability. This theme emerged from the five 1/2 level themes presented in order of appearance, namely: coping ability, composure, acceptance, activation control and adaptability.

Coping ability is defined as the ability of the athlete to cope with failure, disappointments, pressure, intimidation, distraction, difficulties, poor form, criticism, stress, fear and with both success and failure. *Composure* is defined as emotional reaction control, ability to handle mistakes and display composure. *Acceptance* is defined as the ability of the athlete to accept criticism, disappointments, mistakes, defeat and failure, the challenges of training, both success and failure and general acceptance. *Activation control* is defined as the ability of the athlete to display anxiety and arousal control, calmness, a cool head and his/her relaxation ability. *Adaptability* is defined as the ability of the athlete to adapt to various conditions and change.

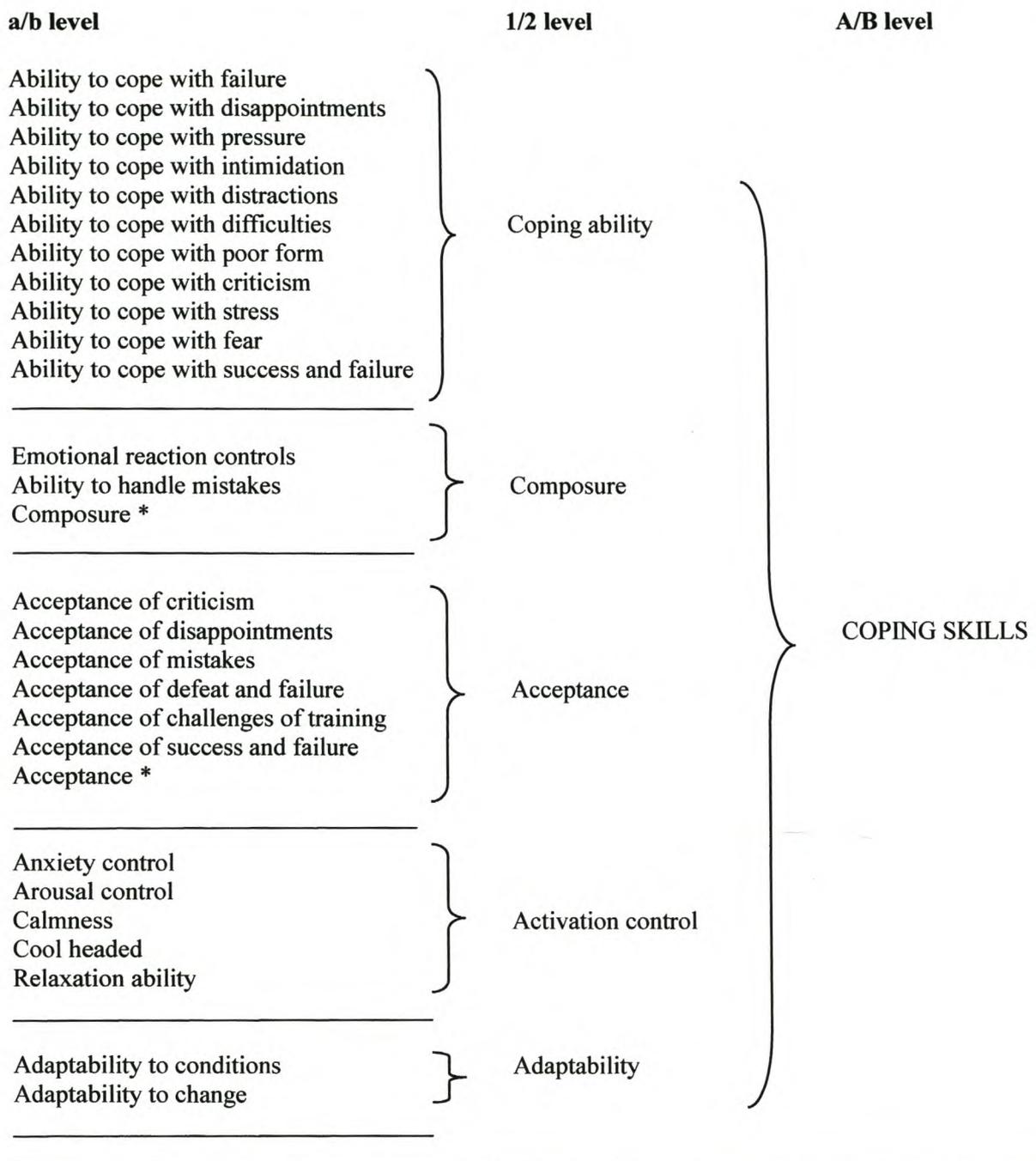


Figure 5.2: Coping skills theme

C. CONFIDENCE MAINTENANCE

The third of the highest order themes emerging from the inductive content analysis is **confidence maintenance**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 5.3. The associated statements from which the a/b level themes were derived, can be viewed in Appendix M.

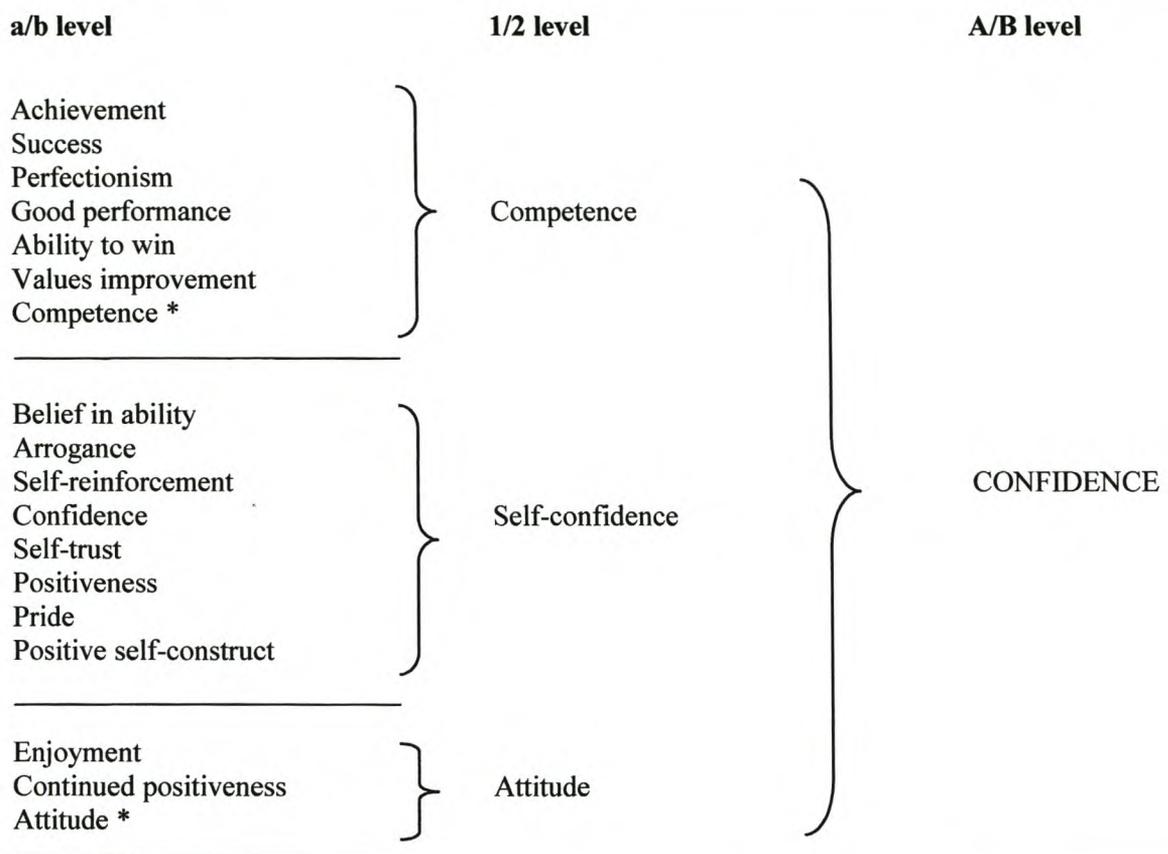


Figure 5.3: Confidence maintenance theme

Confidence maintenance is defined as the ability of the athlete to reveal competence, self-confidence and attitude. This theme emerged from the three 1/2 level themes presented in order of appearance, namely: competence, self-confidence and attitude.

Competence is defined as the ability that the athlete presents to achieve, produce success, be perfectionistic, demonstrate good performance, win, to value improvement and show competence. *Self-confidence* is defined as the athlete’s belief in his/her ability, he ability to manifest arrogance, show self-reinforcement, positiveness, pride and a positive self-construct. *Attitude* is defined as the ability that the athlete reveals to enjoy himself/herself, produce continued positiveness and display the correct attitude.

D. COGNITIVE SKILL

The fourth of the highest order themes emerging from the inductive content analysis is **cognitive skill**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 5.4. The associated statements from which the a/b level themes were derived, can be viewed in Appendix N.

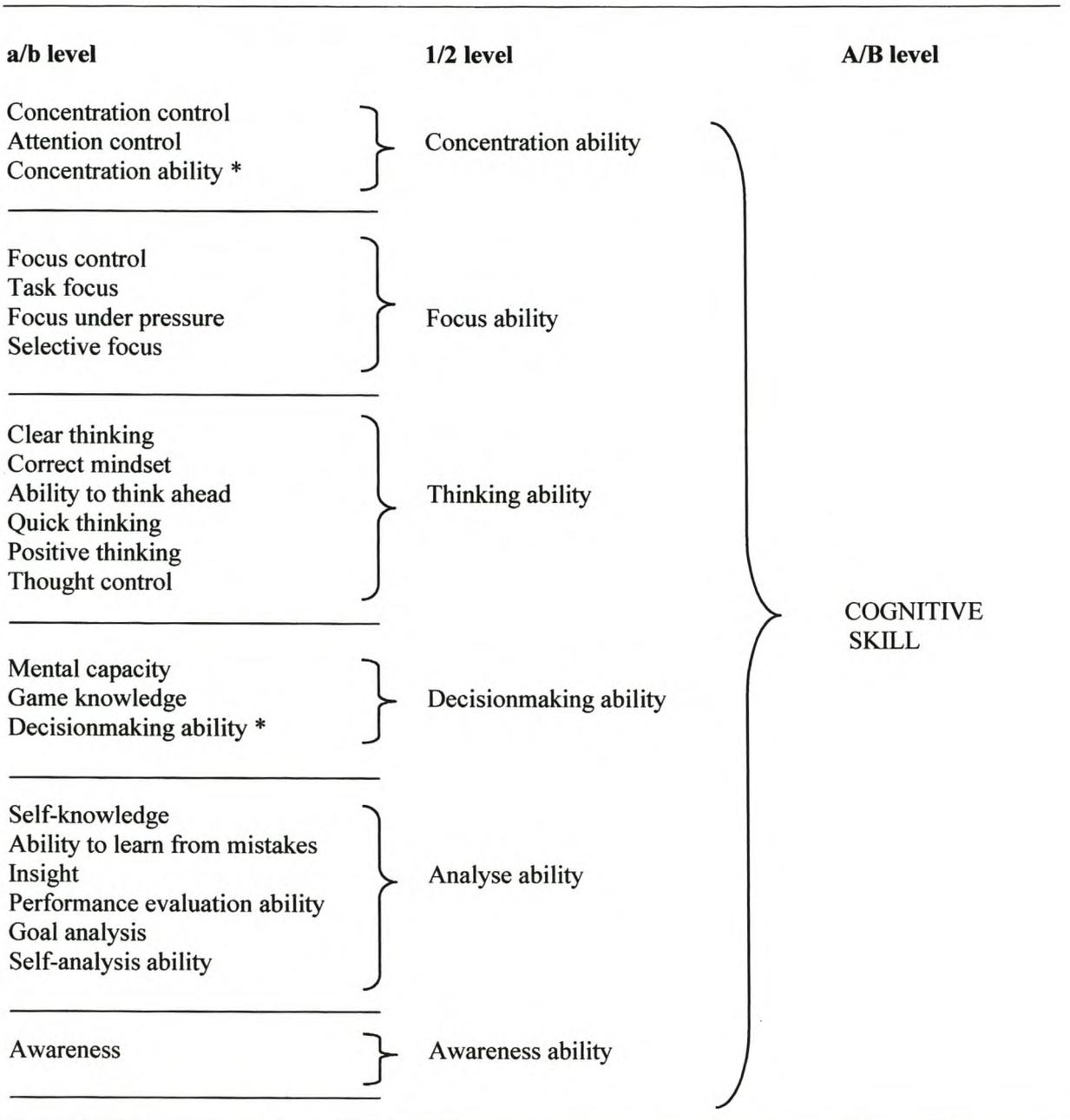


Figure 5.4: Cognitive skill theme

Cognitive skill is defined as the ability of the athlete to concentrate, focus, think, make decisions and analyse. This theme emerged from the five 1/2 level themes presented in order of appearance, namely: concentration ability, focus ability, thinking ability, decisionmaking ability and analysing ability.

Concentration ability is defined as the ability that the athlete displays in controlling his/her concentration and attention and demonstrating his/her concentration ability. *Focus ability* is defined as the ability of the athlete to display focus control, a task focus, to focus under pressure and show selective focus. *Thinking ability* is defined as the ability that the athlete demonstrates to think clearly, have the correct mindset, think ahead, think quickly and positively and reveal thought control. *Decisionmaking ability* is defined as the capacity that the athlete displays mentally, his/her game knowledge and his/her decisionmaking ability. *Analyse ability* is defined as the self-knowledge, ability to learn from mistakes, insight, performance evaluation ability, goal analysis and self-analysis ability that the athlete possesses. *Awareness ability* is defined as the ability of the athlete to be aware.

E. DISCIPLINE AND GOAL-DIRECTEDNESS

The fifth of the highest order themes emerging from the inductive content analysis is **discipline and goal-directedness**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 5.5. The associated statements from which the a/b level themes were derived, can be viewed in Appendix O.

Discipline and goal-directedness is defined as the ability of the athlete to display discipline, a goal-orientation and idealism. This theme emerged from the three 1/2 level themes presented in order of appearance, namely: discipline, goal-orientation and idealism.

Discipline is defined as the athlete's ability to display encouragement, conscientiousness, patience, discipline, drive, enthusiasm and self-discipline. *Goal-orientation* is defined as the ability of the athlete to set challenging goals, set achievable goals before hand, set clear and achievable goals, display a goal focus, demonstrate stepwise goalsetting, maintain a high goal potential, exhibit realistic goal setting and display a goal orientation. *Idealism* is defined as the ability that the athlete has to display ideals and dreams.

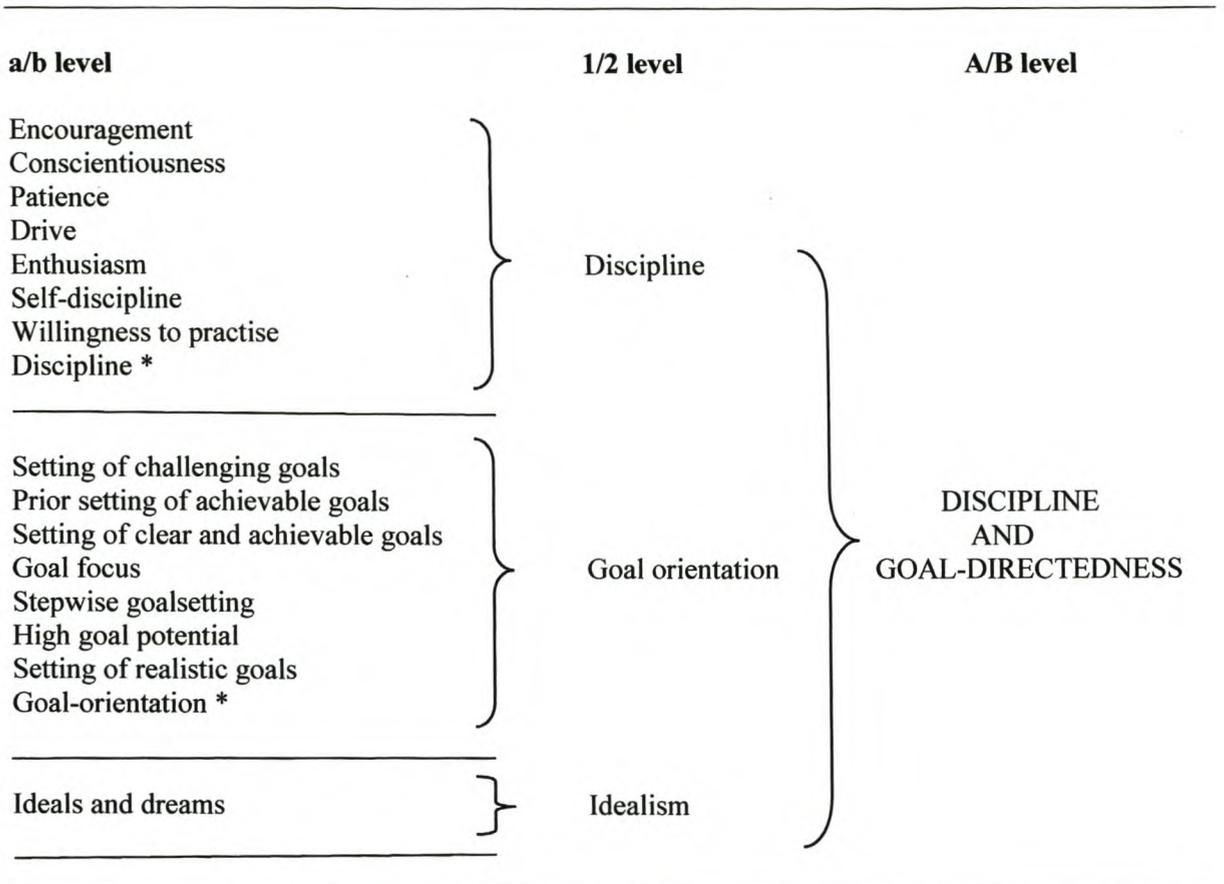


Figure 5.5: Motivation and goal-directedness theme

F. COMPETITIVENESS

The sixth of the highest order themes emerging from the inductive content analysis is **competitiveness**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 5.6. The associated statements from which the a/b level themes were derived, can be viewed in Appendix P.

Competitiveness is defined as the ability of the athlete to display his/her will, to exhibit the appearance of a winner, maintain consistent performance, reveal a high competitive level and big match temperament. This theme emerged from the five 1/2 level themes presented in order of appearance, namely: will, appearance of a winner, consistent performance, high competitive level and big match temperament.

Will is defined as the athlete’s ability to show willpower, his/her will to be physical and will or willingness. *Appearance of a winner* is defined as the athlete’s ability to display a confident

appearance and also a calm, controlled and positive appearance. *Consistent performance* is defined as the ability of the athlete to be consistent, produce a reliable performance and illustrate consistent play. *High competitive level* is defined as the aggressiveness and assertiveness the athlete reveals, his/her ability to raise his/her playing level, display competitiveness, demonstrate an appetite for competition and opposition, his/her single-mindedness about winning and express sportsmanship. *Big match temperament* is defined as the athlete's ability to display temperament, ability to win close matches, a non-threatened disposition, performance under pressure, an ability to fight back and win and demonstrate big match temperament.

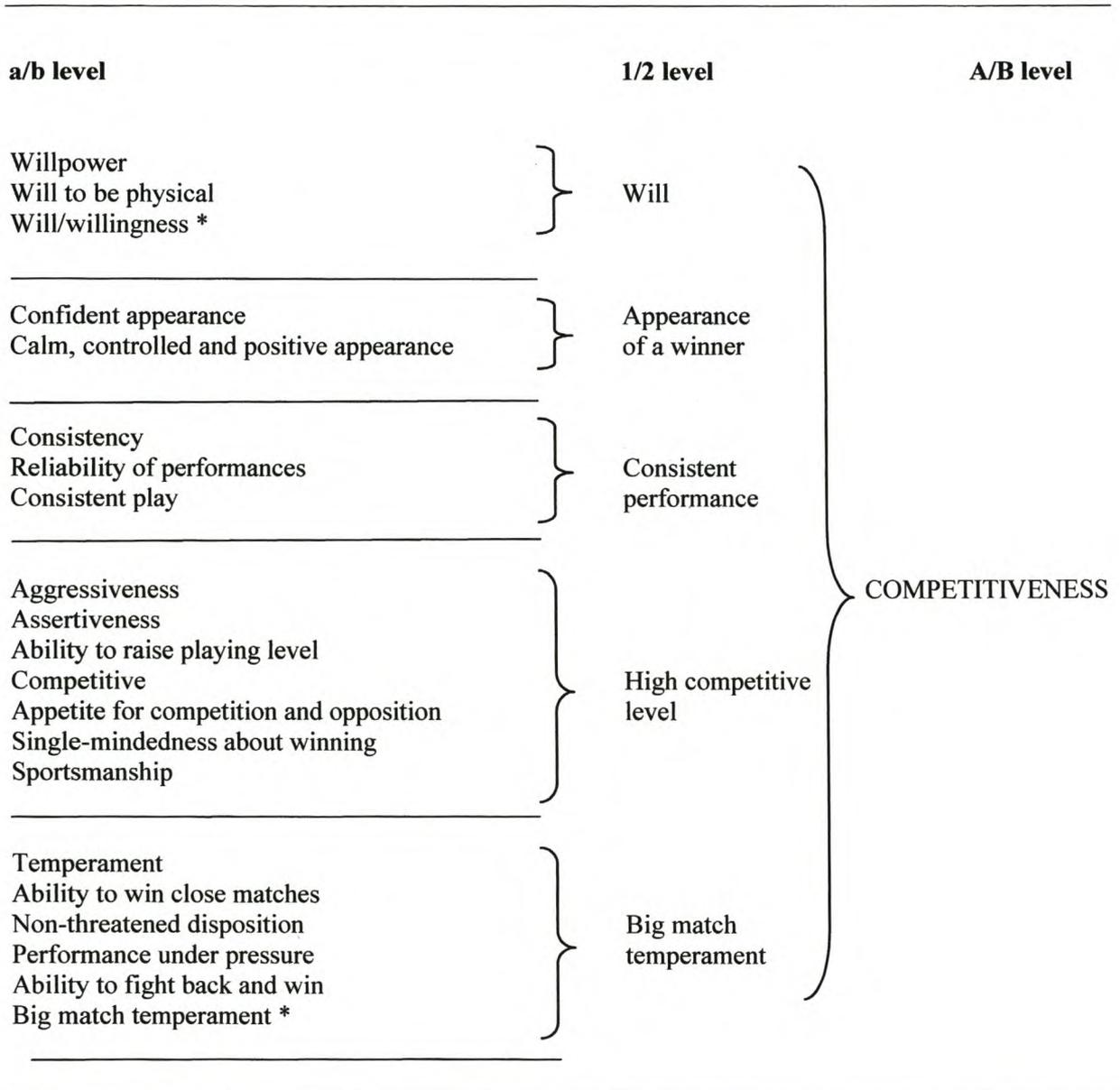


Figure 5.6: Competitiveness theme

G. POSSESSION OF PREREQUISITE PHYSICAL AND MENTAL REQUIREMENTS

The seventh of the highest order themes emerging from the inductive content analysis is **possession of prerequisite physical and mental requirements**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 5.7. The associated statements from which the a/b level themes were derived, can be viewed in Appendix Q.

Possession of prerequisite physical and mental requirements is defined as the ability of the athlete to display high physical and mental conditioning, an ability to cope with pain and demonstrate self-sacrifice. This theme emerged from the three 1/2 level themes presented in order of appearance, namely: high physical and mental conditioning, ability to cope with pain and self-sacrifice.

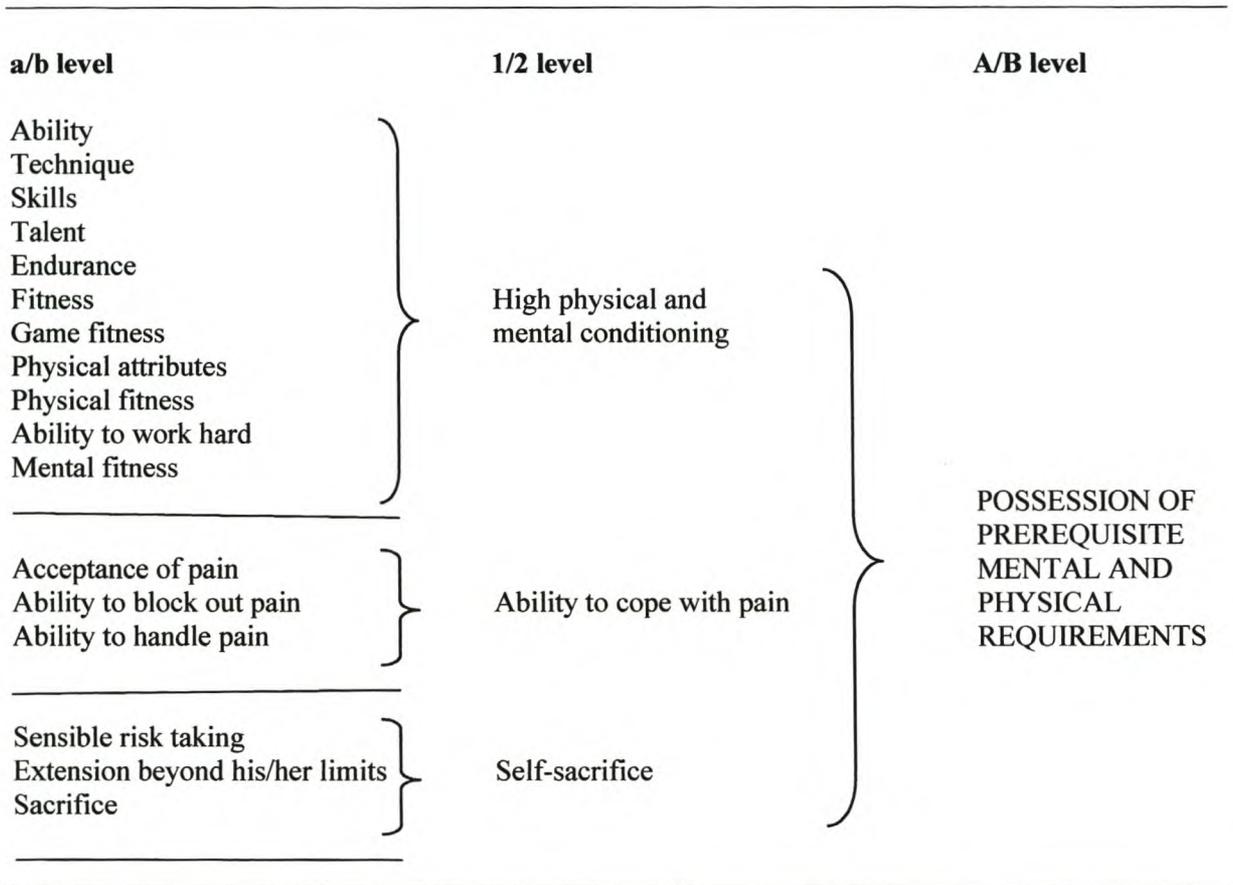


Figure 5.7: Possession of prerequisite physical and mental requirements theme

High physical and mental conditioning is defined as the athlete’s possession of ability, technique, skills, talent, endurance, fitness, game fitness, physical attributes, physical fitness, his/her ability to work hard and mental fitness. *Ability to cope with pain* is defined as the athlete’s ability to accept pain,

to block out pain and handle pain. *Self-sacrifice* is defined as the athlete's ability to take sensible risks, extend beyond his/her limits and demonstrate sacrifice.

H. TEAM UNITY

The eighth of the highest order themes emerging from the inductive content analysis is **team unity**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 5.8. The associated statements from which the a/b level themes were derived, can be viewed in Appendix R.

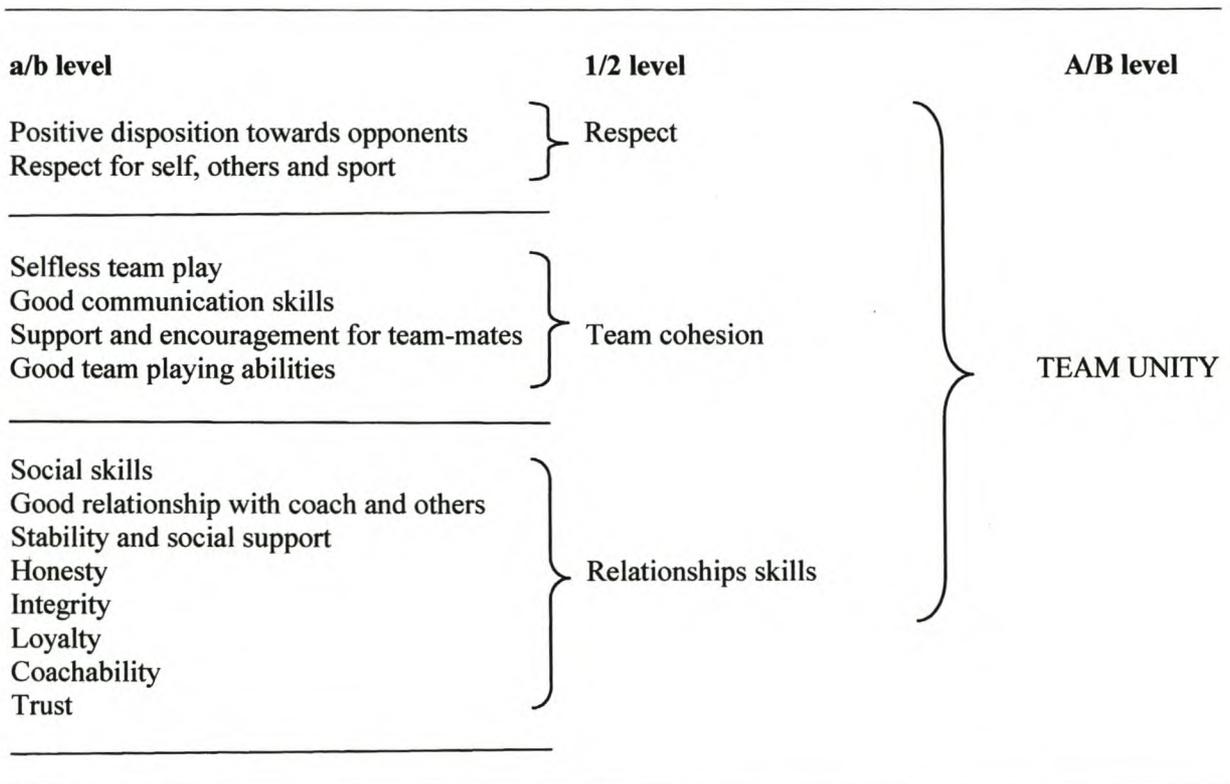


Figure 5.8: Team unity theme

Team unity is defined as the ability of the athlete to reveal respect, team cohesion and relationship skills. This theme emerged from the three 1/2 level themes presented in order of appearance, namely: respect, team cohesion and relationship skills.

Respect is defined as the ability that the athlete has to show a positive disposition towards his/her opponents and express respect for self, others and the sport that he/she participate in. *Team cohesion* is defined as the athlete's ability to display selfless team play, revealing good communication skills,

showing support and encouragement for team-mates, presenting good team playing abilities and fostering team spirit and harmony. *Relationship skills* is defined as the athlete's ability to display social skills, a good relationship with his/her coach and others, stability and social support, honesty, integrity, loyalty, coachability and trust.

I. PREPARATION SKILLS

The ninth of the highest order themes emerging from the inductive content analysis is **preparation skills**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 5.9. The associated statements from which the a/b level themes were derived, can be viewed in Appendix S.

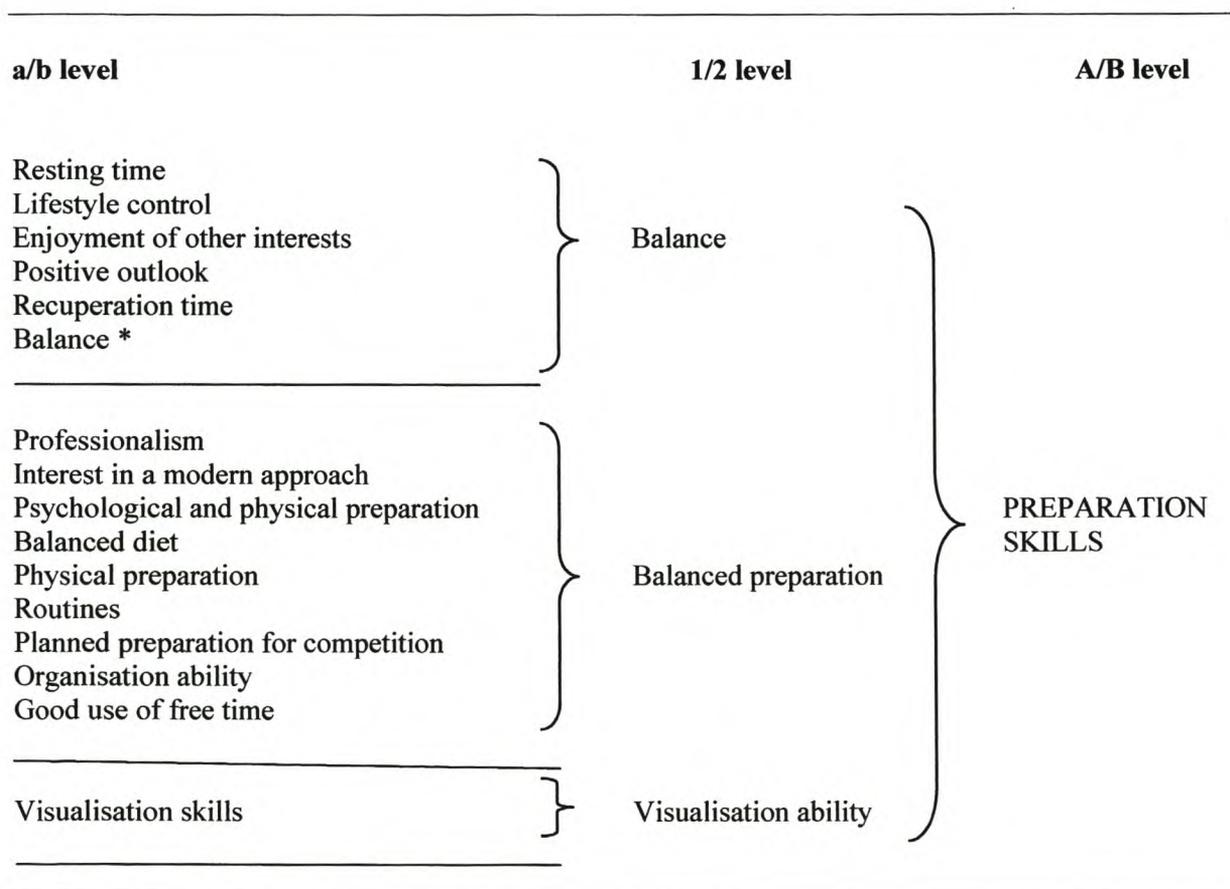


Figure 5.9: Preparation skills theme

Preparation skills is defined as the ability of the athlete to display balance, balanced preparation and visualisation. This theme emerged from the three 1/2 level themes presented in order of appearance, namely: balance, balanced preparation and visualisation.

Balance is defined as the time that the athlete allows for rest, his/her ability to control his/her lifestyle, his/her enjoyment of other interests in life, ability to display a positive outlook, make time to recuperate and show balance. *Balanced preparation* is defined as the athlete's ability to display professionalism, interest in a modern approach, psychological and physical preparation, a balanced diet, physical preparation, manifest routines, demonstrate planned preparation for competition, show his/her organisation ability and ensure good use of free time. *Visualisation ability* is defined as the ability that the athlete has to display visualisation skills.

J. PSYCHOLOGICAL HARDINESS

The tenth of the highest order themes emerging from the inductive content analysis is **psychological hardiness**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 5.10. The associated statements from which the a/b level themes were derived, can be viewed in Appendix T.

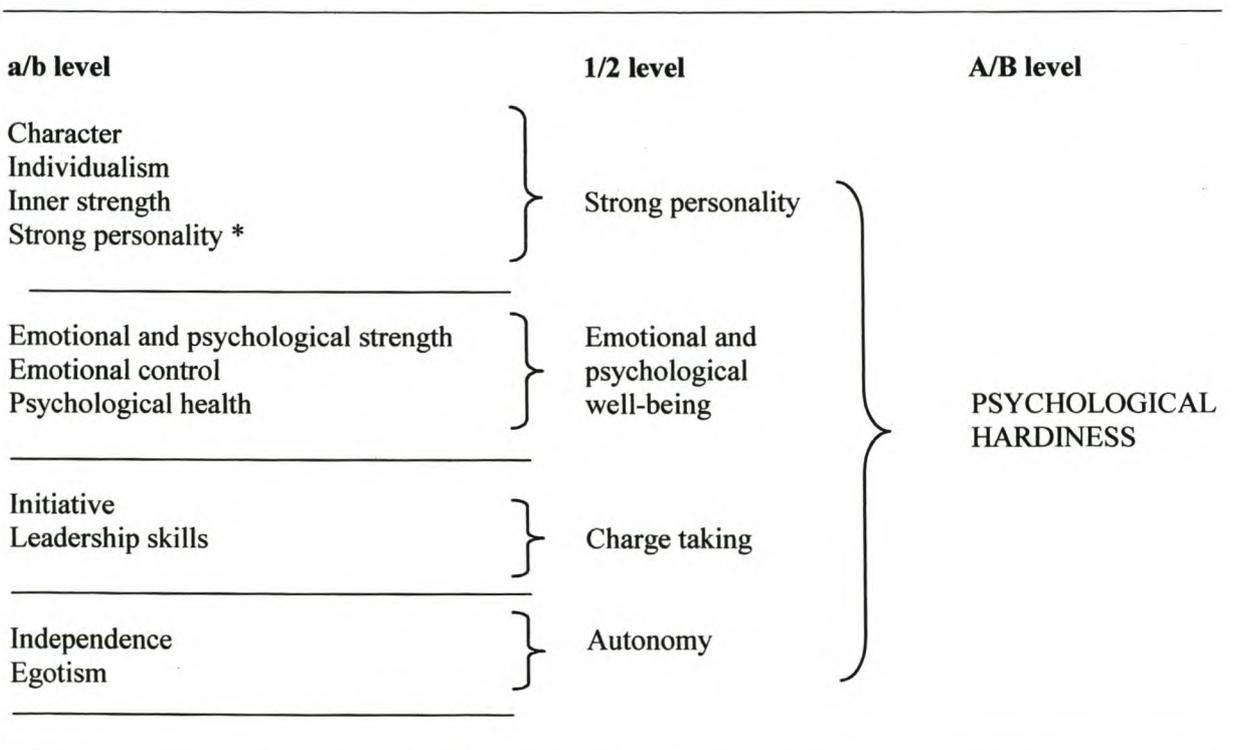


Figure 5.10: Psychological hardiness theme

Psychological hardiness is defined as the ability of the athlete to reveal a strong personality, emotional and psychological well-being, to take charge and show autonomy. This theme emerged

from the four 1/2 level themes presented in order of appearance, namely: strong personality, emotional and psychological well-being, charge taking and autonomy.

Strong personality is defined as the character of the athlete, his/her individualism, inner strength and strong personality. *Emotional and psychological well-being* is defined as the emotional and psychological strength the athlete possesses, his/her emotional control and psychological health. *Charge taking* is defined as the ability of the athlete to take initiative and show leadership skills. *Autonomy* is defined as the athlete's independence and egotism.

UNCLUSTERED THEMES

K. RELIGIOUS CONVICTIONS

The eleventh of the highest order themes emerging from the inductive content analysis is **religious convictions**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 5.11. The associated statements from which the a/b level themes were derived, can be viewed in Appendix U.

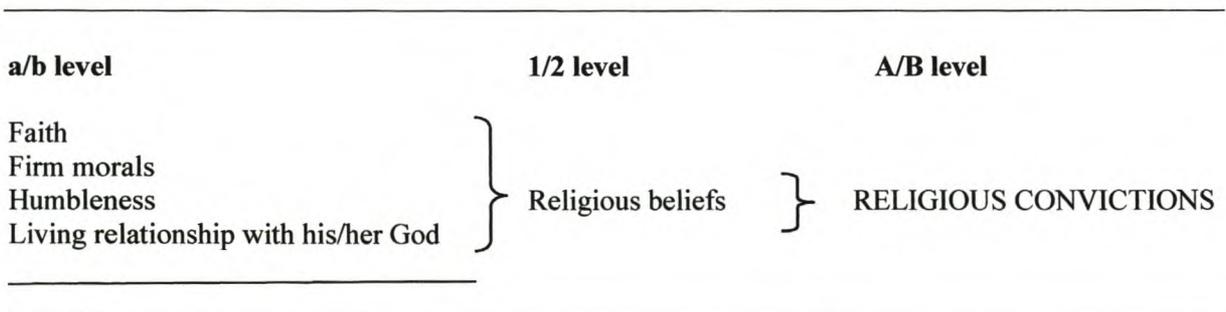


Figure 5.11: Religious convictions theme

Religious convictions is defined as the religious beliefs of the athlete. This theme emerged from the one 1/2 level theme presented, namely: religious beliefs.

Religious beliefs is defined as the athlete's demonstration of faith, firm morals, humbleness and a living relationship with his/her God.

L. ETHICS

The twelfth of the highest order themes emerging from the inductive content analysis is **ethics**. An illustration of the inductive content analysis showing this emergent theme beyond the statement level, can be seen in Figure 5.12. The associated statements from which the a/b level themes were derived, can be viewed in Appendix V.

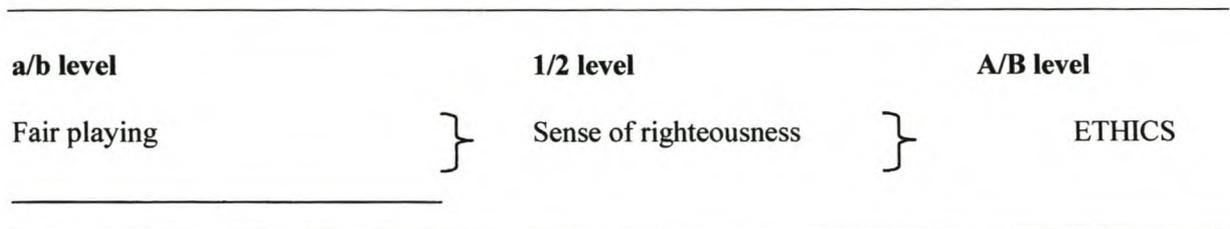


Figure 5.12: Ethics theme

Ethics is defined as the athlete’s ability to reveal a sense of righteousness. This theme emerged from the one 1/2 level theme presented, namely: sense of righteousness.

Sense of righteousness is defined as the athlete’s ability to play fair.

DISCUSSION

Before any discussion of the themes identified from the coaches’ and athletes’ statements can occur, it is pertinent to shed some light on the bias that might have or probably did occur in the process of this theme identification. The process of inductive content analysis requires the researcher to have the themes emerge from the data without harbouring any preconceived ideas. In light of the sequence of this research study, much care had to be taken to ensure that the themes from the literature (chapter 4) did not impact on the identification of themes from the coaches’ and athletes’ statements. Objectivity was thus of the utmost importance. Although some themes do show similarity, these themes and their lower level themes do not always correspond. It is clear, that the following themes from the literature and those identified by the coaches and athletes show some resemblance to one another as illustrated by Table 5.1.

Table 5.1:**Comparison between the mental toughness themes from the literature and the themes as identified from the statements of the coaches and athletes**

Themes from the literature	Themes identified from coaches' and athletes' statements
• Motivation level	Motivation level
• Arousal control	Coping skills
• Confidence maintenance	Confidence maintenance and discipline and goal-directedness
• Cognitive skill	Cognitive skill
• Competitive behaviour	Competitiveness and possession of prerequisite physical and mental requirements
• Planning skills	Preparation skills
• Emotional readiness	Psychological hardiness
• Team cohesion	Team unity

The themes *religious convictions* and *ethics* identified by the coaches and athletes are not mentioned in the literature. This could be ascribed to the coaches and athletes not being scientists who need to explain phenomenon according to measurable yardsticks. Coaches and athletes are probably more inclined to explain exceptional performance in sport to spiritual and non-measurable influences.

CONCLUSION

From the perspective of the coaches and athletes it can be concluded that in order for an athlete to display mental toughness, the following are of importance:

- The maintenance of his/her motivation levels, coping skills, confidence, cognitive skill and discipline and goal-directedness are also regarded as very important and can be developed by thorough preparation.
- The possession of the prerequisite physical and mental requirements can only be achieved through the appropriate preparation skills.

- He/she should develop the necessary psychological hardiness and preparation skills.
- The athlete should have strong ethics and religious convictions.
- In team sports, the characteristic of team unity should be emphasised in order to display group mental toughness.

CHAPTER SIX

QUANTITATIVE ANALYSIS OF THE IDENTIFIED THEMES FROM THE STATEMENTS OF THE COACHES AND ATHLETES

In this chapter the themes identified and discussed in chapter 5, will be discussed quantitatively. The frequency, with which the A/B level themes were mentioned, will be highlighted. To ensure that the distribution of the themes between the coaches and athletes is understood, the number of times each was mentioned will also be highlighted. A further discussion will revolve around the coaches' and athletes' verbatim ranking of the characteristics of mental toughness. The average scores awarded by the coaches and athletes in rating the possible effectiveness of a coach and sport psychologist in the strengthening of mental toughness, will also be highlighted. The reader is reminded that the purpose of the study is to identify the characteristics that should be included in a definition of mental toughness. The emphasis was therefore not on statistical analysis and thus no further analysis was done to underpin the identified themes.

QUANTITATIVE RESULTS

Distribution of themes

This section of the results co-ordinates with Table 6.1 in presenting the frequency with which the various highest order themes (A/B level) were mentioned in total, as well as individually by the coaches and athletes. The table in Appendix W contains more complete data on the A/B level themes by highlighting the level 1/2 themes' frequencies.

The following patterns emerge when the percentages and actual number of the themes are examined:

- Motivation level was in total (24.58%) mentioned most often as well as individually by both the coaches (20.86%) and athletes (28.05%).
- The coping skills (13,9%), confidence maintenance (12,36%), cognitive skills (12.27%) and discipline and goal-directedness (10.33%) were mentioned almost equally.
- Competitiveness (7.86%), possession of prerequisite physical and mental requirements (6.66%), team unity (4.24%), preparation skills (3.35%) and psychological hardiness (3.18%) were again mentioned almost equally.
- Religious convictions (1.1%) and ethics (0.18%) were mentioned the least.

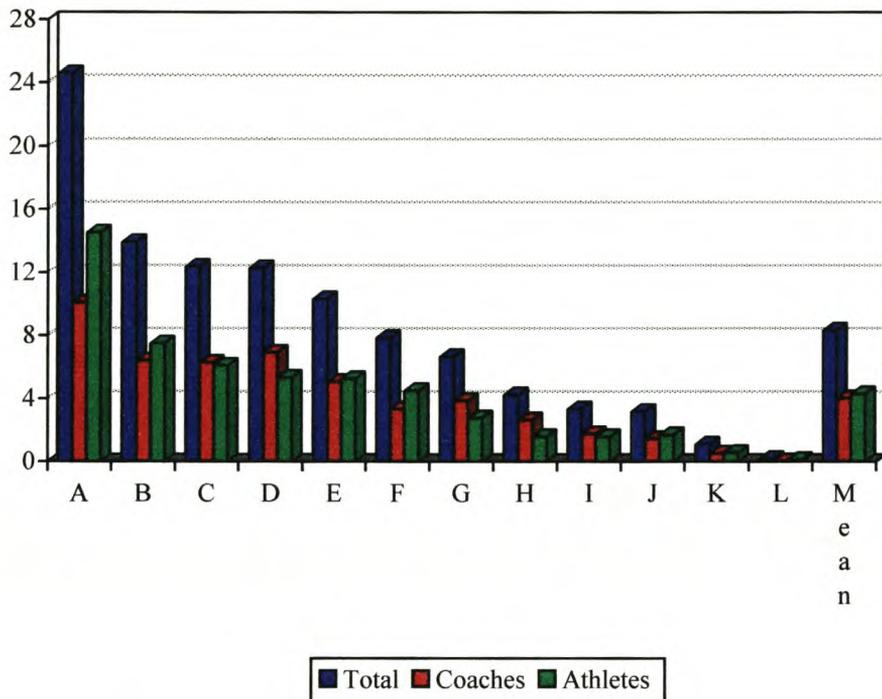
Refer to Table 6.1 for the frequencies and percentages of the identified themes. Note that the coaches' and athletes' individual frequencies and percentages are also tabled. The reader is reminded that the percentages in Table 6.1 are computed from the number of statements in total, while those of the coaches and the athletes are computed individually from their number of statements.

Table 6.1: Percentage and number of statements as distributed within each mental toughness theme and by the coaches and athletes individually

Subjects	Total		Coaches		Athletes	
	Number of statements <i>f</i>	%	1093 <i>f</i>	%	1173 <i>f</i>	%
Highest order themes						
A. Motivation level	557	24.58	228	20.86	329	28.05
B. Coping skills	315	13.90	145	13.27	170	14.49
C. Confidence maintenance	280	12.36	142	12.99	138	11.76
D. Cognitive skills	278	12.27	157	14.36	121	10.32
E. Discipline and goal-directedness	234	10.33	115	10.52	119	10.14
F. Competitiveness	178	7.86	76	6.95	102	8.70
G. Possession of prerequisite physical and mental requirements	151	6.70	88	8.10	63	5.37
H. Team unity	96	4.24	60	5.49	36	3.07
I. Preparation skills	76	3.35	40	3.66	36	3.07
J. Psychological hardiness	72	3.18	33	3.02	39	3.33
K. Religious convictions	25	1.10	12	1.10	13	1.11
L. Ethics	4	0.18	1	0.10	3	0.26
<i>Mean</i>	<i>188</i>	<i>8.33</i>	<i>91</i>	<i>8.33</i>	<i>97.75</i>	<i>8.33</i>

Contribution to identified theme

Figure 6.1 displays the percentages of the coaches' and athletes' contribution to the total number of statements. The coaches and athletes contributed almost equally to all themes, except for the motivation level theme, where the athletes contributed almost 4,5% more than the coaches.



<u>Note</u>	A. Motivation level: B. Coping skills: C. Confidence maintenance: D. Cognitive skill: E. Discipline and goal-directedness: F. Competitiveness: G. Possession of prerequisite physical and mental requirements: H. Team unity: I. Preparation skills: J. Psychological hardiness: K. Religious convictions: L. Ethics: Mean:	(10.1%) (14.52%) (6.4%) (7.5%) (6.27%) (6.09%) (6.93%) (5.34%) (5.08%) (5.25%) (3.35%) (4.5%) (3.88%) (2.78%) (2.65%) (1.59%) (1.77%) (1.59%) (1.46%) (1.72%) (0.53%) (0.57%) (0.04%) (0.13%) (4.04%) (4.3%)
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Figure 6.1: The contribution in percentage of the coaches and athletes to each highest order theme in total

In Table 6.2 the coaches' and athletes' raw score contribution to each identified theme, is depicted in percentage. In this table the coaches and athletes contributed almost equally to the themes that were identified (see averages). The coaches contributed more to the following characteristics: team unity, possession of the prerequisite physical and mental requirements, cognitive skill and preparation skills. The largest contribution was to the team unity theme (62.5%). The athletes contributed most to the ethics theme (75%), but this theme was only mentioned four times in total (refer to Table 6.1). Therefore, the next highest difference (18%) between the coaches (41%) and athletes (59%) contribution, is that of motivation level. Both the athletes and the coaches contributed almost evenly to the confidence maintenance theme and that of discipline and goal-directedness. The reader is reminded that these percentages represent the contribution to the single theme and not the themes importance to mental toughness.

Table 6.2: Contributed percentage of the coaches' and athletes' statements to each identified theme

Identified themes	Coaches %	Athletes %
A. Motivation level	41	<u>59</u>
B. Coping skills	46	<u>54</u>
C. Confidence maintenance	<u>50.7</u>	49.3
D. Cognitive skill	<u>56.5</u>	43.5
E. Discipline and goal-directedness	49.1	<u>50.9</u>
F. Competitiveness	42.7	<u>57.3</u>
G. Possession of prerequisite physical and mental requirements	<u>58.3</u>	41.7
H. Team unity	<u>62.5</u>	37.5
I. Preparation skills	<u>52.6</u>	47.4
J. Psychological hardiness	45.8	<u>54.2</u>
K. Religious convictions	48	<u>52</u>
L. Ethics	25	<u>75</u>
<i>Mean</i>	48.2	<u>51.8</u>

Note. The underlined percentages indicate the highest contribution within a certain theme.

Ranked characteristics

The coaches and athletes were asked to rank their identified characteristics of mental toughness. Table 6.3 lists the 10 highest ranked characteristics as rated by the coaches and athletes individually. The percentage, with which each characteristic was mentioned, is computed by taking into account the number of subjects in the group of coaches and athletes respectively. The characteristic ranked highest by the coaches is concentration (25%), but this characteristic was only ranked highest by 13% of the athletes. Perseverance was ranked highest by 27% of the athletes, but by only 22% of the coaches.

Table 6.3: Coaches' and athletes' 10 most important ranked characteristics

Characteristics	<i>f</i>	%	Characteristics	<i>f</i>	%
Coaches (n=131)			Athletes (n=160)		
1. concentration	33	25.2	1. perseverance	43	26.9
2. focus	31	23.7	2. determination/determined	41	25.6
3. perseverance	29	22.1	3. disciplined (during practice and games)	32	20
4. determination	26	19.8	4. motivation/motivated (positively)	31	19.4
5. discipline	23	17.6	5. focus/focused	28	17.5
6. self confidence	22	16.8	6. commitment/committed	26	16.3
7. dedication	20	15.3	7. confidence/confident	24	15
8. confidence	18	13.7	8. self-confidence	23	14.4
8. motivation	18	13.7	9. dedication/dedicated	22	13.8
9. self belief	15	11.5	9. goal orientated/directed	22	13.8
10. will to win	14	10.7	10. concentration	21	13.1

When the coaches' and athletes' frequencies are combined the highest ranked characteristic is perseverance, with 25% of the total combined sample (see Table 6.4). Appendix X lists those characteristics that were mentioned as characteristics of mental toughness, by both the coaches and athletes, with their respective frequency and percentage included.

Table 6.4: Coaches' and athletes' combined ranked most important characteristics

Characteristic	<i>f</i>	%
Perseverance	72	24.7%
Determination	67	23%
Focus/focused	59	20.3%
Discipline	55	18.9%
Concentration	54	18.6%
Motivation/motivated	49	16.8%
Self-confidence	45	15.5%
Confidence	42	14.4%
Dedication/dedicated	42	14.4%

Effectiveness in strengthening mental toughness

The last part of the questionnaire asks the coaches and athletes to determine how effective they would judge a coach and sport psychologist respectively in the strengthening of an athlete's mental toughness. Table 6.5 presents the descriptive statistics of the coaches' and athletes' rating of both a coach and sport psychologist respectively. To determine whether or not any significant differences at an α level of 0.05 existed, four different two tailed t-tests were performed.

Firstly, the coaches' ratings of a coach and sport psychologist were tested for significance. Although the rating by the coaches of the sport psychologist seems higher than that of a coach, no significant difference could be found $t = -1.36$ and $t_{0.05} (257df) = 1.96, p > 0.05$.

Secondly the athletes' ratings of a coach and sport psychologist were tested for significance. Although the rating by the athletes of the sport psychologist seems higher than that of a coach, no significant difference could be found $t = -3.515$ and $t_{0.05} (317df) = 1.96, p > 0.05$.

Thirdly, a coach's rating by the coaches and athletes was tested for significance. A significant difference could be found $t = 4.931$ and $t_{0.05} (289df) = 1.96, p < 0.05$. The coaches judged a coach to be more effective in strengthening the characteristics of mental toughness than the athletes did.

Lastly, a sport psychologist's rating by the coaches and athletes was tested for significance. A significant difference could be found $t = 2.686$ and $t_{0.05} (289df) = 1.96, p < 0.05$. The athletes judged

the effectiveness of a sport psychologist in the strengthening of mental toughness, lower than what the coaches did.

Table 6.5: Descriptive statistics of the coaches' and athletes' rating of a coach and sport psychologist respectively

Subjects	<i>M</i>	<i>SE</i>	<i>SD</i>	<i>s</i> ²	ΣX	<i>N</i>
Coaches						
Coach's rating	7.74	0.144	1.65	2.713	1014	131
Sport psychologist's rating	8.03	0.161	1.85	3.408	1052.5	131
Athletes						
Coach's rating	6.77	0.135	1.7	2.899	1082.5	160
Sport psychologist's rating	7.46	0.143	1.81	3.278	1193	160

It is interesting that no significant differences could be found in the ratings by the coaches and athletes individually, of a coach or a sport psychologist. This probably shows that within their groups, the coaches and athletes are aware that both a coach and sport psychologist are able to strengthen the characteristics of mental toughness. Interesting is that when the coaches' and athletes' rating of a coach and sport psychologist are compared, the coaches find both a coach and sport psychologist to be more effective than the athletes do. This is probably due to the fact that the coaches have more experience in, knowledge of and exposure to the expertise of both coaches and sport psychologists alike.

DISCUSSION

The motivation level theme is regarded as the most important identified theme from the content analysis of the coaches' and athletes' combined statements. Individually the coaches and athletes also

regard motivation level as most important. The coaches made the biggest contribution to the team unity theme and the athletes to the motivation level theme. When the coaches and athletes were asked to rank their individual characteristics of mental toughness, concentration was highlighted by the coaches and perseverance by the athletes. The coaches regard a coach and a sport psychologist to be more effective in strengthening mental toughness, than the athletes do.

CONCLUSION

The coaches and athletes were quite varied in their description of the characteristics of mental toughness. It can, however, be concluded that an athlete's motivation is very important to both coaches and athletes when mental toughness is exhibited. The coaches regard team unity as an essential characteristic in mental toughness. Finally, much research still has to be done in order to finalise a working definition of mental toughness in modern sports.

CHAPTER SEVEN

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

In this last chapter a general discussion of the findings, conclusions and recommendations for future research will be given. The problems experienced with and possible shortcomings of the study will be highlighted.

DISCUSSION

The purpose of this study was to identify the components of mental toughness as reported in the sport psychology literature and by coaches and athletes. Employing a qualitative method of data analysis identified the components. This method enabled the researcher to identify themes from the sources of information. The study also attempted to determine the effectiveness of a coach or sport psychologist in strengthening the characteristics of mental toughness. Here the coaches and athletes were asked to judge a coach's or sport psychologist's effectiveness.

Findings

From the literature review eight themes were identified via an inductive content analysis. These included: motivation level, arousal control, confidence maintenance, cognitive skill, competitive behaviour, planning skills, emotional readiness and team cohesion.

The coaches' and athletes' statements were also analysed using an inductive content analysis process. The twelve themes identified from this process 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 hardness, religious convictions and ethics.

With reference to the effectiveness of a coach or sport psychologist in strengthening mental toughness, the following was found: coaches regard both a coach and sport psychologist as significantly more effective than athletes do. Within the coaches' average rating of a coach or sport psychologist, no significant difference could be found. This was true of the athletes' average ratings as well.

Conclusions

It was concluded that the themes from the literature and the themes provided by the coaches and athletes displayed some similarities. It can thus be concluded from the results of this study that a definition of mental toughness should include the following components:

- Motivation level
- Coping skills that include arousal control strategies
- Confidence maintenance that includes discipline and goal-directedness
- Cognitive skill
- Competitive behaviours that include competitiveness and possession of prerequisite physical and mental requirements
- Planning and preparation skills
- Psychological hardiness that includes emotional readiness
- Religious convictions and ethics

In team sports an additional component should be included, namely:

- Team cohesion and unity

Problems and shortcomings

The problems that were encountered were mostly of an administrative nature. They were the following:

- A postal strike necessitated that all requests to federations be re-sent via fax.
- Network repairs to the Internet necessitated frequent re-sendings of requests and questionnaires.
- The questionnaires answered in Afrikaans had to be translated into English to simplify the analysis process.

The shortcoming of this study could include the following:

- The dearth of literature studies dealing specifically with the subject of mental toughness.
- The usage of coaches and athletes from a wide variety of sport disciplines probably influence the validity, reliability and generalisability of these results to specific sports.
- The translations may have caused a change in meaning and thus of theme content.

Recommendations

In future studies on mental toughness, the researcher should ensure personal contact with the subjects of his/her study. This will enable the researcher to verify the meaning of certain statements, especially if the responses of the subjects are in more than one language.

Future studies on mental toughness should focus on studying specific sports and the identification of the components of mental toughness that are relevant to that sport. The co-operation of the controlling body of a specific sport should be secured in order to ensure a high response rate from expert coaches and elite athletes.

Once the components of mental toughness have been determined, the characteristics of mental toughness should be studied from the perspective of:

- coaches and athletes within a specific sport
- sportsmen/women in various sport disciplines (e.g. contact, team, individual)
- coaches in various sport disciplines (e.g. contact, team, individual)
- individual differences within the same sport discipline
- athletes at different levels of participation within the same sport discipline
- different ages groups within the same sport.

The above-mentioned comparisons will establish the validity and reliability of the components of mental toughness and as such enable researchers to develop questionnaires that can measure an athlete's mental toughness within any sport domain. This will also aid the development of mental toughness maintenance programmes within each sport discipline and for each individual athlete. Ultimately, the research on mental toughness should be so extensive that sport psychologists will be able to test and measure a beginner's mental toughness and then develop a programme that will enable him/her to realise his/her potential.

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APPENDIX A

QUESTIONNAIRE FOR COACHES (English Version)

Dear Sports Coach

I would very much appreciate your co-operation in completing this questionnaire, which is part of a Master's thesis in Sport Psychology at the University of Stellenbosch.

The purpose is to establish what characteristics a sports coach would expect a sportsman/woman with mental toughness to display.

Some biographical information is required, but your identity and responses will be kept in the strictest confidence. The information will be used purely for research purposes.

I enclose a stamped and addressed envelope for the completed questionnaire.

Your co-operation is much appreciated.

Sincerely

Sansonette Fourie

Name (Optional):

Gender: Age:

Which sport do you coach? Mention only one.

How long have you been coaching this sport?

What is the highest level you have coached?

What, in your opinion, are the characteristics a sportsman/woman with **mental toughness** would display?

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Which of the characteristics that you have listed do you consider the most important? Only write down the corresponding number on you list in the appropriate blocks.

- Most important
- Second most important
- Third most important

To what extent can a **coach** strengthen these characteristics in a sportsman/woman? Circle the number that represents you opinion on the scale below.

Not at all 1 2 3 4 5 6 7 8 9 10 To a great extent

To what extent can a **sport psychologist** strengthen these characteristics in a sportsman/woman?

Not at all 1 2 3 4 5 6 7 8 9 10 To a great extent

Thank you

QUESTIONNAIRE FOR COACHES (Afrikaans Version)

Geagte sportafriqter

Ek sal u samewerking met die voltooiing van hierdie vraelys, wat deel is van `n Magistertesis in Sportsielkunde aan die Universiteit van Stellenbosch, hoog op prys stel.

Die doel is om vas te stel watter kenmerke u as afriqter verwag `n sportman/vrou met sielkundige taaigheid sal toon.

Ek verlang ook sekere biografiese inligting, maar u identiteit and response sal streng vertroulik hanteer word. Die inligting sal slegs vir navorsings doeleindes gebruik word.

Ek sluit `n koevert vir u voltooide vraelys in.

U samewerking word waardeer.

Vriendelik die uwe

Sansonette Fourie

Naam (Opsioneel):

Geslag:Ouderdom:

Watter sport rig u af? Noem slegs een sport.

Hoe lank rig u al hierdie sport af?

Wat is die hoogste vlak wat u al afgerig het?

Wat, in u opinie, is die eienskappe wat `n sportman/vrou met **sielkundige taaigheid** toon?

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Watter van die eienskappe wat u genoem het, beskou u as die belangrikste? Skryf slegs die relevante nommer van die eienskap wat u gelys het in die toepaslike blokkie.

- Belangrikste
- Tweede belangrikste
- Derde belangrikste

In welke mate kan `n **afriqter** hierdie eienskappe by `n sportman/vrou versterk? Omsirkel die nommer wat u mening verteenwoordig op die onderstaande skaal.

Glad 1 2 3 4 5 6 7 8 9 10 Tot `n
nie groot mate

In welke mate kan `n **sportsielkundige** hierdie eienskappe by `n sportman/vrou versterk?

Glad 1 2 3 4 5 6 7 8 9 10 Tot `n
nie groot mate

Baie dankie

APPENDIX B

QUESTIONNAIRE FOR ATHLETES (English Version)

Dear Sportsman/woman

I would very much appreciate your co-operation in completing this questionnaire, which is part of a Master's thesis in Sport Psychology at the University of Stellenbosch.

Sports commentators often mention the mental toughness of an athlete or team. But, what is this mental toughness?

I would like you to name the characteristics that a sportsman/woman with mental toughness will display.

Some biographical information is also required, but your identity and responses will be kept in the strictest confidence. The information will be used purely for research purposes.

Your co-operation is much appreciated.

Sincerely

Sansonette Fourie

Name (Optional):

Gender: Age:

In which sport do you participate? Mention only one.

What is the highest level you have participated at?

What, in your opinion, are the characteristics a sportsman/woman with **mental toughness** would display?

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Which of the characteristics that you have listed do you consider the most important? Only write down the corresponding number on you list in the appropriate blocks.

- Most important
- Second most important
- Third most important

To what extent can a **coach** strengthen these characteristics in a sportsman/woman? Circle the number that represents you opinion on the scale below.

Not at all 1 2 3 4 5 6 7 8 9 10 To a great extent

To what extent can a **sport psychologist** strengthen these characteristics in a sportsman/woman?

Not at all 1 2 3 4 5 6 7 8 9 10 To a great extent

Thank you

QUESTIONNAIRE FOR ATHLETES (Afrikaans Version)

Beste Sportman/vrou

Ek sal u samewerking met die voltooiing van hierdie vraelys, wat deel is van 'n Magistertesis in Sportsielkunde aan die Universiteit van Stellenbosch, hoog op prys stel.

Daar word gereeld gehoor dat sport kommentators, die sielkundige taaigheid van die atleet of span noem. Maar wat is hierdie sielkundige taaigheid?

Ek sal dit waardeer indien jy die eienskappe van 'n sportman/vrou met sielkundige taaigheid vir my sal identifiseer.

Ek verlang ook sekere biografiese inligting, maar u identiteit and response sal streng vertroulik hanteer word. Die inligting sal slegs vir navorsings doeleindes gebruik word.

U samewerking word waardeer.

Vriendelik die uwe

Sansonette Fourie

Naam (Opsioneel):

Geslag:Ouderdom:

Watter sport neem u aan deel? Noem slegs een sport.

Wat is die hoogste vlak waaraan u al deelgeneem het?

Wat, in u opinie, is die eienskappe wat 'n sportman/vrou met **sielkundige taaigheid** toon?

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Watter van die eienskappe wat u genoem het, beskou u as die belangrikste? Skryf slegs die relevante nommer van die eienskap wat u gelys het in die toepaslike blokkie.

- Belangrikste
- Tweede belangrikste
- Derde belangrikste

In welke mate kan 'n **afriqter** hierdie eienskappe by 'n sportman/vrou versterk? Omsirkel die nommer wat u mening verteenwoordig op die onderstaande skaal.

Glad 1 2 3 4 5 6 7 8 9 10 Tot 'n
nie groot mate

In welke mate kan 'n **sportsielkundige** hierdie eienskappe by 'n sportman/vrou versterk?

Glad 1 2 3 4 5 6 7 8 9 10 Tot 'n
nie groot mate

Baie dankie

APPENDIX C

MOTIVATION LEVEL

Motivation (7)

Dynamism

- *High positive intensity*
- *Intensity*

Willingness to sacrifice for success

- *Defines success in terms of performance factors and not on outcomes*
- *Willing to make the necessary sacrifices in order to succeed*

Enthusiasm

- *Eager to perform well*
- *Positively engaged, mobilised, and moving forward*

Self-investment

- *Overall level of investment in the activity itself (e.g. time, effort, money)*
-

Determination (3)

Risk-taking behaviour

- *Willing to take risks*
- *Risk everything he has in order to reach higher standards*

Achievement orientated

- *Wants to reach his potential*
- *Strong desire to succeed*

Keeps going

- *Keeps on trying*
 - *He will not give up*
 - *He does not quit*
 - *Philosophy: There is no such word as can't*
 - *Never gives in and never gives up*
 - *Philosophy: If it is not possible this way, there must be another way.*
-

Commitment (6)

Dedication

- *Dedicates himself fully to the training and competition program*
- *Dedicated to achievement*

Desire

- *Desire to test his physical and mental limits*
- *Desire to pursue some level of excellence*
- *Desire to develop some new skills and competencies*

Discipline

- *Does not require a lot of encouragement to be effective*
- *Self-disciplined*
- *Disciplined*

Effort

- *Does more training*
- *Puts himself 100% on the line*
- *Gives everything he has to give for the duration of practise as well as playing*

Commitment

- *Make a commitment to fight*
 - *Committed to mastering their goals*
 - *High commitment with a balanced attitude*
 - *Developing a strong commitment and strategy for change*
-

Goal-directedness

Purposefulness

- *Sporting career has an obvious direction*
- *Training programme has a real sense of purpose*
- *Each training session has a specific purpose*

Goals control

- *Goals are under control*
- *Targets his ultimate achievement*
- *Sets up a detailed goal setting program in consultation with coach*

Self-challenge

- *Sets more challenging goals*
- *Set of task/mastery goals*
- *Become challenged*

Goal-orientation

- *Commitment to goals*
 - *Belief in goals*
 - *States desire to set and achieve goals*
-

Control

IPS control

- *IPS can be controlled*
- *Ability to use body to control ideal performance state*
- *IPS control*
- *IPS established early on and nurtured from parents*

Self-restraint

- *Totally in control*
- *In control in spite of obstacles and crisis conditions*

Negativity control

- *Make every effort to restrain negative feeling during competition*
- *Wins the contest with his internal thoughts, emotions and external reactions*
- *Control over negative energy*

Control maintenance

- *Puts him back in control*
 - *Control the controllables*
 - *In control by setting mastery goals*
-

APPENDIX D

AROUSAL CONTROL

Calmness and relaxation

Calmness

- *Calm and relaxed under fire*
- *Composed and calm*
- *Profound sense of calmness and confidence*
- *Mental calmness*
- *Keep the athletes calm when things get tough*

Regulation off and dealing with stress

- *Ability to deal with stress and adversity*
- *Able to regulate stress and recover from stress*
- *Refined recovery from stress routine during practise and between competition*
- *Parents refuse to stress winning and punish losing*

Relaxation

- *An element of relaxedness*
- *Physical relaxation*
- *Relaxation/relaxed*

Breath control

- *Relax between points by listening to his breathing*
- *Breathing patterns*
- *Learn to breathe in when the ball is approaching and breathe out at the point of contact*
- *Causes upper body tension to be released through exhalation*

Activation control

- *Low anxiety*
- *Anxiety reduction*
- *Arousal control*

Coping ability

Ability to control thinking during misfortune

- *Disciplined in the way that he thinks about mistakes*
- *Views crisis as an opportunity to grow*
- *Thinks humorously to break up negative emotions*

Resilience

- *Recovers from setbacks, errors and missed opportunities*
- *Manages mistakes*
- *Ability to welcome and not avoid competitive pressure*
- *Capacity endure great physical, mental and emotional stress*
- *Has increased resistance to stress*
- *Ability to deal with physical, mental or emotional stress*
- *Resilient*
- *Cope with crisis and misfortune*
- *Be satisfied with his efforts*

Positiveness during adversity

- *Stays positive in the face of challenge and pressure*
- *Believes that he is in control*
- *Ensures that he continues to stay positive and practical during difficult and frustrating times*
- *Deals with problems in a confident and controlled manner*
- *Drive and enjoyment level will stay high despite unfavourable conditions*
- *Loves the process, contest, deploying of resources, pushing, falling back, breakthroughs, struggles*

Internal locus of control

- *He will not turn against himself when things get tough*
- *Rarely becomes upset when he loses, plays badly, or is spoken to harshly*
- *Does not expect that things will run smoothly during the competition*
- *Does not worry about bad weather, inferior equipment or the opposition's experience*
- *Insensitive to the feelings and problems of others*

Ability to be challenged by misfortune

- *Not complain*
- *Stops making excuses*
- *Ability to keep going when hurting and dealing with pain*
- *Almost insensitive to criticism*
- *Respond to negative messages in appropriate ways*
- *Uses adversity to get stronger*
- *Finds humour in mistakes*
- *Responds to a critical situation by playing his best*
- *Responds to crisis, adversity, and strain with a sense of challenge and love of the battle*

Composure control

- *Ignores failure and continues to perform*
- *Does not dwell on past mistakes*
- *Intentionally decides to let it go*
- *Frustrations and hassles are left behind*
- *Turns away, forgets, and steadies himself, after making a bad shot*
- *Ability to refocus and make a strong comeback after a disappointment*

Emotional maturity

Emotional responsiveness (2)

- *Cope emotionally with inaccuracy and failures*
- *Emotional response*
- *Ability to remain emotionally vital, engaged, and coherent under pressure*
- *Emotions are responsive*
- *Even-tempered*

Emotional strength (2)

- *Maintains an effective fighting spirit against impossible odds*
- *In control of their emotions*
- *Take charge of their emotions*
- *Ability to exert and endure vital force emotionally under pressure*

Emotional resilience (3)

- *Bounce back ready to resume the battle*
- *Quick emotional recovery*
- *Ability to take some strain emotionally and then return to equilibrium quickly*

Emotionally flexibility (2)

- *Promptly alter their emotional state from a negative to a positive one*
- *Ability to call on a wide range of positive emotions, like fun, joy, fighting spirit, humour*
- *Ability to handle sudden emotional change by staying adaptable, non-defensive, and poised*
- *Emotional depth, adaptability*

Experience of empowering emotions

- *Emotions run the show*
 - *Effortlessly access empowering emotions during competition*
 - *Ability to consistently access empowering emotions during competition*
 - *Enabling emotions*
-

APPENDIX E

CONFIDENCE MAINTENANCE

Self-confidence

Sustained confidence

- *Highly confident (3)*
- *Confident he will perform to his best*
- *Looks confident even when his inner voice is chasticizing him*
- *Stand tall and project an air of confidence*

Liking, acceptance and respect for self

- *Like, accept and respect yourself*
- *He has to like, accept, and respect himself*
- *Parental support and encouragement*
- *Mature*

Belief in self and abilities

- *High level of self-belief (2)*
- *Believes that his ability can meet the challenge of the situation*
- *Develop a realistic and positive belief in his ability*
- *Believes that he has the capability to perform well under the most challenging situations*
- *Skilled in believing*

Strong self-esteem

- *Sense of accomplishment*
- *Sense of self-worth*
- *Self-assured*
- *Strong and stable level of self-esteem*
- *Low self-doubt*

Positive and realistic expectation

Optimism

- *Optimism/optimistic*

Enjoyment

- *Level of enjoyment*

Positive realism

- *Realistic*
- *Positive but realistic*

High expectation

- *High expectation of success*
-

APPENDIX F

COGNITIVE SKILL

Concentration ability

Concentration control

- *Ensure that concentration is held*
- *Ability to increase concentration*
- *Able to control attention during difficult times*

Concentration focus

- *Attached to surroundings and self*
 - *Concentrate at the task at hand – performance*
 - *Strive to become wrapped up in the activity*
 - *Mentally alert*
-

Thinking ability

Positive thinking

- *Thoughts are funny, silly or off the wall*
- *Thinks “fun”: more positive energy flows*
- *Thinks more energetically*
- *Continually practises positive thinking*
- *Positive thinking which leads to positive results*

Thought control

- *Thinks like a winner*
- *Disciplined thinking*
- *The mental factor*
- *Continue to think productively, non-defensively, positively and realistically under pressure, with composed clarity*
- *Skills in thinking*

Tough thinking

- *Tough thinking (2)*
- *Thinks thoughts in clear emotional terms*
- *Realises that he has considerable influence over the direction and content of his thoughts*

Thought alteration

- *Use positive brainwashing to stop negative thoughts*
 - *Brainwash himself to change negative statement into a positive one*
 - *Change his thinking in order to change the way he feels*
 - *Change negative thoughts into empowering thoughts through tough thinking*
-

Analyse ability

Amenability

- *Receives regular feedback*
- *Welcomes peer analysis*
- *Effective communication channels*

Ability to analyse performance and tactics

- *Analysis his performance*
- *Clear about why it is essential to fight before the contest begins*

Ability to analyse weaknesses and mistakes

- *Good at problem solving*
 - *Identify those mental habits, which affect performance negatively*
 - *Gains a clear understanding of his weaknesses*
 - *Ask himself what he could have done differently*
 - *Asks himself what he can learn from mistakes*
-

Focus ability

Ability to focus during misfortune

- *Compose and focus himself*
- *Focus his attention outside himself during critical moments of execution*
- *Positive and focused despite distractions and disappointments*
- *Able to focus on not playing his favourite shot under pressure*
- *Able to focus on his weakest links*

Ability to focus on the present

- *Learn to keep a here-and-now focus during competition*
- *Maintain a moment-by-moment focus: easier expression of talent and skill*

Task focussed

- *Remains focused on his goal*
- *Totally focused, mentally and physically, on the sport performance*
- *Focus on one object during shots*

Ability to focus on controllables

- *Focusing on controllables*
 - *Focus on things that they can do something about*
-

APPENDIX G

COMPETITIVE BEHAVIOUR

Overt competitive behaviour

Stroke production

- *Stroke production*
- *Hit the ball reasonably well when nervous or angry*

Confident presence

- *Racquet up*
- *Tells his opponent that he is up and ready for anything and still feeling confident*
- *Look courageous, fresh, confident, challenged*
- *Project a strong powerful presence during competition, especially during crisis*
- *Confident image*
- *Project and image that he loves competition and he is going to try his best the whole time*
- *Should look the way he wants to feel*
- *The way he looks while he is playing*
- *Positive body language*
- *Strong in body language*
- *Send out the signals and image of a winner*
- *Signals displays a confident and tough image, which in turn make it easier to feel positive and ensure a positive attitude*

Acting skills

- *Tough acting (2)*
- *Acting in a predetermined way*
- *Skilled at acting*

Strategy and style

- *Strategy*
- *Style of play*
- *Courage to play aggressively but still accurately*
- *Puts more pressure on his opponent*
- *Courage*
- *Hits a good shot that forces his opponent to hit a great one*

Ability to pace self

- *Pacing*
- *Learns to play to his limitations*
- *Try not to waver from his pace*
- *Determine the pace of the game where he feels comfortable*

Rituals

- *Rituals*
- *Careful, almost methodical ritual should be followed before play starts*

Eye control

- *Eye control*

Real and Performer Self control

- *Highly developed Performer Self*

- *Able to move skilfully from the Real Self to the Performer Self*
 - *Ability to transform himself from the Real Self to the Performer Self on demand*
 - *Flexible, responsive, strong, and resilient Real Self combined with highly skilled Performer Self*
-

Covert competitive behaviour

Positive self-talk

- *Satisfaction with his investment in an activity*
- *Anticipates next point in his mind*
- *Does not place too much pressure on himself*
- *Constantly reminds himself to love the battles*
- *Strive to achieve athletic grace*
- *Feels tough*
- *Talks to himself positively*
- *Eliminate self-talk*

Competitiveness

- *Alert and compassionate*
- *More patience during competition*
- *Competitive*
- *Assertive*
- *Need to survive*
- *Achieves the challenge response*
- *Come completely willing and able to compete everyday*
- *Aggressive*

Loves competition

- *Invigorated with positive emotion*
- *The absurd it gets the more he will love it*
- *Will love competing more than being victorious*

Management of negative responses

- *Show decreased moodiness during competition*
- *Will not show weakness to his opponents*
- *Shows a reduced occurrence of temper, anger, or excuse making responses during play*
- *Does not let the opponent know that he has any doubt in his mind about the outcome of the contest*

Enjoyment

- *More enjoyment, better play*
 - *Enjoyment (2)*
 - *Willing to have an enjoyable time*
 - *Enters the arena feeling and thinking positively*
-

Performance control

Consistent performance

- *Consistently performs toward the upper range of his talent and skill during competition*
- *Ability to consistently perform toward the upper range of his talent and skill regardless of competitive circumstances*

- *All basic physical and emotional needs are met*
- *Performance does not suffer under conditions that place high physical and psychological demands on him*

Ideal performance state skills

- *Precision thinking and acting skills*
- *Knows his ideal performance state*
- *IPS is attained by getting tougher physically and mentally*
- *Seeks his own IPS*
- *Triggers an IPS when needed*

Zone experiences

- *Effortless*
 - *Automatic (2) and unconscious*
 - *Feelings of fun, positive fight, confidence and focus*
 - *Feelings of aggressiveness, enthusiasm and boldness*
-

Physical toughness

Physical preparation

- *Toughness is physical*
- *Physically well prepared real self*
- *Physical toughness*

Physical fitness

- *Physically fit/physical fitness*
- *Fitness*
- *Physical conditioning and appearance*
- *Mental toughness and physical fitness go hand in hand*

Ability to work hard

- *Works harder*
 - *Perfects his sport skills*
 - *Works under more difficult conditions than his opponents*
 - *Hard work*
 - *Wanting to work hard*
-

APPENDIX H

PLANNING SKILLS

Visualisation and imagery skills

Visualisation skill practise

- *Practise through the use of successive simulations*
- *Practise the correct mental habits through repetition*
- *Practise strategic visualisation constantly*

Ability to visualise success

- *Changes the picture in his mind, when he does not like the way he feels*
- *Access targeted emotions through images of success, fighting back, having fun, staying relaxed, being strong in the face of misfortune*
- *Strive to make his self-image powerful, realistic, and fearless through daily practise of such images*
- *Ensures that he experiences triumph and mastery mentally before he tests himself physically*
- *See, hear and feel himself defeating his weaknesses and achieving significant goals*

Well-developed visualisation skills

- *Ability to use words and images to control his ideal performance state*
 - *Understanding when, how, and what to think and visualise before, during and after competition to gain the required effect emotionally*
 - *Skilled in visualisation*
-

Preparation skills

Professional approach

- *Use the just for today approach to changing his habits*
- *An integrated approach*
- *Approach sport in a systematic and scientific way*
- *Professionalism*
- *Pro-active*
- *Makes things happen*

Thorough planning

- *Cover all contingencies*
- *Assures complete preparation and planning across a whole season*
- *Diet*
- *Organised*
- *Assures that his technical, physical and mental preparation is the best it can possibly be on the competition day*
- *Practising overload emotional training, leads to increased mental toughness*

Time management skills

- *Invests more time and energy*
 - *Puts in extra time on physical and mental preparation*
-

Responsibility (2)

Acceptance of responsibility

- *Takes full responsibility for what and how he thinks*
- *Takes responsibility for his own development*
- *Personal responsibility in delivering excellence*
- *Take responsibility for performance by focusing on yourself, performance and self-talk*

Responsible behaviour

- *Do the hard work*
 - *Self-reliant*
 - *Takes no unwanted risks*
 - *Does the best he can*
 - *Patient*
 - *Coachable*
-

Balanced lifestyle

Recuperation

- *Proper rest*
- *Makes burnout unlikely*
- *Make time to relax*
- *Takes time to enjoy the company of family and friends so that they can return feeling fresh and rejuvenated*

Maintenance of balance

- *Sport does not consume the athlete's life, so that all else loses meaning*
 - *Establishes the attractiveness of the best alternative to the activity*
 - *Social constraints to continue participating*
-

APPENDIX I

EMOTIONAL READINESS

Readiness

Challenge response

- *Challenged (3)*

Alertness

- *Alertness*
-

Energetic

Vivaciousness

- *Energy/energetic*

Positive energy

- *Positive energy*
- *Able to maintain high positive energy levels*

Readiness to compete

- *Highly energetic and ready for action*
 - *Come ready to play*
-

Acceptance

Acceptance of pain, criticism and inaccuracy

- *Has to endure more pain*
 - *Accepts strong criticism*
 - *Realises that inaccuracy is a part of learning*
-

Attitude

Positive attitude

- *Attitude control*
- *Come with a positive attitude*
- *Ready for fun and enjoyment*
- *Projects a positive attitude with appropriate body language*

Empowering attitude

- *Believes with all his conviction that the more intense the competition, the better*
 - *Has the right attitude regarding stress*
 - *Never think or say can't or hate*
-

Toughness

Complete toughness

- *Toughness is mental, physical and ultimately emotional*

Positive participation responses

- *Toughness minimises the chance of physical injuries and emotional setbacks*
- *Toughness minimises the possibility that a match will be lost through tanking, temper, or choking*

Skill, talent, and emotional control

- *Toughness is a learned skill*
 - *Learned capacity to display a unique emotional response during competition*
 - *Toughness is the will (power) to harness and use your skill*
 - *Toughness is a skill that enables you to bring your talent and skill into action, on demand*
-

APPENDIX J

TEAM COHESION

Team interest

Team building skills

- *Good at team playing*
- *Involvement opportunities afforded by continued participation*
- *Team building by planning team development, social activities, leadership and initiative opportunities*

Independence

- *Does not depend on the team for a sense of belonging*
- *Might involuntary adopt the role of the coach and start to criticise his team-mates for failing*

Team harmony and support

- *Willing to support each other*
 - *Fostering team harmony and cohesion*
 - *Strong feeling of team belonging is pertinent to the enjoyment, fun and success a player experiences*
-

APPENDIX K

MOTIVATION LEVEL (547)

Perseverance (161)

Perseverance during adversity (3)

- *ability to keep trying when all seems lost (1)*
- *completes event if he had a bad day (1)*
- *overcome any obstacle that comes his/her way (1)*

Motivation to persevere (3)

- *motivated till the end, regardless of fatigue (1)*
- *motivated to reach goals (1)*
- *motivation for high achievement (1)*

Courage (25)

- *bites the bullet (1)*
- *courage (10)*
- *heart (3)*
- *guts/intestinal fortitude(11)*

Steadfastness (19)

- *does not give up easily (14)*
- *does not give up till the match is over (1)*
- *never give up (4)*

Persistence (21)

- *hard work rather than talent (1)*
- *disposed to repetition (do routines over and over) (1)*
- *keep at it (1)*
- *persistence (15)*
- *keep going (1)*
- *keeps trying (2)*

Persistence when tired and hurting (7)

- *ability to carry on when tired (1)*
- *keeps going even when he cant anymore (when tired) (2)*
- *keeps going when injured or tired (1)*
- *continues to play during injury (1)*
- *pushes self when tired and hurting (1)*
- *continues to train when feeling low (1)*

Persistence till goal is reached (2)

- *keeps going till he reaches goals (1)*
- *persistence to pursue goal until obtained (1)*

Never-say-die attitude (6)

- *never-say-die attitude (2)*
- *never-say-die spirit (3)*
- *never admit defeat (1)*

Perseverance (75)

- *perseverance (72)*
 - *persevere under stress (1)*
 - *tenacity (2)*
-

Determination (160)

Determination after failure (16)

- *ability not to give up when at the back (1)*
- *able to stand up after having a bad game (1)*
- *attacks after a bad performance (1)*
- *can come from behind (1)*
- *does not give up, if others start well (1)*
- *come back from defeat (2)*
- *can stand up when he falls (1)*
- *does not lie down after failure (2)*
- *does not give up when faced with a setback (1)*
- *does not give up, always comes back (1)*
- *does not lose courage (2)*
- *not get down in the dumps after a bad race (1)*
- *resilience (1)*

Motivation through misfortune (5)

- *motivated by losses (1)*
- *use adrenaline to improve performance (1)*
- *does not get down-hearted by minor issues (1)*
- *use defeat to improve performance (1)*
- *motivated by pressure situations (1)*

Determination to achieve (46)

- *apply his/her will to win (1)*
- *will to succeed (3)*
- *will to win (23)*
- *will/hunger to succeed or win (6)*
- *determination to succeed (1)*
- *drive (8)*
- *hunger for success (3)*
- *determination to do his/her best (1)*

Determination to practise continuously (6)

- *bounces back when injured (1)*
- *continues to train even though he was not successful (1)*
- *prepared to work hard (1)*
- *determination to practise (1)*
- *cope with repetitions/ not get bored (1)*
- *tries to give 101%, 100% of the time (1)*

Determination to reach goals (7)

- *determination to achieve goals (2)*
- *determined to reach goals (1)*
- *failure is not an option temperament (1)*

- *determined when not reaching goals (1)*
- *determination to get it right (1)*
- *obsession to achieve (1)*

Fighting spirit (12)

- *fighter (1)*
- *fighting spirit (7)*
- *killer/fighter instinct (3)*
- *non-quitter (1)*

Determination (68)

- *determination/determined (67)*
 - *self-determination (1)*
-

Desire (118)

Ambitiousness (25)

- *ambition (7)*
- *ambition to improve (1)*
- *desire (14)*
- *high aspiration level (1)*
- *strive to be the best (1)*
- *strives to best achievement (1)*

Achievement orientation (12)

- *want to achieve (1)*
- *will to achieve (4)*
- *willing to learn (4)*
- *want to do well (1)*
- *want to win (1)*
- *hates losing (1)*

Improvement orientation (7)

- *must want to learn (1)*
- *desire to improve (2)*
- *prepared to improve (1)*
- *want to improve (1)*
- *will to improve (2)*

Challenge orientation (14)

- *challenges self to do more than coach expects (1)*
- *considers pressure as a challenge (1)*
- *turns hurdles into challenges (1)*
- *driven to win by challenges (1)*
- *embraces challenges (1)*
- *enjoys challenges (5)*
- *likes challenges (1)*
- *loves challenges (1)*
- *not afraid to challenge (1)*
- *sees opposition as challenge (1)*

Ability to use criticism to motivate self (4)

- *accepts comments as motivation (1)*
- *gets the best out of themselves (1)*
- *takes criticism as help to further performance (1)*
- *transform criticism into encouragement (1)*

Intrinsic motivation (56)

- *intrinsic motivation (4)*
 - *internal motive (1)*
 - *values intrinsic rewards more than extrinsic rewards (1)*
 - *psychological reward (1)*
 - *motivated/motivation (49)*
-

Responsibility (72)

Accountability (3)

- *does not blame others (1)*
- *does not make excuses for failure (1)*
- *does not make excuses or blames others for bad achievement (1)*

Self-criticism (2)

- *self-criticism (1)*
- *self-possession (1)*

Willingness to give everything (4)

- *100% at practise (1)*
- *willing to go extra mile (1)*
- *gives everything, goes flat-out (1)*
- *goes all the way (1)*

Dedication and devotion (44)

- *dedication/dedicated (42)*
- *devotion/devoted (2)*

Love and passion (13)

- *love for sports (2)*
- *obsessed (1)*
- *passion/love (10)*

Responsibility (6)

- *responsibility (1)*
 - *self-responsibility (2)*
 - *takes responsibility (2)*
 - *takes responsibility for their actions (1)*
-

Commitment (46)

Willingness to practise (4)

- *prepare to do more or extra (1)*
- *willing to practise hard (2)*
- *willingness to practise hard when not feeling great (1)*

Commitment (42)

- *commitment to never give up (1)*
 - *commitment to reach ideals (1)*
 - *commitment/ committed (39)*
 - *self-commitment (1)*
-

APPENDIX L

COPING SKILLS (316)

Coping ability (145)

Ability to cope with failure (14)

- *ability to adapt to and forget failure (1)*
- *able to cheer self up when he has failed (1)*
- *able to deal with failure (1)*
- *able to overcome loss (1)*
- *ability to bounce back when beaten (1)*
- *ability to handle negative achievements (1)*
- *handles failure (1)*
- *handles losing (2)*
- *handles losses (2)*
- *mentally strong: cope with failure (1)*
- *not scared of losing (1)*
- *works on mistakes when he loses (1)*

Ability to cope with disappointments (16)

- *ability to forget trouble (1)*
- *able to come back from any setback (1)*
- *ability to overcome disappointments (1)*
- *able to cope with disappointments (1)*
- *eliminates misfortune and goes on (1)*
- *cope with disappointments and setbacks (4)*
- *ability to accept adversity (1)*
- *forgets disappointments (1)*
- *handles disappointments well (1)*
- *handles setbacks (2)*
- *leaves disappointments behind and moves on (1)*
- *takes disappointment and makes something good (1)*

Ability to cope with pressure (28)

- *ability to cope under pressure (1)*
- *able to work under pressure (1)*
- *can lift performance when under pressure (1)*
- *control under pressure (4)*
- *control self-imposed pressure (1)*
- *controls pressure (1)*
- *cool under pressure (1)*
- *cope under enormous pressure (1)*
- *does not fold under pressure (2)*
- *good spirit under pressure (1)*
- *handles internal and external pressure (1)*
- *handles pressure (4)*
- *handles pressure easily (2)*
- *handles pressure with self-confidence (1)*
- *maintain game plan under pressure (1)*
- *play under pressure (1)*
- *stay in flow under pressure (1)*

- *strong under pressure (2)*
- *works well under pressure (1)*

Ability to cope with intimidation (33)

- *ability to blackout the competition and competitor intimidation (1)*
- *ability to intimidate (1)*
- *able to handle others and crowds (1)*
- *avoids that opponent has an influence over him (1)*
- *does not get psyched out by opponents (2)*
- *does not get ruffled when others play dirty (1)*
- *does not get affected by oppositions chirping (1)*
- *handles opposition well (1)*
- *intimidating (2)*
- *never gets intimidated easily (3)*
- *not bothered by other athletes (1)*
- *not distracted by other competitors (1)*
- *not easily influenced by opponents/ referee (1)*
- *not influenced/distracted by other people or conditions (1)*
- *not intimidated (5)*
- *not intimidated by big meeting (1)*
- *not intimidated by opponents (4)*
- *not negatively influenced by others/situations (1)*
- *not phased by opponents quirks (1)*
- *not put off by others (1)*
- *not swayed by other contenders (1)*
- *not thrown by others (1)*

Ability to cope with distractions (11)

- *ability to avoid any distractions (1)*
- *ability to ignore outside problems while the game is on (1)*
- *ability withstand distractions (1)*
- *does not get disturbed (1)*
- *does not get distracted if he had a bad day (1)*
- *does not let external influences affect him (2)*
- *eliminates problems from off the field when on the field (1)*
- *ignores distractions (1)*
- *not affected by hindrances (1)*
- *not get distracted or discouraged (1)*

Ability to cope with difficulties (11)

- *acknowledges weak point and faults (1)*
- *handles difficulties (1)*
- *handles unexpected difficulties (1)*
- *has experienced diversities (1)*
- *makes problems and difficulties challenges (1)*
- *not set back by minor fallbacks (1)*
- *ability to deal with averse conditions (1)*
- *ability to give best regardless of situation (1)*
- *calm in difficult situations (1)*
- *overcoming obstacles (1)*
- *play under unfavourable conditions (1)*

Ability to cope with poor form (4)

- *deal positively with poor form (1)*
- *manages mistakes in a constructive way (1)*
- *mentally overcome mistakes made in game (1)*
- *transform bad form into good form (1)*

Ability to cope with criticism (5)

- *able to handle criticism (1)*
- *able to take criticism where due (1)*
- *deals positively with constructive criticism (1)*
- *handles criticism (1)*
- *handles criticism well and positively (1)*

Ability to cope with stress (9)

- *allow for stress (1)*
- *cope well with stress (1)*
- *good stress management (1)*
- *handles stress (2)*
- *handles stress well (1)*
- *high stress tolerance (1)*
- *knows what to do in a crisis situation (1)*
- *stress management (1)*

Ability to cope with fear (10)

- *control over feelings (1)*
- *cope and deal with fear (1)*
- *ability to overcome fear (1)*
- *does not get frightened (1)*
- *able to use nervousness to enhance performance (1)*
- *ability not to panic (3)*
- *handles fears (2)*

Ability to cope with success and failure (5)

- *able to handle wins and losses (1)*
- *good loser and winner (1)*
- *handles disappointments and success (1)*
- *loses and wins well (1)*
- *way which handles success and disappointments (1)*

Composure (37)

Emotional reaction controls (13)

- *cool headed/level headed (2)*
- *does not easily get upset (3)*
- *does not complain (1)*
- *able to control bad temper (1)*
- *low in temper (1)*
- *never loses temper easily (1)*
- *does not throw tantrums (1)*
- *will not get flustered (1)*
- *no emotion (1)*

- *responds well in pressure situations (1)*

Ability to handle mistakes (4)

- *does not fall apart when making a mistake, tries harder (1)*
- *does not get angry over silly mistakes (1)*
- *does not get nervous over silly mistakes (1)*
- *does not get upset when he makes a mistake (1)*

Composure (20)

- *composure (8)*
 - *tolerance (3)*
 - *self-composure (1)*
 - *does not get angry with self (2)*
 - *ability to lose gracefully (2)*
 - *control (1)*
 - *mental control (1)*
 - *maintains codes of conduct (1)*
 - *humour (1)*
-

Acceptance (36)

Acceptance of criticism (7)

- *ability to accept criticism (2)*
- *accepts constructive criticism (2)*
- *accepts criticism and build on it (2)*
- *accepting the mark of judges (1)*

Acceptance of disappointments (3)

- *able to accept disappointment (1)*
- *accepts disappointment (2)*

Acceptance of mistakes (2)

- *acceptance of making mistakes (1)*
- *enjoys learning from a mistake (1)*

Acceptance of defeat and failure (14)

- *accepts defeat (2)*
- *accepts defeat/injury in good spirit (4)*
- *good loser (4)*
- *puts bad performances behind him (1)*
- *able to accept failure (1)*
- *accepts failure and bounces back (1)*
- *accepts failure and try again (1)*

Acceptance of challenges of training (5)

- *accepts challenges (2)*
- *acceptance of training (1)*
- *accepts no pain, no gain (1)*
- *accepts responsibility (1)*

Acceptance success and failure (3)

- *accepts success and failure (1)*
- *accepts triumph or defeat (1)*
- *only accepts perfection (1)*

Acceptance (2)

- *acceptance (1)*
 - *accepts situations as it is (1)*
-

Activation control (74)

Anxiety control (10)

- *ability to control anxiety (1)*
- *anxiety control (1)*
- *anxiety level less (1)*
- *anxiousness (1)*
- *high anxiety stress levels (1)*
- *low personality anxiety (1)*
- *not allow adrenaline to cause too much anxiety (1)*
- *low anxiety levels (2)*
- *stress and anxiety tolerance (1)*

Arousal control (3)

- *arousal (1)*
- *able to control arousal level (1)*
- *arousal level differs from each item (1)*

Calmness (39)

- *ability to keep calm (1)*
- *stay/act calm/calmness (4)*
- *generally calm (14)*
- *calm in difficult situations (4)*
- *outwardly calm even when nervous (1)*
- *remains calm (3)*
- *stays calm under pressure (2)*
- *calm under pressure (8)*
- *calmness (1)*
- *inner calm (1)*

Cool headed (4)

- *cool and calm (1)*
- *cool/aloof (1)*
- *cool head (1)*
- *can keep his/her head in difficult situations (1)*

Relaxation ability (18)

- *not scared (2)*
- *ability to remain relaxed during competition (1)*
- *can relax through other activities (1)*
- *relaxation (8)*
- *relaxation exercises (1)*

- *relaxed (4)*
 - *stays relaxed and focused under pressure (1)*
-

Adaptability (23)

Adaptability to conditions (19)

- *adaptability (14)*
- *able to play and achieve anywhere (home and away) (1)*
- *adapts well to different surfaces, opponents, etc. (2)*
- *able to perform despite terrible conditions (1)*
- *cope well with the unexpected (1)*

Adaptability to change (4)

- *overlooks problems with coach./players and goes on (1)*
 - *sense of humour (1)*
 - *willingness to listen and accept change (1)*
 - *ability to adapt to weather (1)*
-

APPENDIX M

CONFIDENCE MAINTENANCE (283)

Competence (33)

Achievement (5)

- *achievement (1)*
- *love for achievement (1)*
- *achiever (1)*
- *achieves a great deal (1)*
- *need for achievement (1)*

Success (6)

- *ability to accept success (1)*
- *handles success (1)*
- *has experienced success (1)*
- *has some victories (1)*
- *successful (2)*

Perfectionism (4)

- *perfectionism (2)*
- *precise (1)*
- *strives towards perfection (1)*

Good performance (3)

- *goes out to do his/her best (1)*
- *performs when trying, if they want to (1)*
- *good performance (1)*

Ability to win (3)

- *be a winner (1)*
- *to be number one (1)*
- *win (1)*

Values improvement (3)

- *values acknowledgement (1)*
- *making the best of his/her talent (1)*
- *values improvement (1)*

Competence (9)

- *approach task in an authoritative manner (1)*
 - *being the best in your position (1)*
 - *competence (2)*
 - *effectiveness (1)*
 - *self-sufficiency (1)*
 - *efficient (1)*
 - *experience (2)*
-

Self-confidence (199)

Belief in ability (11)

- *belief in ability to achieve (1)*
- *belief in ability/capability (3)*
- *belief in own ability (3)*
- *belief in own capability (3)*
- *belief in own skills (1)*

Arrogance (12)

- *arrogance (2)*
- *portrays a slightly arrogant image (1)*
- *high expectation (1)*
- *believes that he can win before walking onto court (1)*
- *believes that he can (2)*
- *believes that he is the best (2)*
- *optimistic/optimism (2)*
- *feels invincible (1)*

Self-reinforcement (2)

- *build self to achieve in bad situation (1)*
- *personal reinforcement (1)*

Confidence (88)

- *confidence/confident (42)*
- *confidence under pressure (1)*
- *self-confidence (45)*

Self trust (4)

- *does not think, just acts (1)*
- *knows that he can do the sport well (1)*
- *knows that they have worked hard (1)*
- *self-trust (1)*

Positiveness (31)

- *positive (13)*
- *positiveness (8)*
- *self-assured (5)*
- *never doubts his/her achievement level (1)*
- *positive about next race, when he has had a bad one (1)*
- *positive in their approach (1)*
- *positive to want to win (1)*
- *positive, even when playing a stronger team (1)*

Pride (6)

- *pride in own performance (1)*
- *strong sense of pride (4)*
- *proud (1)*

Positive self construct (45)

- *positive, self-image (1)*
- *self-image(11)*
- *self-belief (25)*

- *positive, good self-concept (2)*
 - *self-esteem (5)*
 - *self-worth (1)*
-

Attitude (48)

Enjoyment (17)

- *ability to enjoy it, even when it is going bad (1)*
- *enjoyment (12)*
- *enjoyment of big games (1)*
- *participates for the joy of the game (1)*
- *likes what he does (2)*

Continued positiveness (3)

- *condescending attitude (1)*
- *stays positive regardless of big backlog (1)*
- *stays positive when circumstances are not favourable (1)*

Attitude (28)

- *attitude (1)*
 - *attitude - aura (1)*
 - *right attitude (4)*
 - *correct attitude (1)*
 - *aggressive attitude (2)*
 - *practise makes perfect (1)*
 - *winning attitude (1)*
 - *enters an impossible game with positive attitude (1)*
 - *positive attitude (10)*
 - *positive attitude towards life (1)*
 - *positive dispositions (5)*
-

APPENDIX N

COGNITIVE SKILL (277)

Concentration ability (79)

Concentration control (11)

- *ability to block out unwanted stimuli (1)*
- *block out crowd involvement (1)*
- *ability to switch on/off for games (1)*
- *ability to concentrate under extreme conditions (1)*
- *does not let certain decisions influence him (1)*
- *maintains relaxed concentration (1)*
- *does not get distracted (2)*
- *not distracted by external noise(1)*
- *not easily distracted (2)*

Attentional control (7)

- *attention control (1)*
- *good attention (1)*
- *intensity of attention (1)*
- *stability of attention (1)*
- *concentration of attention (2)*
- *focus attention during training and competing (1)*

Concentration ability (61)

- *concentrate on game (2)*
- *concentrates on task (1)*
- *focused concentration (2)*
- *concentration (54)*
- *overall concentration (1)*
- *excellent ability to concentrate (1)*

Focus ability (111)

Focus control (67)

- *ability to focus (1)*
- *focus (31)*
- *focus at will (1)*
- *sharp at all times (1)*
- *ability to channel aggression (1)*
- *stay focused (1)*
- *ability to remain focused, even when not going to plan (1)*
- *ability to tune in at the right time (1)*
- *stays present (1)*
- *focus/focused (28)*

Task focus (30)

- *focus on goals (1)*
- *focus on important things (1)*
- *focus on task (3)*
- *totally focused at performance and training (3)*

- *able to stay focused on goals (1)*
- *ability to play one shot at a time (1)*
- *focus on a certain goal (2)*
- *focus 100% on game/practise situation (4)*
- *focus on what he still has to do (2)*
- *zoned in (one task at a time) (1)*
- *focus on the task at hand (8)*
- *gets his/her mind focused on the job (1)*
- *has one vision in mind (1)*
- *in tune with his/her sport (1)*

Focus under pressure (8)

- *able to block out individual problems (1)*
- *leaves his/her problems at home (1)*
- *focus inwardly on the day (1)*
- *stays focused while injured (1)*
- *approaches external factors selectively (1)*
- *focus under pressure (2)*
- *stays focused when doing a long race (3 hrs) (1)*

Selective focus (6)

- *does not allow external distractions to interfere (1)*
- *blocks out things around him (1)*
- *able to block out distracting noises (1)*
- *not distracted by anything (1)*
- *knows how to switch on at the correct time (1)*
- *not distracted by circumstances (1)*

Thinking ability (26)

Clear thinking (5)

- *ability to think clearly when physically tired (1)*
- *clear thinking under pressure (1)*
- *think clearly under stress (1)*
- *clarity of thought (2)*

Correct mindset (3)

- *plays sport with correct mindset (1)*
- *ability to think, not worry (1)*
- *high level of associative thinking (1)*

Ability to think ahead (3)

- *able to think a step ahead (1)*
- *able to think ahead in a match situation (1)*
- *allocation (1)*

Quick thinking (4)

- *quickness of reaction of thought (1)*
- *quickness of tactical thinking (1)*
- *quick thinker (2)*

Positive thinking (6)

- *positive thoughts (2)*
- *positive thinking (2)*
- *cheerful (1)*
- *thinks positive (1)*

Thought control (5)

- *thinks for self (1)*
 - *critical thinking (1)*
 - *careful thinker (1)*
 - *control of thoughts (1)*
 - *thought stopping (1)*
-

Decisionmaking ability (32)

Mental capacity (12)

- *good mental cognition (1)*
- *capacity to learn (1)*
- *intelligence (5)*
- *mental ability (1)*
- *strong academically (1)*
- *good listener/student (1)*
- *ability to study from champions in their sport (1)*
- *ability to study from literature (1)*

Game knowledge (8)

- *knowledge of the game (2)*
- *know-how of his/her sport (1)*
- *learn the rules (1)*
- *knows rules, tactics, reason for tactics (1)*
- *aware of the rules of the game (1)*
- *knowledge (2)*

Decision making ability (12)

- *can make decisions under pressure (1)*
 - *quick decision making (4)*
 - *decide quickly between different options (1)*
 - *able to make a decision in a short span of time (1)*
 - *decision making (2)*
 - *decision taking (1)*
 - *makes decisions and sticks to them (1)*
 - *sound decisions under pressure (1)*
-

Analyse ability (27)

Self-knowledge (8)

- *knows their strengths and weaknesses (1)*
- *knows his/her limits (1)*
- *knows what his/her body can do and what the limits are (3)*
- *knows what training works for him (1)*

- *self-knowledge (2)*

Ability to learn from mistakes (2)

- *learns from mistakes (1)*
- *willing to learn from losses (1)*

Insight (6)

- *foresight (1)*
- *insight (1)*
- *understands physical and mental pain (1)*
- *positive insight in every situation (1)*
- *anticipation (1)*
- *know why he competes (1)*

Performance evaluation ability (4)

- *sum up situation (1)*
- *can report on performance (1)*
- *able to evaluate situations (1)*
- *evaluate game and opponent (1)*

Goal analysis (2)

- *insight in goals and way of reaching them (1)*
- *has insight/comprehends his/her goal orientation (1)*

Self-analysis ability (5)

- *open to criticism (1)*
- *orientation (1)*
- *positive self-evaluation (1)*
- *ability to do self-analysis and take corrective action (1)*
- *self-analysis (1)*

Awareness ability (3)

Awareness (3)

- *knows where he is on the ice (1)*
 - *aware of what obstacles in competition must be overcome (1)*
 - *self-awareness (1)*
-

APPENDIX O

DISCIPLINE AND GOAL-DIRECTEDNESS (234)

Discipline (135)

Encouragement (4)

- *ability to use spectator involvement to spur oneself to perform (1)*
- *encouraged player (1)*
- *reacts on encouragement (1)*
- *able to encourage self (1)*

Conscientiousness (6)

- *ability to train on their own (1)*
- *does not participate because he is forced (1)*
- *practise regardless of the weather (1)*
- *only sickness keeps him away from practise (1)*
- *conscientious (2)*

Patience (11)

- *patience (10)*
- *during injury, waits for rehabilitation and then build on it (1)*

Drive (8)

- *drive (3)*
- *intrinsic drive (1)*
- *believes in what he does (1)*
- *self-driven (1)*
- *need to win (1)*
- *driven by a dream (1)*

Enthusiasm (13)

- *enthusiasm (9)*
- *excitement (1)*
- *spirit (1)*
- *incentive (1)*
- *inspiration (1)*

Discipline (60)

- *discipline (23)*
- *discipline to practise (1)*
- *disciplined (during practise and game) (32)*
- *carries out the task with the correct motivation (1)*
- *disciplined play (1)*
- *disciplined temper (1)*
- *disciplined way of life (1)*

Self-discipline (33)

- *self-control (10)*
- *self-discipline (20)*
- *self-discipline by control on the field (1)*

- *application of self-discipline (1)*
 - *self-discipline when training (1)*
-

Goal-orientation (93)

Setting of challenging goals (5)

- *challenging goals (3)*
- *not afraid to aim high (1)*
- *ability to aspire to high, yet realistic goals (1)*

Prior setting of achievable goals (12)

- *goals set ahead (4)*
- *ability to set goals (1)*
- *sets objectives (1)*
- *strive after goals (1)*
- *ability to set goals and then achieve them (1)*
- *has goals and achieves them (4)*

Setting of clear and achievable goals (12)

- *set clear goals beforehand that is achievable (1)*
- *goals set realistically and attainable (3)*
- *certain goals (1)*
- *clear goals (4)*
- *sets definite goals (2)*
- *knows what he wants to achieve (1)*

Goal focus (3)

- *does everything with a purpose (1)*
- *never loses sight of his/her objectives (1)*
- *hunger to achieve goals (1)*

Stepwise goalsetting (6)

- *sets long and short term goals (2)*
- *distinguish between long/short term goals (1)*
- *strives to reach goals in stepwise manner (2)*
- *breaks down goals to manageable tasks (1)*

High goal potential (2)

- *goal potential (1)*
- *higher goals/norms than coach (1)*

Setting of realistic goals (6)

- *objective about training and racing (2)*
- *realistic (1)*
- *realistic goal setting (3)*

Goal orientation (47)

- *goal orientated/ directed (22)*
- *purposeful/goal orientated (11)*
- *sense of purpose/purposeful (2)*
- *knows what they want to achieve (1)*
- *organised (2)*

- *goal setting (4)*
 - *goal setting-direction (4)*
 - *goals and objectives (1)*
-

Idealism (6)

Ideals and dreams (6)

- *idealistic (2)*
 - *has an ideal/dream (1)*
 - *believes in a dream (1)*
 - *role model to younger players (1)*
 - *has a role model (1)*
-

APPENDIX P

COMPETITIVENESS (178)

Will (20)

Willpower (10)

- *willpower (8)*
- *will power for endurance (1)*
- *willing to go on (1)*

Will to be physical (5)

- *will to do well (1)*
- *will to play (1)*
- *will to run (1)*
- *will to work (1)*
- *willing to practise (1)*

Will/willingness (5)

- *will (4)*
 - *willingness (1)*
-

Appearance of a winner (10)

Confident appearance (5)

- *fearless (2)*
- *own the competition area (1)*
- *visible presence shown (1)*
- *appearance of a winner (1)*

Calm, controlled and positive appearance (5)

- *positive body language (2)*
 - *seems calm (1)*
 - *seems like they are always in control (1)*
 - *upward deceptive (1)*
-

Consistent performance (18)

Consistency (8)

- *consistency (6)*
- *consistency in action (1)*
- *consistent in approach to the sport (1)*

Reliability of performance (5)

- *does their best at all times (1)*
- *gives best under all situations (1)*
- *produces good results even if not expected (1)*
- *vindicate self well in all situations (1)*
- *performs well during tours (1)*

Consistent play (5)

- *level of play does not deteriorate against weak opposition (1)*
 - *ability to play without rushing (1)*
 - *steadfast (1)*
 - *unwavering (1)*
 - *has better achievement in the long term (1)*
-

High competitive level (87)

Aggressiveness (22)

- *aggressiveness/aggression (controlled) (21)*
- *competes aggressively (1)*

Assertiveness (5)

- *assertive approach (within limits) (1)*
- *boldness (1)*
- *assertive attitude/assertiveness (3)*

Ability to raise playing level (4)

- *can find a way to win even when not playing well (1)*
- *lifts self when playing badly (1)*
- *raises the level of the game (1)*
- *raise playing level (1)*

Competitiveness (23)

- *competes every point (1)*
- *competes with self-confidence (1)*
- *competitive (21)*

Appetite for competition and opposition (4)

- *does not avoid competition (1)*
- *urge towards competition (1)*
- *does not stand back for other competitors (1)*
- *does not take insult from opposition (1)*

Single-mindedness about winning (4)

- *gives nothing away (1)*
- *serious about winning (1)*
- *makes the most of an advantage (1)*
- *plays to win (1)*

Sportsmanship (25)

- *good sportsperson (1)*
 - *contentment (1)*
 - *believes everybody has a winning chance (1)*
 - *good sportsmanship (22)*
-

Big match temperament (43)

Temperament (10)

- *good temperament (1)*

- *temperament (8)*
- *good competition temperament (1)*

Ability to win close matches (2)

- *ability to win close matches (1)*
- *Level headed in tight situations (1)*

Non threatened disposition (3)

- *does not feel threatened by big names (2)*
- *not afraid to win (big name players) (1)*

Performance under pressure (3)

- *rises to challenge/pressure situations (1)*
- *ability to perform under pressure (1)*
- *thrive/perform under pressure (1)*

Ability to fight back and win (5)

- *to win a game when 5-0 down (1)*
- *pulls through during tough times (1)*
- *able to deliver high intensity play during long circumstances (1)*
- *ability to make a comeback (1)*
- *winners instinct (1)*

Big match temperament (20)

- *BMT (16)*
 - *bring best forward during big meets (1)*
 - *performs well at important meetings (1)*
 - *tough competitor (1)*
 - *toughness (1)*
-

APPENDIX Q

POSSESSION OF PREREQUISITE PHYSICAL AND MENTAL REQUIREMENTS (151)

High physical and mental conditioning (116)

Ability (2)

- *ability (1)*
- *confidence in ability (1)*

Technique (4)

- *ability to apply difficult and good techniques (1)*
- *sound technique (1)*
- *technically fit (1)*
- *co-ordination (1)*

Skills (9)

- *application of skills (1)*
- *skill/skilful (5)*
- *skills potential (1)*
- *natural skill (1)*
- *above average physical skill and talent (1)*

Talent (6)

- *talent (4)*
- *inherited genetic ability (1)*
- *natural talent (1)*

Endurance (27)

- *cope with the physical assault of sport (1)*
- *above average/extra (1)*
- *endurance (21)*
- *low fatigue (1)*
- *handles tough competition/training sessions without giving up (1)*
- *energy/active (2)*

Fitness (19)

- *top fitness (1)*
- *fitness (18)*

Game fitness (2)

- *fit to play the game (1)*
- *competition fit: can handle the strain (1)*

Physical attributes (11)

- *flexibility (2)*
- *speed (1)*
- *strength (1)*
- *physical strength (3)*
- *physical potential (2)*
- *strong physical attributes (1)*
- *healthy body (1)*

Physical fitness (11)

- *good conditioning* (2)
- *physical fitness/conditioning* (7)
- *peak physical fitness* (2)

Ability to work hard (18)

- *physical toughness* (1)
- *hard working* (7)
- *power of working hard* (1)
- *ability to practise/work hard* (4)
- *sustained hard work* (1)
- *toughness* (1)
- *trains hard* (1)
- *overtrains easily* (1)
- *races hard* (1)

Mental fitness (7)

- *mental fitness* (5)
 - *psychological and physiological conditions* (1)
 - *psychological endurance* (1)
-

Ability to cope with pain (20)

Acceptance of pain (8)

- *accepts pain as part and parcel of sport* (1)
- *not afraid of pain* (1)
- *pain is temporary, glory is forever* (1)
- *push his/her body against the pain* (1)
- *perception of discomfort de-emphasised* (1)
- *works regardless of physical discomfort/pain* (1)
- *will endure beyond his/her capabilities* (1)
- *willingness to endure discomfort* (1)

Ability to block out pain (7)

- *ability to block out the pain* (1)
- *transfer of pain/high threshold* (2)
- *does not feel pain that easily* (1)
- *low pain threshold* (1)
- *overcome physical stress/pain barrier* (1)
- *able to play when in reasonable pain* (1)

Ability to handle pain (5)

- *cope with pain/discomfort* (1)
 - *ability to handle pain* (1)
 - *handles pain* (1)
 - *pain threshold/handle pain* (1)
 - *willing to challenge pain and cope with it* (1)
-

Self-sacrifice (15)

Sensible risk taking (3)

- *ability to take risks when justified (1)*
- *can risk intelligently (1)*
- *takes risks (1)*

Extension beyond limits (3)

- *force self beyond his/her own limits (1)*
- *push his/her body to the limits and over (2)*

Sacrifice (9)

- *sacrifice (3)*
 - *self-sacrifice (2)*
 - *sacrifices for the team (1)*
 - *willing to sacrifice everything for success (2)*
 - *willing to sacrifice for his/her goals (1)*
-

APPENDIX R

TEAM UNITY (82)

Respect (8)

Positive disposition towards opponents (4)

- *gives credit to those who beats him (1)*
- *good disposition towards sport and others, respect (1)*
- *empathy to sport people (1)*
- *high esteem of fellow top athletes (1)*

Respect for self, others and sport (4)

- *respectful of other players and support (1)*
 - *respects other athletes (2)*
 - *self-respect (1)*
-

Team cohesion (29)

Selfless team play (3)

- *ability to selflessly perform for the team (1)*
- *abnegation (self-verloëning) (1)*
- *gives everything for the team (1)*

Good communication skills (5)

- *communication skills (1)*
- *good communicator (2)*
- *more extroverted (1)*
- *no communication problems (1)*

Support and encouragement for team-mates (6)

- *encourages team in win or lose situation (1)*
- *inspires fellow team-mates with his/her attitude (1)*
- *example to the rest of the team (1)*
- *helps other people that are struggling (2)*
- *keeps team-mates calm (1)*

Self and other motivation (14)

- *self-motivation (9)*
- *motivates self and the team (3)*
- *motivates others (1)*
- *motivates team-mates (1)*

Good team playing abilities (10)

- *performs well during team competitions (1)*
- *team player (3)*
- *team awareness (1)*
- *co-operative (2)*
- *compatibility in team (1)*

Team spirit and harmony (7)

- *cares for team-mates and coach (1)*
 - *team spirit (1)*
 - *team spirit and team cohesion (2)*
 - *confidence in team (1)*
 - *supports team-mates (1)*
 - *team work (1)*
-

Relationship skills (45)

Social skills (3)

- *able to handle social situations (1)*
- *handle the media and other such things (1)*
- *affirmation (1)*

Good relationship with coach and others (11)

- *believes in coach (4)*
- *good peoples relationship with coach (1)*
- *good relationship with people (3)*
- *good relationship with team and coach (3)*

Stability and social support (7)

- *has many sources of support (1)*
- *support by family/friends (2)*
- *positive reinforcement constantly given to self (2)*
- *healthy circumstances (1)*
- *stable personal life (1)*

Honesty (5)

- *honesty (3)*
- *honesty with self and others (2)*

Integrity (2)

- *integrity (1)*
- *returns to his/her club every time (1)*

Loyalty (6)

- *loyalty (3)*
- *loyalty to coach (1)*
- *loyal to team and sport (2)*

Coachability (2)

- *listens to coach (1)*
- *open to criticism and correction (1)*

Trust (9)

- *trust (1)*
 - *trust in coach (1)*
 - *trusts others (1)*
 - *trusting relationship between athlete and coach (6)*
-

APPENDIX S

PREPARATION SKILLS (77)

Balance (18)

Resting time (2)

- *allows for enough rest for their body at big competitions (1)*
- *allows themselves to rest (1)*

Lifestyle control (2)

- *does not get addicted to over-training (1)*
- *in control of own life (1)*

Enjoyment of other interests (2)

- *happy in work/school outside of sport (1)*
- *has interests in other areas (1)*

Positive outlook (3)

- *positive outlook on life (1)*
- *positive outlook on life and sport (2)*

Recuperation time (3)

- *time for relaxation (1)*
- *time to forget (1)*
- *makes time to enjoy self (1)*

Balance (6)

- *balance between social, sport, and work (1)*
 - *good balance (1)*
 - *balanced (2)*
 - *physical and mental balance (1)*
 - *balanced character (1)*
-

Balanced preparation (46)

Professionalism (7)

- *professional training ethic (1)*
- *professionalism (5)*
- *sees tennis career as a business and acts accordingly (1)*

Interest in a modern approach (4)

- *focused approach (1)*
- *on track with modern developments (1)*
- *interested in his/her sport (1)*
- *creative (1)*

Psychological and physical preparation (4)

- *able to psychologically prepare for the day (1)*
- *psychologically prepared for competitions (1)*
- *good physical and mental preparation (1)*
- *balanced physical and psychological preparation (1)*

Balanced diet (3)

- *correct diet (1)*
- *good balanced diet (1)*
- *correct eating habits (1)*

Physical preparation (7)

- *physically well prepared (1)*
- *prepares self correct physically (1)*
- *well prepared (2)*
- *will to prepare well (1)*
- *preparation (2)*

Routines (3)

- *routine (1)*
- *set pre-performance routine (1)*
- *set routine in competitions (1)*

Planned preparation for competition (9)

- *correctly prepared (2)*
- *mental toughness is practised and trained (1)*
- *good training technique (1)*
- *planned preparation (1)*
- *has thought of a practise and race plan beforehand (1)*
- *sure of game plan (1)*
- *psyching (1)*
- *final preparation for the competition (1)*

Organisation ability (7)

- *great course management (1)*
- *methodicalness (1)*
- *organised (1)*
- *well organised (1)*
- *punctuality (1)*
- *priorities (1)*
- *self-management (1)*

Good use of free time (2)

- *knows how to handle free days (1)*
- *living a healthy lifestyle (1)*

Visualisation ability (12)

Visualisation skills (12)

- *ability to visualise his/her performance (1)*
 - *future vision (1)*
 - *imagery (1)*
 - *positive visualisation before and after competition (1)*
 - *races against self (1)*
 - *visualisation skills (6)*
 - *visualistic (1)*
-

APPENDIX T

PSYCHOLOGICAL HARDINESS (72)

Strong personality (27)

Character (9)

- *character* (6)
- *positive character* (1)
- *will show character* (1)
- *strong character* (1)

Individualism (7)

- *dominant* (1)
- *stubborn* (2)
- *need to discipline self* (1)
- *unpredictable* (1)
- *stand up for self* (1)
- *individualistic* (1)

Inner strength (7)

- *inner strength* (2)
- *maturity* (3)
- *not overly sensitive* (2)

Strong personality (4)

- *personality factors* (1)
 - *strong personality* (3)
-

Emotional and psychological well-being (27)

Emotional and psychological strength (4)

- *emotional strength* (3)
- *psychological strength* (1)

Emotional control (20)

- *emotional control* (13)
- *shows no emotion* (1)
- *knows how to handle emotions and cope with it* (1)
- *emotional stability* (5)

Psychological health (3)

- *emotional maturity* (1)
 - *emotionally sound* (1)
 - *psychologically healthy* (1)
-

Charge taking (12)

Initiative (4)

- *industriousness* (1)
- *initiative* (1)

- *improvises (2)*

Leadership skills (8)

- *leadership skills (4)*
 - *able to take charge when asked to (1)*
 - *leads by examples (2)*
 - *strong leadership qualities (1)*
-

Autonomy (6)

Independence (4)

- *autonomous (1)*
- *independence (2)*
- *ability to compete on their own (1)*

Egotism (2)

- *does not take other people into account (1)*
 - *does not worry about the limits of others (1)*
-

APPENDIX U

RELIGIOUS CONVICTIONS (25)

Religious belief (25)

Faith (9)

- *believes in God (5)*
- *believes in his/her Maker (1)*
- *faith (2)*
- *religious conviction (1)*

Firm morals (4)

- *strong values and opinions (1)*
- *firm principles (1)*
- *morality (1)*
- *obedient to God (1)*

Humbleness (9)

- *humbleness (8)*
- *humility in times of failure (1)*

Living relationship with his/her God (3)

- *knows his/her strength comes from the Almighty (1)*
 - *has a living relationship with God (1)*
 - *relationship with creator for strength, calmness and wisdom (1)*
-

APPENDIX V

ETHICS (4)

Sense of righteousness (4)

Fair playing (4)

- fairness (2)
 - plays a fair game (1)
 - plays hard and plays fair (1)
-

APPENDIX W

Complete percentage and number of statements as distributed within each mental toughness theme by the coaches and athletes individually

Number of statements	Total 2266		Coaches 1093		Athletes 1173	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Identified themes						
A. MOTIVATION LEVEL	557	24.58	228	20.86	329	28.05
1: Perseverance	161	7.11	55	5.03	106	9.04
2: Determination	160	7.06	66	6.04	94	8.01
3: Desire	118	5.21	52	4.76	66	5.63
4: Responsibility	72	3.18	36	3.29	36	3.07
5: Commitment	46	2.03	19	1.74	27	2.30
B. COPING SKILLS	315	13.90	145	13.27	170	14.49
1: Coping ability	145	6.40	69	6.31	76	6.48
2: Composure	37	1.63	15	1.37	22	1.88
3: Acceptance	36	1.59	20	1.83	16	1.36
4: Activation control	74	3.27	33	3.02	41	3.50
5: Adaptability	23	1.02	8	0.73	15	1.28
C. CONFIDENCE MAINTENANCE	280	12.36	142	12.99	138	11.76
1: Competence	33	1.46	22	2.01	11	0.94
2: Self-confidence	199	8.78	99	9.06	100	8.53
3: Attitude	48	2.12	21	1.92	27	2.30
D. COGNITIVE SKILLS	278	12.27	157	14.36	121	10.32
1: Concentration ability	79	3.49	44	4.03	35	2.98
2: Focus ability	111	4.90	48	4.39	63	5.37
3: Thinking ability	26	1.15	20	1.83	6	0.51
4: Decisionmaking ability	32	1.41	25	2.29	7	0.60
5: Analyse ability	27	1.19	18	1.65	9	0.77
6: Awareness ability	3	0.13	2	0.18	1	0.09

Table continues:

E. DISCIPLINE AND GOAL-DIRECTEDNESS	234	10.33	115	10.52	119	10.14
1: Discipline	135	5.96	71	6.50	64	5.46
2: Goal-orientation	93	4.10	39	3.57	54	4.60
3: Idealism	6	0.26	5	0.46	1	0.09
F. COMPETITIVENESS	178	7.86	76	6.95	102	8.70
1: Will	20	0.88	6	0.55	14	1.19
2: Appearance of a winner	10	0.44	8	0.73	2	0.17
3: Consistent performance	18	0.79	7	0.64	11	0.94
4: High competitive level	87	3.84	35	3.20	52	4.43
5: Big match temperament	43	1.90	20	1.83	23	1.96
G. POSSESSION OF PREREQUISITE PHYSICAL AND MENTAL REQUIREMENTS	151	6.66	88	8.05	63	5.37
1: High physical and mental conditioning	116	5.12	68	6.22	48	4.09
2: Ability to cope with pain	20	0.88	11	1.01	9	0.77
3: Self-sacrifice	15	0.66	9	0.82	6	0.51
H. TEAM UNITY	96	4.24	60	5.49	36	3.07
1: Respect	8	0.35	7	0.64	1	0.09
2: Team cohesion	43	1.90	25	2.29	18	1.53
3: Relationship skills	45	1.99	28	2.56	17	1.45
I. PREPARATION SKILLS	76	3.35	40	3.66	36	3.07
1: Balance	18	0.79	4	0.37	14	1.19
2: Balanced preparation	46	2.03	25	2.29	21	1.79
3: Visualisation skills	12	0.53	11	1.01	1	0.09
J. PSYCHOLOGICAL HARDINESS	72	3.18	33	3.02	39	3.32
1: Strong personality	27	1.19	11	1.01	16	1.36
2: Emotional and psychological well-being	27	1.19	13	1.19	14	1.19
3: Charge taking	12	0.53	6	0.55	6	0.51
4: Autonomy	6	0.26	3	0.27	3	0.26
K. RELIGIOUS CONVICTIONS	25	1.10	12	1.10	13	1.11
1: Religious belief	25	1.10	12	1.10	13	1.11
L. ETHICS	4	0.18	1	0.09	3	0.26
1: Sense of righteousness	4	0.18	1	0.09	3	0.26

APPENDIX X

List of the characteristics mentioned by both the coaches and athletes and the number of times each characteristic were mentioned

Number of subjects	Total 291	Coaches 131		Athletes 160	
	<i>f</i>	<i>f</i>	%	<i>f</i>	%
Characteristic					
Perseverance	72	29	22.14	43	26.88
Determination	67	26	19.85	41	25.63
Concentration	54	33	25.19	21	13.13
Motivated/motivation	49	18	13.74	31	19.38
Self-confidence	45	23	17.56	22	13.75
Confidence/confident	42	24	18.32	18	11.25
Dedication/dedicated	42	20	15.27	22	13.75
Commitment/committed	39	13	9.92	26	16.25
Self-belief	25	10	7.63	15	9.38
Will to win	23	14	10.69	9	5.63
Good sportsmanship	22	7	5.34	15	9.38
Aggressiveness/aggression (positive)	21	5	3.82	16	10.00
Competitive	21	9	6.87	12	7.50
Endurance	21	9	6.87	12	7.50
Self-discipline	20	11	8.40	9	5.63
Fitness	18	8	6.11	10	6.25
BMT	16	6	4.58	10	6.25
Persistence	15	4	3.05	11	6.88
Adaptability	14	4	3.05	10	6.25
Desire	14	7	5.34	7	4.38
Emotional control	13	7	5.34	6	3.75
Guts/intestinal fortitude	11	3	2.29	8	5.00
Self-image	11	6	4.58	5	3.13
Courage	10	5	3.82	5	3.13
Passion/love	10	3	2.29	7	4.38
Patience	10	7	5.34	3	1.88
Self-control	10	5	3.82	5	3.13
Enthusiasm	9	6	4.58	3	1.88
Self-motivation	9	7	5.34	2	1.25
Composure	8	4	3.05	4	2.50
Humbleness	8	4	3.05	4	2.50
Temperament	8	4	3.05	4	2.50
Willpower	8	1	0.76	7	4.38

Table continues:

Ambition	7	2	1.53	5	3.13
Fighting spirit	7	5	3.82	2	1.25
Hard working	7	2	1.53	5	3.13
Consistency	6	3	2.29	3	1.88
Not intimidated	6	1	0.76	4	2.50
Emotional stability	5	3	2.29	2	1.25
Enjoys challenges	5	1	0.76	4	2.50
Mental fitness	5	3	2.29	2	1.25
Professionalism	5	2	1.53	3	1.88
Self-esteem	5	2	1.53	3	1.88
Intrinsic motivation	4	3	2.29	1	0.63
Quick decision making	4	3	2.29	1	0.63
Will	4	1	0.76	3	1.88
Will to achieve	4	2	1.53	2	1.25
Emotional strength	3	2	1.53	1	0.63
Maturity	3	2	1.53	1	0.63
Sacrifice	3	2	1.53	1	0.63
Team player	3	2	1.53	1	0.63
Tolerance	3	1	0.76	2	1.25
Accepts challenges	2	1	0.76	1	0.63
Devotion/devoted	2	1	0.76	1	0.63
Fairness	2	1	0.76	1	0.63
Fearless	2	1	0.76	1	0.63
Focused concentration	2	1	0.76	1	0.63
Idealistic	2	1	0.76	1	0.63
Inner strength	2	1	0.76	1	0.63
Knowledge of the game	2	1	0.76	1	0.63
Optimistic/optimism	2	1	0.76	1	0.63
Perfectionism	2	1	0.76	1	0.63
Positive, good self-concept	2	1	0.76	1	0.63