

# **Habit(us), values and mindfulness among elite athletes**

by

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## DECLARATION OF AUTHENTICITY

I declare that *Habit(us), values and mindfulness among elite athletes* is my own work, that it has not been submitted before for any degree or examination in any other university and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Denise Frick

October 2016



Signed: \_\_\_\_\_ Date: 4 October 2016

## SUMMARY

### HABIT(US), VALUES AND MINDFULNESS AMONG ELITE ATHLETES

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This study aimed at exploring the possible impact that habits, values and mindfulness can have on an athlete's achievement of success. It provided a thorough understanding of these three concepts and analysed the interrelationship they might have. By examining their interconnectedness, the study found that a triadic relationship exists among habits, values and mindfulness in the sport context.

The fieldwork was conducted with athletes from various performance levels. Elite athletes were represented by athletes who have continuously performed exceptionally (having won medals at Olympics, Commonwealth Championships, World Cups or Continental Championships) on the international stage. These athletes formed part of the first phase of this study. Athletes performing on club-, provincial- and national level were the participants in the second phase of the study. The study found that athletes from the four performance levels experienced habits, values and mindfulness differently. Certain core habits and values were present among the different athlete populations. Elite athletes identified visualisation, simplicity, simulation training and pre-performance routines as crucial habits in their respective sports. The elite athletes indicated the importance of behavioural consistency and that they tend to behave in a manner that is consistent with their values and to hold themselves accountable to those values. Although there were similarities, the strength of similar habits differed among the athletes from the different levels of performance. In general, the three strongest habits among the four different performance levels, were the habits of responsiveness, discipline and resilience.

The club-, provincial- and national athletes valued interpersonal relationships such as loyalty, commitment and respect for others, higher than values that are more inclined to assist in individual satisfaction and needs. Though the differences were not statistical significant, it might be interesting to note that the national athletes scored higher on values

such as self-direction, universalism and benevolence. Club athletes scored higher on values such as hedonism and tradition.

The role of mindfulness in the attainment of success received varied emphasis from the club-, provincial-, national- and elite athletes. The elite athletes identified mindfulness as a key element in the maintenance of a successful long-term sport career. The elite athletes linked mindfulness and visualisation with the understanding that the two concepts are interconnected and that mindfulness might be aided by the practice of visualisation. The club-, provincial- and national athletes identified a link between the habit of focusing and mindfulness, indicating that focusing assists them in heightening their awareness levels in situations. Athletes from the varying performance levels referred to mental skills concepts as habits. They distinguished between behavioural habits as well as mental skills habits.

Correlation assessments were conducted to assess for links between habits, values and mindfulness. Twenty eight correlations were found between the assessed habits and values. Five correlations were found between values and mindfulness variables. Forty two correlations were found between habits and mindfulness variables.

Qualitative and quantitative research methods were used to gather the data. The results indicated that the development of athletes on all levels of performance can be enhanced by being attentive to the habits, values and mindfulness levels of athletes. The recommendations provided by this study will provide options to enhance performance levels and possibly contribute to the holistic development of athletes in South Africa, Africa and the broader sport fraternity.

**Keywords:** Habits, mindfulness, values, athletes, sport, experience, success, excellence, development, performance level.

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# CHAPTER 1

## Problem statement and research goal

### 1.1 Overview

Chapter 1 serves as an introduction and provides an overview of the research problem, research question, research design, research method, aims and objectives of this study. The structure of this study will also be outlined.

### 1.2 Context

I am introducing myself in the first person as it partly introduces and incorporates the qualitative phase of this study. This is appropriate due to the role I have played throughout this study. My history and experience in sport have played a key role in my interpretation and engagement with athletes in every phase of this study. Through my own sport experience I became an instrument in this study since I have been the ever-present agent in every facet of it. This study is based on my years of experience as a national athlete (chess) and my interest and experience as a psychologist specializing in sport psychology. I have been representing South Africa internationally for the past 18 years. My years of intense preparation and competition have exposed me to some of the most intense experiences that athletes can face, both that of my own and those of teammates and opponents. I have experienced first-hand the dynamics and intricacies of high level performance. Seeing sportsmen and women enter and leave sport has intrigued me and awakened a desire to research the dynamics of high level performance in more detail, exploring concepts that I have encountered, but have not made sense of yet. Being a psychologist for the past nine years has provided me with the opportunity to integrate theory with practice. I have always been intrigued by the reasons why some athletes choose to commit and continue with long sport careers and why others do not. This inquisitive mindset is what informed the initial motivation of this study. In the current study, I have first adopted the role of athlete and psychologist in this introductory context, taken on the role of researcher throughout Chapters 2-8 and combined my roles of athlete, psychologist and researcher in the concluding Chapter 9.

### 1.3 Research problem

*“We are what we repeatedly do.*

*Excellence then is not an act but a habit” – Aristotle (De Villiers, 2009).*

The President of the South African Sports Confederation and Olympic Committee (SASCOC), Mr. Gideon Sam, whilst in addressing a Long-Term Coaches' Development workshop in October 2011, voiced his concern that South Africa has barely produced 20 world class athletes despite a great deal of work having been done to develop athletes during the past two decades (Steenkamp, 2011).

In order to address this concern, SASCOC introduced the Long-Term Participant Development (LTPD) model that was implemented in specific sport codes. Due to the nature of certain sport codes, it is vital that sport coaches identify talent early in an athlete's career in order to secure adequate and timely support staff and training programmes to ensure that athletes reach their full potential (SASCOC, 2011). The goal of the LTPD is to develop and support athletes from the time they are introduced to physical activity at a young age, up to and after retirement from physical participation in sport (Enoksen, 2011; SASCOC, 2011; Thomas, Côte, & Deakin, 2008).

In my view, both as an athlete and psychologist, the idea of a programme model such as the LTPD seems innovative and practical on paper. But how does a country who has never made a concerted effort to invest in the mental preparation of its athletes embark on a journey of successfully implementing a detailed programme as outlined by the LTPD? I have always questioned that there must be more to the development of athletes, and especially elite athletes, than mere classification and development according to these set guidelines of the LTPD. To understand this sentiment, a detailed exploration of the LTPD and its development in the South African context is required.

LTPD is a framework which assists in ensuring that people stay active and engaged in physical activity throughout their lives. The framework also serves as a guide to develop participants optimally, depending on the life stage they find themselves in and is therefore a long-term development plan (Balyi, 2011). Balyi (2002) has developed the LTAD (Long-Term Athlete Development) model (known in South Africa as the LTPD model). The LTAD has now been refined to include administrators, trainers and any others who participate in sport, changing the term Long-Term Athlete Development to Long-Term Participant Development. It is based on the understanding that two approaches to specialization in sport exists: that of early and late specialization.

According to Balyi (2002), early specialization entails an athlete starting with intensive training and participation after the age of 10 years. With the LTPD model, the emphasis is placed more on the experience of fun, social skills and later specialization in order to assist

life-long participation and prevent early drop-out and burnout. The LTAD model consists of seven stages of development (Balyi, Cardinal, Higgs, Norris, & Way, 2005):

Stage 1: Active Start (males and females 0-6 years of age)

Stage 2: FUNdamentals (males 6-9; females 6-8)

Stage 3: Learning to Train (males 9-12; females 8-11)

Stage 4: Training to Train (males 12-16; females 11-15)

Stage 5: Training to Compete (males 16 to  $\pm 23$ ; females 15 to  $\pm 21$ )

Stage 6: Training to Win (males  $\pm 19$ ; females  $\pm 18$ )

Stage 7: Active for Life (enter at any age)

This model is sport code specific and athletes will enter different stages depending on the early or late specialization requirements of the specific code. It is generally envisaged that late specialization codes will benefit from athletes going through stages 1-4 in the age specific guidelines. Mental skills training is a consistent part of the model from the fourth stage (training to train) and onwards. It is in the fourth stage (developmental age of approximately 12-16 years) that an athlete starts to develop sport specific skills (Balyi et al., 2005). This may be an ideal stage in which to emphasize those specific psychological characteristics that are critical for the development of excellence in any specific sport code.

The question remains as to how the process of talent identification can be enhanced in order to produce the level of skill needed to participate successfully and consistently on an international level. It is within this LTPD framework of SASCOC that knowledge of the role of habits in sport in general, as well as sport specific habitual patterns, might contribute to talent identification, development and understanding of elite and future-elite athletes. Creating an understanding of athletes' habits, values and mindfulness development might assist in the further development of this long-term framework in order to optimally prepare an athlete for each stage.

In my opinion, the notion that habits play a crucial role in the development of sporting careers needed to be scientifically interrogated. When behaviour becomes automatic, one would presume that it would be essential that those habits are of a constructive nature if they are to enhance or produce beneficial sporting actions. This is especially important in the sport environment where performance results are most often action based and timing of actions can be crucial to winning (Duhigg, 2012). It is from this assertion that one realises the importance of an athlete having well constructed habits that enable the athlete to perform



required actions in order to gain an advantage, when there is no time to think, and to make well-thought through decisions.

Enriching the understanding of habits, the athletes' values should be explored as possible motivators for the conduct of initial behaviour that eventually become habits. An awareness of habits and values may play a crucial role in this process, and thus the concept of mindfulness becomes important. Being mindful of behaviour and values might assist an athlete to link his/her values and routine-type behaviour. Introducing three concepts (habits, mindfulness and values) in a study and attempting to pinpoint a possible relationship among them in the sport context can be a complex task.

Another question arises as to what can be done to instil required habits needed to assist in the attainment of excellence in sport and to identify those habits that are counterproductive to the athlete's experience of excellence. It is for this purpose that one has to determine the nature of habits of elite athletes in order to create an understanding of how these habits relate to their success. Deeper insight into the nature of habits and how these habits originated and how they are maintained can provide crucial information that can assist the nurturing of younger athletes and talent development. An understanding of the possible interplay between habits, mindfulness and values can further assist the developing athlete in pursuing the development of habits, values and mindfulness as portrayed by elite athletes.

In sport literature, there are references relating to mindfulness such as 'being in the zone', state of flow, habits, consistent specific training, routines and mindset (Cooper & Goodenough, 2007). All these concepts seem to link with each other and are vital for superior sport performance and favourable sport experience.

In sport psychology consultations, it is often important to assist the athlete to create a way of dealing with the demands of a home or work environment whilst maintaining sport excellence. By creating an understanding of the habits an athlete has established in non-sport environments might enable a better understanding of the athlete's conscious and subconscious behaviour in the sport environment and the link between the two settings.

Identifying sport talent is a process that needs to happen early on in the Long-Term Participant Development Programmes. If awareness of critical sport promoting habits exists, an athlete's development plan can include the development of beneficial habits. South Africa has a unique blend of athletic prowess notwithstanding demographic aspects, economic factors, its political history and cultural influences.

The Western Cape Provincial Government has introduced MOD (mass participation, opportunity, and development) centres with the aim of introducing children to sport and

recreational activities in an effort to prevent them from engaging in delinquent behaviour. These MOD centres have been successful in identifying young sporting talent with two children already being streamed into specialized sport programmes at the Western Cape Sport School (Zille, 2012). It is with programmes such as these that South Africa might be able to identify and nurture young talented athletes into elite athletes that can make the country proud.

Identifying talent and working on technical aspects and basic sport psychological principles in an athlete's development are not enough to ensure lifelong participation and excellence. There is a need to improve the quality of athletes' development in South Africa. The question remains as to how one can specialize and enhance this process even further.

According to popular literature and specifically the work of Anshel (2005, 2007a, 2010a, 2010b), it is suggested that habits can play a crucial role in the success of athletes. An extensive search for available data pertaining to the role of habits related to the success of athletes, indicated that a research gap exists that needs to be scientifically interrogated. If this study can improve the understanding, insight and knowledge of the role of habits in successful athletes, it can also contribute to developing a more scientific approach to the development of younger talented athletes.

## **1.4 Research question**

The core question for this research was: How do habits, values and mindfulness relate to the success of highly effective athletes?

This study set out to explore this research question and create an understanding and awareness of the interplay between habits, mindfulness and values, as well as the nature and prevalence of habits and the role they play in an athlete's career, allowing sport psychologists, sport administrators, coaches and athletes to develop and manage sport careers more effectively.

## **1.5 Research design and method**

A mixed method approach was used in order to create a framework which allowed for these three concepts to be studied within their respective theoretical constructs, enhancing the quality of information obtained during the research phase (Johnson, Onwuegbuzie, & Turner, 2007). A mixed methods research approach assists a researcher in developing an instrument by which data will be expanded upon and thus provide a more comprehensive view of the research field. Creswell defines mixed methods research as *"a research design (or methodology) in which the researcher collects, analyzes, and mixes (integrates or*

*connects) both quantitative and qualitative data in a single study or a multiphase program of inquiry” (Johnson et al., 2007, p. 9).*

The three concepts of habits, mindfulness and values fall into three different theoretical constructs, namely a behaviourist framework (habits), cognitive framework (mindfulness) and the Disconnected Values Model (values) as proposed by Anshel (2013). A mixed method approach allows for the exploration and triangulation of athletes’ experiences regarding these concepts in their sport performance. It also allows for the summarization of the information obtained and applying it in the quantitative phase in order to obtain more information about the concepts across a broader athletic population. This ideal of providing an encompassing view of the data obtained, is reflected in Preskill’s definition of mixed methods research: *“Mixed methods research acknowledges that all methods have inherent biases and weaknesses; that using a mixed method approach increases the likelihood that the sum of the data collected will be richer, more meaningful, and ultimately more useful in answering the research questions” (Johnson et al., 2007, p. 11).*

The first stage of the study consisted of qualitative research, comprising semi-structured interviews with seven elite athletes. The interviews were transcribed and emerged themes were identified and categorised. The data from the qualitative phase was used to develop a questionnaire that sought to further investigate the findings from the qualitative stage in the quantitative stage. The quantitative phase consisted of athletes completing written and online questionnaires. The timing of this study was sequential since the one part of the study followed after the other.

This level of interaction was interactive and participatory since the design and conduct of the quantitative strand depended on the data gathered from the qualitative strand. This interaction of the two strands occurred before a final interpretation of data was made (Creswell & Plano Clark, 2011). The mixing of data took place during data analysis and the two methods enjoyed equal priority.

## **1.6 Aims**

- The first aim of this study is to explore the psychological dynamics in the formation and maintenance of performance facilitating habits among athletes.
- The second aim is to identify and determine the effect or impact of values and disconnected values on the formation and maintenance of performance facilitating habits among athletes.

- The third aim entails determining the relationship between mindfulness and habits of athletes.
- The fourth aim is to determine if there are significant differences between the levels of participation relating to these psychological dynamics, habits, values and mindfulness. This aim is integrated into the first three aims.

The aims of this study provided me with clear goals. The three concepts of habits, mindfulness and values are central to this study and the aims provided a clear indication as to what I wanted to achieve by researching these concepts. Placing clear emphasis on these three aspects and establishing clarity on how each one influences the sport experience of the athlete provided insight into the required non-technical (mental) and often under-valued aspects of an athlete's career. This understanding can enhance the development of potential elite athletes by making mental development more focused on the nature of these required aspects.

## 1.7 Objectives

- To explore the psychological dynamics related to habits of the selected subjects by making use of semi-structured open-ended questions.
- To determine the nature and strength of habits of the selected subjects by employing the Shadowmatch™ Worksheet.
- To ascertain the values of the subjects as formulated and measured in the ten human values assessed by the Portrait Values Questionnaire (PVQ).
- To assess the most important values as experienced by the subjects by using the Value Checklist based on and adapted from the Disconnected Values Checklist of Anshel.
- To determine the mindfulness levels of the subjects by employing the Five Facet Mindfulness Questionnaire (FFMQ).

The objectives are very transparent and served as clear guidelines for the research process. In order for the aims of this research study to be achieved, it was important to have a clear indication about the precise manner as to how the aims would be met. Creating detailed information and insight into the dynamics of habits, mindfulness and values by determining and identifying the different concepts in athletes, directly addressed and satisfied the aims of this study.

## **1.8 Structure of study**

### **Chapter 1 - Introduction**

This chapter provided an overview of the research problem, research question, research design, research method, aims and objectives of this study. The structure of this study was outlined. The researcher was introduced in the first person in order to relate to the qualitative phase of this study.

### **Chapter 2 - Literature review**

Chapter 2 consisted of an extensive literature review regarding habits, mindfulness and values. These concepts were defined, explored and related to the world of sport. The link and interrelatedness between these concepts were of significance throughout the chapter.

### **Chapter 3 - Research methodology**

This chapter provided specific information about the purpose of the study, research position, research strategy, research process, participants, research ethics and the quality of the research. The two phases of the study and phase specific information were discussed.

### **Chapter 4 - Results: Phase 1 qualitative data**

The results of the data obtained from the qualitative Phase 1 of the study were provided in this chapter. The data was organised according to the athletes' experiences of habits, mindfulness and values.

### **Chapter 5 - Discussion: Phase 1 qualitative data**

This chapter discussed the results of Chapter 4 and related the themes, as they emerged in the study, to the existing body of knowledge.

### **Chapter 6 - Results: Phase 2 qualitative data**

This chapter provided the results obtained from nine questions that were formulated based on the Phase 1 athletes' experiences of habits in their sport careers as well as their lives way from the sport context. The responses of 82 athletes have been collated to identify key themes, habits and ideas and were explored.

### **Chapter 7 - Discussion: Phase 2 qualitative data**

This chapter consisted of the discussion of the habits and themes that were identified in Chapter 6. It addressed and focussed on how habits relate to the success of athletes participating on different levels of performance.

## **Chapter 8 - Results and discussion: Phase 2 quantitative data**

This chapter addressed the aims and objectives of this study. The results of the measuring instruments were provided in this chapter. Results were also analysed and discussed throughout the chapter.

## **Chapter 9 - Discussion, recommendations and conclusion**

This chapter discussed the main results obtained in the different phases of this study and provided a critical interpretation based on the results and discussions presented in previous chapters. Limitations were discussed and recommendations for future research were made.

### **1.9 Summary**

Chapter 1 served as an introduction and provided an overview of the research problem, research question, research design, research method, aims and objectives of this study. The structure of this study was also outlined.

## CHAPTER 2

### Literature review:

### Habits, mindfulness and values

#### 2.1 Introduction

This chapter explores the concepts of habits, mindfulness and values. These concepts have been receiving a considerable amount of attention in recent research with an emphasis placed on their sole role in managing health behaviour (Kerr, Woods, Knussen, Watson, & Hunter, 2013; Verplanken & Melkevik, 2008). Habits specifically are linked to health behaviour and the role it can possibly play in changing detrimental health behaviour. This study is unique in that it encapsulates the combination of the three concepts into one study, which could not be found in any other study as yet. The interdependence of these three concepts on each other is noteworthy and this chapter builds on the existing research of habits, mindfulness and values on day-to-day life with a clear aim of appreciating the roles of these concepts on daily living and especially behaviour.

Chapter 2 attempts to explore habits in detail and accounts for its definition, functionality, history, development, neurological aspects and role in health behaviour. The Habit Formation Framework of Lally, Gardner and Wardle (2012) is used to create an understanding for the development of habits. As the research on habits evolves, the role of mindfulness in the maintenance of habits comes to the fore. This concept is explained and the influence of mindfulness and the absence of it in habitual behaviour is explored. The productive nature of mindfulness-based interventions on habit and behaviour change is highlighted. This chapter also examines the link between mindfulness and the process of changing and developing new habits.

To enhance the meaning and quality of this relationship the third concept namely values is introduced. The significance of values and the function it serves in developing and altering habits is explored. Values play a vital role in the understanding of habits and this chapter highlights the importance of mindfulness in linking values and habits with each other. The Disconnected Values Model of Anshel (2013) is used to explain and explore this link. Chapter 2 gives credence to each one of these concepts individually and further explores the relationship and influences these concepts have and can have on each other.

## 2.2 Habits

### 2.2.1 Defining habits, habitus and hexis

The focus on habitual behaviour of people stretches back to Aristotle and his explanation of habits and habituation by using the terms *hexis* and *ethos*. In more modern day theory, Bourdieu used the term *habitus*, which is also seen as the Latin translation of the Greek term *hexis* (Lockwood, 2013). The English language uses the term habit and the use of this term is twofold: firstly, it refers to a person's habits such as punctuality and secondly, it can refer to the way by which the habit was acquired such as learning to swim by habitual practice. Aristotle used the term *hexis* as reference to this first use of the term, habits in English and the word *ethos* referring to habits as behaviour that one has been accustomed to (Lockwood, 2013).

Lockwood (2013) drew from Aristotle's works to explain Aristotle's terminology and how it relates to today's English use of the word. Though Aristotle saw *hexis* as a state that one acquires due to repeated activities and that these repeated activities are specific to the specific *hexis*, he also indicated that a *hexis* determines one's feelings and that *hexis* is thus an "*entrenched psychic condition or state*" that is developed over time through an individual's experience. For Aristotle a *hexis* is thus "*an enduring but flexible state or disposition of soul that predisposes its possessor to act and feel a certain way in specific contexts*" (Lockwood, 2013, p. 22).

In the English language, a habit is "*a settled or regular tendency or practice, especially one that is hard to give up; an automatic reaction to a specific situation*" (Habit, 2012). According to the Oxford English Dictionary in Southerton (2012, p. 337) habit can be used to describe: '*a settled or regular tendency or practice*'; *practices that are 'difficult to give up*'; *automatic reactions to a given situation*; *specific forms of dress*; *a 'bodily constitution*'; and *addiction, where repetitive behaviour becomes a psychological and/or physiological condition that produces an individual pathology.*"

It is congruent with the explanation provided by cognitive psychologist and pioneer in the field of habits, William James, who in 1890 referred to the functioning of habits as: "*In a habitual action, mere sensation is a sufficient guide, and the upper regions of brain and mind are set comparatively free*" (James, 1890, p. 115-116 as cited in Ormrod, 2008). This definition lends a rather static nature to habits whereas a *hexis* is more dynamic in that an individual has the scope to react in different ways to a situation, though the individual will always act according to an acquired *hexis* (Lockwood, 2013).



It is evident that various philosophers, sociologists and psychologists have indicated an interest in the concept of habit. Apart from Aristotle's writings on habit it "*was also a matter of interest to the nineteenth-century psychologists, including William James, for whom 'habit is the enormous fly-wheel of society, its most precious conservative agent. Twentieth-century Anglophone philosophy has discussed habit under the title of 'knowing how', which Gilbert Ryle, for instance presented as a kind of ability, a complex of dispositions. Others such as Polanyi or Fodor have preferred to speak in terms of 'tacit knowledge', whereas Bertrand Russell and others have spoken of 'knowledge by acquaintance'. Habit also became an important and recurrent theme in twentieth-century sociology from Max Weber to Pierre Bourdieu*" (Moran, 2011, p. 4).

The French anthropologist and sociologist, Pierre Bourdieu, retrieved the old philosophical concept of *habitus* in 1967. He explained *habitus* as "*dispositions through which we perceive, judge, and act in the world*" (Wacquant, 2008, p. 6). Bourdieu advocated that *habitus* is structured by social forces and that exposure to particular social conditionings will be internalized by the individual, hence leading to unconscious schemata of behaviour. He distinguished between field and capital and suggested that the interaction of these two concepts influences the development of a specific *habitus*. Therefore, an individual's position in society (capital) and the specific space (field) in which the individual functions will influence the development of specific *habitus* (Wacquant, 2008). Fields are seen as metaphors for the domain of social life and sport can be seen as a field in Bourdieu's concept of *habitus* since sport is a social space and a domain of social life (Cargile, 2011). A field includes "*prescriptive rules and norms, but above all else a field is a contextually-grounded, systematic manner of relating*" (Cargile, 2011, p. 12).

Bourdieu argued that people from similar social groups tend to share similar preferences for most goods and practices (Bourdieu & Nice, 2010). Looking at habits from Bourdieu's perspective will entail that it is likely for different social groups to have preferences for certain sports because of their collective position in social space.

This study takes into account the different perspectives towards habits, especially those of *hexis*, *ethos* and *habitus*. For the purpose of this study, the term habit will be used throughout due to it being the more recognized term in English today and because it links well with Aristotle's use of *hexis* and *ethos*, though in modern day English one does not have a term that can ideally and accurately substitute the meaning of *hexis* as explained by Aristotle.

These historical views, debates and conceptualizations of the term habit are essential in understanding the functioning of the term in the 20<sup>th</sup> Century. It is a term that has evolved through the input of philosophers and researchers alike in an attempt to further and possibly deepen the comprehension of human behaviour.

Crossley (2013) opened the discussion about the contemporary view of *habit* and *habitus*. In modern day society the difference between these two concepts seems to be elusive. He reflected this uncertainty well: “*Habit and habitus are question-begging concepts and we have more to gain by addressing these questions than foreclosing them through reference to intellectual authorities*” (Crossley, 2013, p. 137). He also illustrated the confusion of the contemporary usage of the terms by pointing out that *habitus* and *habit* have been defined differently by philosophers and theorists and that in modern day society, the meaning of especially *habit* is variable. This seems to be the dilemma we are facing at the moment and it is therefore crucial to open the debate on the use of these terms as Crossley has initiated (Crossley, 2013).

Southerton (2012, p. 341) captured the link between the modern day definition of habit and habitus of Bourdieu beautifully in his description of habit as a disposition: “*a propensity or tendency to act in a particular manner when suitable circumstances arise. Dispositions can provide an impetus to action both in situations which do not necessarily occur very frequently and, by virtue of transposition, in situations not previously encountered.*” He noted that dispositions are culturally derived. This in turn correlates with a feature of habit in that it “*reflects stable practices as entities that permit and are reproduced through recurrent, non-reflexive and culturally shared actions*” (Southerton, 2012, p. 349) and “*habits and routines are observable patterns of action that are socially conditioned and a fundamental basis of much (if not most) everyday action*” (Southerton, 2012, p. 351). This is consistent with the works of Bourdieu and bridges the path between the philosophical and psychological understanding of habit.

For the purpose of this study the following definition of habit will be used: “*A habit is an action that repeats itself with no (or minimal) conscious planning. It repeats itself when the situation is conducive to such behaviour and the person has a goal of fulfilling his/her need in some way by doing what they normally do. This action can then become a habit*” (De Villiers, 2009, p. 18). According to this definition, a habit is a form of repetitive behaviour and it serves a specific function for the individual engaging in the behaviour. This understanding of habit is important to ensure consistency of the term throughout the study. The accepted definition of habit for this study is the definition used in the Shadowmatch™ Worksheet, which forms part of the second phase of this study (De Villiers, 2009). By using the

Shadowmatch™ definition of habit a consistency of terminology comprehension is established for the entire study and confusion regarding terminology definition is limited.

### 2.2.2 Characteristics of habit

The characteristics of habits mentioned by De Villiers (2009, p. 18) guide the concept of habits in this study: *“habits are learnt behaviour, formed through repetition, are very predictable, extremely difficult to break, all habits are not equally well established, habits can transcend contextual boundaries and that any behaviour can become a habit.”* Gray (2014) noted that habits provide comfort, structure and symbolize an individual’s identity by the way he/she chooses to structure his/her living of daily life. She gave recognition to the natural change of habits as a consequence to an individual’s change of circumstance and abilities through the aging process. Gray (2014) explained that the older person will be more sophisticated in his/her employment of habits and choose habits that will bring about pleasure and comfort based on his/her need to reserve energy. The older person is likely to go about this process through self-reflection and self-knowledge. It is by the engagement in their deep seated habits that older persons feel that they have a sense of control (albeit possibly illusionary) in their changing circumstances and this feeling of engaging in familiar behaviour limits anxiety should they experience abrupt changes in their circumstances.

According to Wood and Neal (2009), a habit requires an automatic execution of behavioural patterns as a response to a specific context that the individual has come across in the past. Van Bree et al. (2015) mentioned that automaticity as well as repetition and expression of identity are features of habits. Dezfouli and Balleine (2012) gave ordinance to the complexity of habits explaining that behaviour can at first be orientated to achieve a certain goal and as these goal-orientated behaviour becomes habitual in nature it grows in complexity due to these behaviour being “chunked” and integrated with other motor movements. They indicated that the offset of a certain habitual action will activate other linked movements and therefore activate more than just the specific habitual action.

Habits are sensitive and dependent on stimuli, relatively inflexible, reflexive and will tend to form a link between antecedent stimuli and action rather than the consequence of the action (Dezfouli & Balleine, 2012). The neurological patterns created in the brain structure forms the biological substrate of habits (James, 1890/1981, as cited in Dezfouli & Balleine, 2012). The neuroscience of habits is an essential component to the study of habits due to the automatic trait of habits. This will be discussed later in this chapter.

Habits require no attentional effort and therefore free the mind for self-reflection (Gray, 2014). Habits will regulate daily behaviour in familiar situations to the individual unless there

are regulatory processes or events that are strong enough to interfere with the usual automatic behaviour or if the individual finds him/herself in an unfamiliar situation (Neal, Wood, Wu, & Kurlander, 2011; Ouellette & Wood, 1998). It is within these unfamiliar situations that the strength of the habit will determine if the habit will surface (De Villiers, 2009).

### **2.2.3 Habit strength**

Habits are not all equally well established, therefore a differentiation exists in terms of habit strength. De Villiers (2009) distinguished between the various strengths of habits and it is important to note that De Villiers (2009) indicated four levels for behaviour to be recognized as a habit or non-habit: 1) Behaviour is not seen as a habit when the individual has to consciously make decisions as to how to react in a given situation. 2) When a habit is relatively well formed, the individual will be selective as to when to engage in the specific behaviour. The habit is thus not a dominant behaviour pattern in the individual's everyday life. 3) When a habit is well embedded, the individual will engage in the specific behaviour with ease and the habit will have a regular occurrence in the everyday life of the individual. 4) When a habit is strong, the habit will transcend contextual boundaries and thus be present in different situations. The individual's behaviour will be easy to predict and consistent. The recurrent patterns of the specific behaviour are key to determine the strength of a habit.

Watson proposed that a habit will become stronger the more a specific stimulus and response is associated with each other. He called this the law of frequency (Ormrod, 2008). Verplanken, Myrbakk and Rudi (2005) argued that habit strength and the frequency of habits are not dependent on each other. This means that a habit does not increase in strength based on the number of times the habitual behaviour is repeated. Verplanken (2006) used the example of driving a car to illustrate this point. One might learn a new route to work and get into the habit of driving this new route every day very quickly. But learning to actually drive a car might take a longer time to establish as a habit. The one is not necessarily stronger than the other. Maybe what is important to note is that repeated over time, it becomes easier to engage in the behaviour, especially when it is goal-directed and a strong association exists between the specific behaviour and the intended goal. By wanting to achieve a certain goal, the 'practiced' behaviour is evoked automatically, thus a habitual response is activated (Aarts & Dijksterhuis, 2000).

Ormrod (2008) and Verplanken et al. (2005) might all have valid points to argue, but it might just be that the ease by which an individual engages in habitual behaviour determines the

presence of the habit in the individual's life when an appropriate situation arises in which the behaviour can be repeated.

Verplanken and Melkevik (2008, p. 24) stated that a strong habit to exercise implies the *“fact that regular exercising is self-evident, does not require thought or deliberation to initiate, and is incorporated as part of a person's daily or weekly activities.”*

Individuals need less information before deciding how they are going to behave when their habits have increased in strength (Verplanken, Aarts, & Van Knippenberg, 1997). These individuals that have strong habits will not engage in much conscious thoughts as to the benefits and disadvantages of a specific action. Verplanken et al. (1997) found that experts in a given field will be aware of most choice alternatives and operate in a habitual fashion when making decisions.

It is evident that strength of a habit is important when predicting unhealthy snacking behaviour. In this regard, the strength of a habit is the most important and dominant predictor of unhealthy snacking behaviour (Verhoeven, Adriaanse, Evers, & De Ridder, 2012). Individuals are more likely to engage in unhealthy snacking if the behaviour has become so entrenched in their daily lives that it became a very strong habit. This strong habit outweighs the influence that other variables have on the prediction of whether an individual will continue with unhealthy snacking. Some of the variables found to be outweighed by habit strength are gender, education level, body mass index, marital status, age, perceived health consequences and an individual's intention to not snack unhealthily (Verhoeven et al., 2012). Habits thus have a crucial effect on eating behaviours.

The emotional aspects of habits cannot be left unturned. When an individual engages in a habit, his/her change in emotional intensity when engaging in the behaviour is less than what it would have been should the behaviour have been non-habitual (Wood, Quinn, & Kashy, 2002). These researchers also found that if an individual engages in a habit alongside more conscious, non-habitual behaviour, his/her emotional intensity will not be heightened due to the presence of the habit. Habits thus serve a function of saving energy. This is consistent with the work of Gray (2014) and Jager (2003) who also noted that habitual behaviour saves energy levels of individuals, especially the older generation. Wood et al. (2002) also noted that an individual can regulate his/her thoughts and emotions to think about something completely non-attached to the habitual behaviour engaged in at a specific moment. When an individual engages in non-habitual behaviour, the person's thoughts correspond with his/her behaviour, indicating that actions not repeated over time require thought more so than what would be required by the engagement in habits.

James asserted that *“human beings are mere walking bundles of habits”* (James, 1890, p. 127 as cited in Keith & Keith, 2004). This raises the question as to how much of what people do and say every day is representative of their conscious, unique character? Neal, Wood, Labrecque and Lally (2012) established that moderately strong habits will be triggered by an individual’s goals in an appropriate context and that strong habits will scarcely be influenced by an individual’s goals. In their study, habit strength was determined as a product of behaviour frequency and context stability. A habit will be seen as strong if the specific behaviour was consistently prevalent and the context was stable. Therefore, an ideal environment existed for the replication of behaviour that have consistently occurred successfully in the specific context. In this regard, the context cues in the environment will activate strong habits, regardless of the individual’s goals. Neal et al. (2012) and De Villiers (2009) recognized that an individual will have a reason for a habit to have developed as part of his/her everyday way of life. Habit thus serves a purpose in an individual’s life and does not exist without benefits (Anshel, 2010a).

In his work on habits and how they link with values, Anshel (2013) placed considerable emphasis on negative habits and how they limit the potential and contentment of an individual. He defined a negative habit as a behavioural tendency that has a *“deleterious effect on some aspect of the person’s quality of life”* (Anshel, 2013, p. 13). He also distinguished between emotional habits such as persistent anxiety and physical habits such as lack of exercise and explained that any form of negative habit will have a detrimental effect on some area of performance in an individual’s life. The tendency to behave in a certain way in specific situations and thus defined as a habit is echoed by De Villiers (2009). Anshel further noted that an individual will feel uncomfortable and find it difficult to function properly if he/she cannot freely live his/her behavioural tendencies (Anshel, 2010b, 2013). Anshel indicated however that these behavioural tendencies should be constructive and add value to the individual’s live (Anshel, 2010a, 2013).

## **2.2.4 Concepts related to habit**

### **2.2.4.1 Compulsive behaviour**

It is important to note the difference between compulsive behaviour and habits. Compulsive behaviour refers to *“a repeated response pattern to a negative emotional state (e.g., tension, anxiety or withdrawal) leading to undesirable long-term consequences”* (Sjoerds, Luigjes, Van den Brink, Denys, & Yusel, 2014, para. 5). Compulsivity has been defined as *“the urge to carry out the act; in the experience of the individual that particular act ‘has to’ be performed”* (Denys, 2013, as cited in Sjoerds et al., 2014, para. 5). Contrarily, habits are

characterized by direct stimulus-response contingencies without modulation by urges, thoughts or feelings, but are rather driven by direct motor-schemes (Sjoerds et al., 2014). In addiction literature, the concept of habit *“is frequently used interchangeably or in combination with compulsivity (e.g., “addiction as a maladaptive compulsive habit” or “compulsive drug seeking”) to indicate a persistent use of drugs in the face of negative consequences”* (Belin, Mar, Dalley, Robbins, & Everitt, 2008, as cited in Sjoerds et al., 2014, para. 5). To erase any confusion around the concepts of compulsivity and habit, the clear demarcation is the automaticity of habits, the fact that it is a non-attentional behaviour and not motivated to satisfy an urge as is the case with compulsive behaviour outlined here.

#### **2.2.4.2 Ritual**

Another concept that might be confusing to that of habit is ritual. Gray (2014, p. 3) explained the function of rituals: *“Rituals symbolize institutionalized habits that give structure and meaning to communal lives.”* She noted that it is through the participation in rituals that an individual acquires a sense of belonging and acceptance of his/her community.

Gray (2014, p. 3) distinguished between the different types of rituals and it is interesting to note that rituals are predominantly community-based:

*“rituals of birth such as religious circumcision or baptism assure the newborn’s membership in a religious community; rituals of death such as wakes and funerals both mourn the death and celebrate the life of the deceased in a manner prescribed by the community; rituals of puberty such as circumcision or ritual admission into a religious institution announce the adolescent’s entry into a community of adulthood; and rituals of marriage formalize a commitment to another, witnessed and recognized by the community.”*

Rituals and habits provide structure to an individual’s life and both acquire repetitive actions. The clear demarcation with regards to habit and ritual is the community-based aspect of rituals. The daily habitual behaviour of an individual does not necessitate the tradition of community events. Also, participation in rituals requires thought and reflection whereas engagement in habits is of an automatic nature without attentional focus to engage in the specific behaviour (Anshel, 2013; Gray, 2014).

Rituals also occur in the world of sport. Loehr (2005) advised athletes to use rituals to manage their energy during events. He defined a ritual as a *“consciously acquired positive habit, fuelled by deeply held values, that facilitates full engagement”* (Loehr, 2005, p. 167). He continued to explain that energy is best conserved through the use of habits and this links with Gray (2014) who explained that older persons also manage and save their energy levels by engaging in habits and thus creating familiar situations and actions in their daily

lives that do not require direct thought and energy consumption. Rituals in sport can include and are not limited to dietary and hydration management, sleep and rest, concentration management and pre- and post performance routines (Loehr, 2005). Both Gray (2014) and Loehr (2005) identified rituals as a form of habit. A differentiation between a habit and ritual might be that a ritual can become a superstitious crutch for athletes in that they believe that if they engage in certain behaviour before competition they will achieve success and victory (Kremer & Moran, 2008).

Gray (2014) pointed out that older persons will continue to exhibit habits that work for them. It serves as an automatic default behavioural system. This is not necessarily the case with rituals. Rituals determined by a coach and directed to his athletes might work for some athletes, but not for others. It is unlikely then, based on value systems, for athletes to happily engage in prescribed 'habitual rituals' that do not work for them as indicated by Gray (2014) and Anshel (2013). Rituals can improve aspects of performance such as concentration but if the meaning attached to the ritual becomes a 'crutch' for success it will be detrimental to the performance of an athlete (Kremer & Moran, 2008).

#### **2.2.4.3 Routine**

Athletes often use the term routines rather than habits and these two terms enjoy equal meaning in this study. Moran (2012) explained the preferred action sequences and/or repetitive behaviours of athletes as routines. A habit is defined as an individual's tendency to engage in a specific behaviour more readily and with ease, than in other behaviour that is also feasible in a given situation (De Villiers, 2009). It is these preferred action sequences and behavioural tendencies that link routines and habits under the same umbrella in this study. Habits create consistent and predictive behaviour (De Villiers, 2009). This is the same characteristic attributed to routines (Moran, 2012). For example, the dominant behavioural sequence of basketball players before they take free throws have been linked with more successful results by Lonsdale and Tam (2008). According to De Villiers (2009) and Gray (2014), habits are preferred tendencies of behaviour and it is this consistent engagement in consistent behaviour that improves sport success as indicated by the study of Lonsdale and Tam (2008).

As can be seen from this segment of the literature study, the concept of 'habit' and the overlapping of the concept with other terms can lead to confusion rather quickly. It is easy to question if behaviour is actually a habit, a ritual, a routine, a compulsive behaviour or to even become confused with the terms of habitus, hexis and ethos. The concept of habit has more intricacies to it than what is visible on the surface. Noted above it is important to understand



the link between routines and habits and how rituals are defined and viewed for the duration of this study.

### 2.2.5 The formation of habits

Habits originate because evidence of past execution of specific behaviour is indicative of it being a likely successful treatment of a given situation. This is the view of Watson who posited that past experience explains and rationalizes mostly all future behaviour (Ormrod, 2008). Habits play a positive role in an individual's life because it supports the maintenance of health behaviours (Fleig et al., 2016). Habits are essentially beneficial for older persons because it lessens strain on cognitive processes such as memory and attention (Danner, Aarts, & De Vries, 2007).

Bourdieu's use of *habitus* has been criticized for its objective nature, questioning the individual's subjective influence on the maintenance and creation of habits. Husserl located *habitus* within a conscious subjective frame and Bourdieu has been critical of Husserl's acknowledgement of the subjectivity in the creation of habits (Moran, 2011). Husserl's contribution of the subjective nature of habits can imply that individuals can play an active part in forming, altering and maintaining habits and that habits are not entirely dependent on the social field and capital of an individual as proposed by Bourdieu in Cargile (2011), Moran (2011) and Wacquant (2008).

People and especially competitive athletes, tend to do what works and would therefore repeat successful past behaviour to achieve the desired effect. Ouellette and Wood (1998) believed that it is important to consider the role of past behaviour as a predictor of future behaviour and that the reasons for routine behaviour must be understood if behaviour is to be changed. Ouellette and Wood (1998) indicated that, in domains in which habits are less likely to develop, individuals will use deliberate reasoning processes to influence behaviour and that the influence of past behaviour will be decided upon based on the individual's intentions. Habits can also develop as a response to environmental events without the deliberate intent of acting in a certain way (Duhigg, 2012).

Here the idea of bad habits comes to mind. Bad habits are defined as behaviour that *"represents unproductive or undesirable behaviors that are well practiced and proceed relatively automatically with minimal effort and guidance"* (Ouellette & Wood, 1998, p. 56). These habits can be the result of previous good habits that are simply not useful anymore. Therefore, they do not contribute towards the individual realizing his/her goals because the actual behaviour seemed easy and a possible cost effective solution to a situation without it contributing to the realization of goals. It is also possible that the individual does not

recognize that certain habits have become bad habits and are actually hampering the individual's constructive functioning. It seems then that self-awareness and mindfulness of behaviour have an integral role to play in identifying the value of habits in an individual's sporting skills.

It is generally accepted that it takes 21 days for a habit to develop (Maltz, 1969). This is merely a perception as research has since proven differently. The development of a habit is a much slower process, which Lally, Van Jaarsveld, Potts and Wardle (2010) have found to range between anything from 18-254 days for behaviour to establish itself as a habit. They found that it took about 66 days for their participants to reach the asymptote of automaticity. Reasons for the large difference of days to form a new habit have been identified (and not limited to) as poor planning to develop a new habit, people forgetting to engage in their new choice of behaviour and lack of repetition of the newly planned behaviour (Lally & Gardner, 2013).

### **2.2.6 The Habit Formation Framework**

Lally and Gardner (2013) and Lally et al. (2012) proposed that habit formation requires progression through four stages:

#### *Stage 1 (Initiation phase)*

The individual decides that he/she wants to form a specific habit. This presupposes the requirement of intent.

#### *Stages 2 and 3 (Learning phase)*

The decision to act must be translated into action. This requires planning. The chosen behaviour must be repeated over time.

#### *Stage 4 (Stability phase)*

This stage links very closely with Stage 3. In this stage the individual must ensure that the repetition of the behaviour is done in such a way and under circumstances that will enhance the repetition of the behaviour that it will become automatic. This means for example, that the individual can repeat the behaviour continuously in the same environment or under the same conditions or add a cue that can forego the specific behaviour. It is during this stage that the strength of the new habit has reached a plateau and repeats itself automatically and without much thought.

Critical to this framework of habit formation is the individual's consistent repetition of the new behaviour (Lally & Gardner, 2013). Lally et al. (2012) also indicated that a newly formed

habit is very likely to persist once conscious thought and motivation to pursue the habit have diminished. This is due to the habit not being controlled by conscious thought and motivation but rather external cues in the chosen context or environment, hence the importance of behaviour repetition in specific contexts. Stage 1 indicated that at some stage in the building of behavioural patterns, people have a moment where they consciously direct the future course of habit development. It seems then that the human mind makes the decision to establish and cement a habit a number of times for it to take shape.

Duhigg (2012) explained this by referring to the cue-routine-reward habit loop. The cue (specific stimulus) is a prompt for a specific behaviour to occur and once the behaviour occurs, it is rewarded with either a physical or emotional reward. Neurologically, the human brain starts to crave the reward offered by the specific behaviour, the individual then engages in the necessary behaviour to produce the reward and stimulate the craving and a habit develops. As soon as a cue appears in an individual's world, the craving for the reward is experienced and the individual exhibits the needed behaviour for the reward.

Ji and Wood (2007, p. 274) contrasted the work of Belk (1975) who indicated that for example in the consumer environment, there exists five types of situational variables that influence an individual's shopping behaviour and assist in explaining an individual's shopping behaviour: *“(a) physical surroundings (e.g. location, sounds, lighting), (b) social surroundings (e.g., other people, social roles), (c) temporal perspective (e.g., time of the day, season of the year), (d) task definition (e.g., shopping for a gift vs. personal use), and (e) antecedent states (e.g., moods, fatigue).”* Belk (1975) understood that these variables function as cues and influence the conscious cognitive processes of a buyer.

On the other hand, Ji and Wood (2007) argued that these five variables do indeed serve as cues and can trigger behaviour by the cues becoming associated with specific memory responses, therefore minimizing the role of conscious thought and individuals' intentions to engage in specific consumer behaviour. The individual is therefore likely to base shopping behaviour on the cues and what it triggers within memory, thereby behaviour becoming more of an automatic response to the situation.

The explanation by Duhigg (2012) indicated that to understand the extent of habits and their influences on different spheres of life, it is vital to also understand the neurological processes involved in the formation, maintenance and change of habits.

## **2.2.7 Motivational and neurological influences on habits**

### **2.2.7.1 Motivation states**

Motivation is a general term that encompasses neuronal and physiological factors that initiate, sustain and direct behaviour (Kandel, Schwartz, & Jessell, 2000). These researchers differentiated between elementary drive states and personal, social aspirations acquired by experience as the two main classifying motivational states. Elementary drive states refer to the type of behaviour that will lead to the satisfaction of immediate needs such as hunger, cold and thirst. Personal and social aspiration refer to an individual's personal goals. Through their research, Kandel et al. (2000) indicated that motivational states pre-empt neurological occurrences which are important because it means that humans can think about and decide upon the habits that they have, would like to change or like to acquire. This is consistent with the work of Anshel (2013), Lally and Gardner (2013) and Lally et al. (2012) who indicated the importance of intention and decision making as a step towards the development of a new habit.

Drive states will direct behaviour away from negative goals and towards specified positive goals. Kandel et al. (2000) continued to explain the three functions of drive states, namely to direct behaviour towards or away from certain goals, organizing behaviour into a goal-orientated sequence and lastly, increasing alertness. These three functions mainly refer to everyday habitual behaviour of an individual.

Behavioural psychologist, Clark Hull, explained this concept in his drive-reduction theory that postulates that behaviour is motivated by an internal drive and that behaviour will be aimed to reduce and satisfy the drive. An individual can develop several ways of reacting to a stimulus and will move from the strongest developed habit to the next possible successful habit until the inner drive has been satisfied. In effect, habits function according to a hierarchy (Meyer, Moore, & Viljoen, 2000; Ormrod, 2008).

This emphasizes the importance of developing the correct and most efficient habits in the sport context in order for an athlete to make decisions faster and more accurately when faced with critical moments in a game or match. Having developed the most efficient context-driven habit will enable an athlete to not only save time but also much needed energy, because the athlete will automatically choose the best behavioural path of action instead of working through the least effective actions to finally perform what is needed.

An understanding of the neurological processes of habits is crucial to fully comprehend the nature of habits. No matter what clarifying concept of habits or habitus one chooses to relate to, neurological processes cannot be left out of the equation. Even though habitual

behaviour can be influenced by social domains and are relative to context as indicated by Bourdieu, or if habitual behaviour can directly be influenced by the subjective nature of the individual as proposed by Husserl, the muscles and thought still require neurological processes (Kandel et al., 2000).

### **2.2.7.2 Neurological influences**

In the famous medical studies about Molaison and Pauly, key areas in the brain were found to be responsible for memory and purposeful behaviour (Duhigg, 2012). Duhigg referred to these two cases by explaining that when Molaison's hippocampus was removed he could not retain information for longer than twenty seconds and hence experienced everything in life anew every single day. When Pauly suffered brain injury due to a viral infection, his treatment was based on what was learnt from Molaison's case. The area in the brain responsible for habitual actions has been found to be the basal ganglia. At the time of Pauly's infection, researchers were interested in learning more about habits and through experiments found that the basal ganglia was responsible for habitual functioning. Understanding this aspect was important in Pauly's case management and although Pauly lost considerable brain matter, he learnt to function by learning habits and living according to them (Duhigg, 2012).

In a recent study conducted by Daw, Gershman, Seymour, Dayan and Dolan (2011), it was found that brain activity was analogous when it performed goal-directed and habitual behaviour. The ventral striatum (located in the basal ganglia) is the area in the brain that is usually associated with habits. Tricomi, Balleine and O'Doherty (2009) identified the border of the putamen and globus pallidus, two basal ganglia sub-regions, as key areas in the building of stimulus-response associations. These areas are very closely interconnected and are thought to play a vital role in the pathway of the "*motor loop of the cortico-basal ganglia-thalamo-cortical pathway*" (Parent & Hazrati, 1995, as cited in Tricomi et al. 2009, p. 2230).

In their research, Daw et al. (2011) found that the ventral striatum was the area that showed signs of activity when participants engaged in goal-directed behaviour. This is significant since it indicates that the two decision making processes of the brain are not far removed from each other as indicated by Tricomi et al. (2009), which might have a tremendous effect on the replacement of habitual thoughts and behaviour with more goal-orientated thoughts and behaviour (Daw et al., 2011).

Goal-directed action is sub-served by the prefrontal cortex and dorsomedial striatum whilst habit-based behaviour is sub-served by the dorsolateral striatum (Balleine & Dickinson, 1998; Killcross & Coutureau, 2003; Yin, Knowlton, & Balleine, 2004; Yin, Ostlund, Knowlton,

& Balleine, 2005). These circuits responsible for goal-directed and habitual behaviour are simultaneously engaged, but may compete for control of behaviour. What is interesting to note here is that studies on rodents have shown that a disruption of the habit system reinstates goal-directed behaviour, suggesting that goal-related representations remain intact even once the habit system has come to control behaviour (Killcross & Coutureau, 2003; Yin, Knowlton, & Balleine, 2006).

The hypothalamus plays a crucial role in regulating behavioural states that are aimed at homeostatic goals such as the gratification of hunger and thirst needs (Kandel et al., 2000). Though the hypothalamus plays an active part in the satisfaction of physical needs, other factors such as the reinforcement of a pleasurable stimulus is regulated by neural systems that for example, use the neurotransmitter dopamine. It is these neural mechanisms that play an influential role in motivation states (Kandel et al., 2000). If one keeps this fact in mind, it is easy to understand why behaviour can become habitual if the reward of the behaviour leads to the individual being emotionally satisfied after engaging in the behaviour.

The use of motivation states and the understanding of the neurological processes involved in habits enable individuals to manage habits more effectively by maintaining, strengthening, learning new or changing destructive habits. It reminds one of the cue-routine-reward habit loop (Duhigg, 2012).

### **2.2.8 Changing habits**

In order to change a habit, it is important to have the same cue and reward but to change the routine (Duhigg, 2012). A crucial component of changing habits is the individual's belief that the habit can indeed be changed. The process of changing habits seems to require the giving of recognition to an individual's willpower to purposefully change a habit through manipulating the cue-routine-reward habit loop. If one combines the ideas of Duhigg (2012) and Neal et al. (2011, 2012), it seems that when one becomes aware, or are mindful, of usual, automatic actions and responses, one will be in a position to assess the quality of behaviour and the direction behaviour is steering one towards.

Jogging was introduced to the American population in 1963 in an attempt to introduce physical activity to the masses and curb a sedentary lifestyle (Latham, 2015). A programme was launched to assist people in readying their bodies to become physically active and take up the habit of jogging. Latham (2015) indicated that replacing one habit with another is not an easy task. In order to replace one habit with another requires an individual to be released from the captivity of the limiting habit (whatever that may be). Habits that are deeply established have to be conquered by learning, developing and nurturing new skills, activities

and behaviour. By doing so the individual therefore receives the time to get used to new behaviour and so creates new habits that can replace old and/or defective habits (De Villiers, 2009; Latham, 2015).

When it comes to exercise, Verplanken and Melkevik (2008) found that the decision to exercise is important and the success of the newly initiated exercise behaviour depends largely on how it is integrated in the everyday life of an individual. This means that if exercise is not incorporated as a regular activity that has its specific slot in an individual's daily programme the individual might be susceptible to various interferences to exercise. This is in accordance with the aims of getting people to take up jogging as a regular exercise activity (Latham, 2015).

Verplanken and Melkevik (2008) noted that habits are vital when exercise is initiated and to maintain the regular exercise programme. In the case of the mass American population in 1963, sedentary habits were replaced by a well thought out jogging programme that provided information and an action plan to start their course on developing a new and healthier habit that eventually replaced the unhealthy habit.

To change a habit requires an individual to weigh up the pros and cons of doing so. In their work with people with mental health problems, Kerr et al. (2013) found that individuals who assessed that their current mental state will deteriorate if they stopped with a habit such as smoking, refrained from giving up their smoking habit even though it would be financially beneficial for them to cease the habit. They therefore did not feel motivated to change the behaviour and this impacted their level of self-efficacy. Kerr et al. (2013) recommended that for behaviour change to occur, and specifically that of habit, it is vital to educate individuals on the effects and benefits of existing and new habits, to provide role models who have successfully changed their habitual behaviour and to address an individual's level of self-efficacy and motivation to change. Individuals who are thus educated on the coping mechanisms when replacing one habitual behaviour with another will feel more in control of their behaviour change and not fearful of what they will lose in the process of change.

It is all good and well when situations and daily routines remain consistent because it provides healthy grounds for habits to exist and grow strong. Walker, Thomas and Verplanken (2015) answered the question as to what happens if there is a disruption in behaviour. Disruptions have many forms of occurrences and they decided to investigate what will happen to habits if there is a disruption in the relocation of workers' offices and how this relocation will influence the travel habits of the workers to work. They found that individuals who changed their mode of transport to work experienced a concurrent decline of

habit strength of their previous mode of choice and an increase in habit strength of their new choice of travel mode. This indicates that there seems to be a window period after a disruption occurs in which an individual has the potential to fall back on the old habit, whilst incorporating the new habit that will eventually replace the old habit. Important to note is that old habits do not cease abruptly when there is a disruption, rather it decays over time.

Linking with this study is Beenackers et al. (2012) who found that the physical environment is key in predicting the choice of travel mode. Bicycle infrastructure was found to be the determinant for individuals to choose cycling as a mode of transport after a relocation event in their lives. The pro-bicycle environment was more conducive to behaviour change than an individual's attitude towards cycling as mode of transport or his/her intention of changing to cycling. Jones and Ogilvie (2012) found that after a relocation, change in habits is more effective when the relative convenience, cost, speed and reliability of the travelling mode are improved and emphasized. They argued that habit change is not as effective when mere health benefits of different transport modes are highlighted.

Habits are not easily changed through informational intervention (Verplanken & Wood, 2006). As explained above, the ideal method to alter behavioural patterns is to alter the environment in which the habit usually takes place. This tends to derail the habit and bring the behaviour under intentional control (Wood, Tam, & Witt, 2005). According to Verplanken and Wood (2006), this is also the ideal time to provide information aimed at behaviour change. These researchers have termed this approach the "downstream-plus-context-change" interventions, indicating that individuals are provided with new information, while there is a shift in their environment in which the habitual behaviour occurs. Their "downstream" concept originates from the account a physician once gave at an American heart Association conference where he explained how difficult he found it to intervene at the correct juncture in the care of people (McKinlay, 1975, p. 7):

*"You know," he said, "sometimes it feels like this. There I am standing by the shore of a swiftly flowing river, and I hear the cry of a drowning man. So I jump into the river, put my arms around him, pull him to shore and apply artificial respiration. Just when he begins to breathe, there is another cry for help. So I jump into the river, reach him, pull him to shore, apply artificial respiration, and then just as he begins to breathe, another cry for help. So back in the river again, reaching, pulling, applying, breathing and then another yell. Again and again, without end, goes the sequence. You know, I am so busy jumping in, pulling them to shore, applying artificial respiration, that I have no time to see who the hell is upstream pushing them all in."*



This quote illustrates that intervention is often aimed at an intellectual level where one educates an individual on the benefits and disadvantages of behaviour. By following this approach, one misses (and neglects) the environment and most opportune time and space to provide the intervention. Habits can therefore be optimally changed by altering the environment where the habits usually occur and at the same time provide information about the advantages of behaviour change (Verplanken & Wood, 2006).

### **2.2.9 Controlling habits**

Quinn, Pascoe, Wood and Neil (2010) recognized that it takes time for a habit to change. But what to do with the unwanted habit in the mean time? They proposed that one can control the habit by inhibiting the unwanted response when it is activated in memory by the specific cue. This is best done by vigilant monitoring of the cue and stopping the tendency to react to the response. This is achieved by the individual removing him/herself from the tempting stimulus and thereby limiting exposure to the context cue. The controlling of unwanted habits is also improved by the individual thinking about his/her response and deciding to not react as he/she usually does to the cue. It is more difficult for individuals to control their habits if they distract themselves from the cue.

Quinn et al. (2010) found that the monitoring of habits strengthened an individual's conscious and intentional processes. Noteworthy is that the monitoring of habits and cues is effective when an individual is attempting to control strong habits but does not necessarily want to influence weak habits. This is due to the individual not having to override behaviour that has been seated in memory over time. Controlling habits by vigilant monitoring will be even more successful if the individual learns a new and more productive habit during the same time in order for the strong, unwanted habit to be replaced by a more conducive habit (Quinn et al., 2010).

From this segment, it becomes clear that habits do not function as a sole entity in an individual's life. The autonomous nature of habits can result in an individual not being aware of behaviour and even reasons for engaging in certain behavioural patterns. Paying conscious attention to current experiences allows an individual to be aware of behaviour and to question intentions and reasons for behaviour without judging the behaviour (Fabrega, 2010). To comprehend the nature of this typical type of awareness of behaviour and paying attention to actions, it is vital to explore the role of mindfulness and its influence on the management and understanding of habits.

## 2.3 Mindfulness

### 2.3.1 Defining mindfulness

Mindfulness is a specific way of giving attention. Being mindful entails an individual paying attention in the here-and-now in such a way that it is without judgment (Gilbert & Waltz, 2010; Kabat-Zinn, 2009). Awareness and attention are the two key parts of conscious functioning on which mindfulness is based (Brown, Ryan, & Creswell, 2007). Mindfulness has its origin in the Pali language where the word ‘sati’ implies concepts such as awareness, attention and remembering (Siegel, Germer, & Olendzki, 2009).

The concept of mindfulness forms part of the cognitive framework of this study. Descartes introduced the concept of mental structure and thereby influenced the study of thought in early cognitive theory. It was Descartes who *“inspired the method known as introspection, which involves an examination of one’s mind and its contents”* (Cockcroft, 2009, p. 316).

Mindfulness has an introspective nature where the individual is attuned to his/her own thoughts and feelings (Kabat-Zinn, 2009). Individuals are attentive to impulses and influences of circumstances on mood, thoughts and feelings. The mindful individual is likely to engage less in over-indulging, negative and destructive impulses (Gilbert & Waltz, 2010). This is critical if mindfulness is to be used as an aid in changing habits as Duhigg (2012) explained. In order to change a habit one has to be aware of the cue, the routine, as well as the reward the specific behaviour presents to the individual.

### 2.3.2 Habit and mindfulness-based interventions

In contrast to being mindful, the individual will engage in thoughtless automatic and stereotypical actions when reactions are instinctive and without much awareness or thought, in essence, habitual behaviour. Individuals are likely to develop habitual behaviour if they are not paying enough attention to themselves since a sufficient degree of attention to oneself is necessary to exert self-regulatory processes (Brown et al., 2007).

This is specifically important when influencing health behaviour. Fulwiler, Brewer, Sinnot and Loucks (2015) acknowledged that traditional health behaviour interventions tended to focus on changing or creating habitual behaviour (such as eating and exercise habits) in an attempt to assist individuals in living healthier lives. They also contended that not enough emphasis has been placed on the reasons why unhealthy behaviour originated in the first place. Stress and emotions could be the cause of unhealthy habits and therefore mindfulness-based interventions deserve attention (Fulwiler et al., 2015).

In a study involving one individual who went through a mindfulness-based smoking cessation programme, the value of mindfulness training proved significant in assisting the individual to stop smoking for a period of four years after the programme ended (Singh et al., 2011). Through becoming more aware of his smoking habit and learning to regulate his behaviour and coping with emotions, the individual was enabled to become more conscious of his health behaviour. Even though only one man with a mild mental disability participated in this particular study, it is noteworthy because he was able to regulate his smoking behaviour successfully following a mindfulness-based intervention programme. Complementing this one-man-study is the work of Davis, Fleming, Bonus and Baker (2007) who found individuals who participated in a mindfulness-based intervention programme and continued with meditation practices, quit smoking and reduced their levels of stress and emotional distress. It seems that being mindful has an impact on behaviour, and in these studies, on habitual behaviour.

When dealing with weight loss, Fulwiler et al. (2015) found mindfulness-based intervention to be specifically vital in developing self-efficacy in individuals, which assists individuals to deal with stress and negative emotions and in turn prevents emotional eating leading to overweight and other health problems such as cardiovascular disease. Although there is no evidence indicating that mindfulness-based intervention programmes are more effective than other interventions in dealing with weight loss and management of cardiovascular risk, it is vital to note that studies based on mindfulness-based intervention have had positive results in managing weight (Fulwiler et al., 2015).

Mindfulness-based intervention has been linked with reducing the association between negative affect and urges in a study conducted with female smokers. The smokers who were encouraged to be mindful in their reactions to urges found that negative emotions did not predict their smoking behaviour (Adams et al., 2013). Through being mindful they were able to deal with their emotions in a proactive way, rather than allowing it to trigger regular smoking behaviour.

It seems that mindfulness plays an effective role in managing a variety of health behaviour. Individuals who received mindfulness-based intervention for sleep and anxiety problems experienced improvements in their sleeping habits and feelings of tension (Bei et al., 2013). Mindfulness-based intervention is a possibility that can be kept in mind when following an eclectic approach when working with clients who wish to incorporate healthy behaviour in their lifestyles or change unwanted and harmful health behaviours.

Mindfulness training aims at developing an increased awareness of the physical and mental activities from one moment to another that an individual experiences (Kabat-Zinn, 2011). Combining mindfulness training with other forms of intervention in altering and improving health behaviours can be an effective way in promoting a healthy diet and physical activity among individuals (Salmoirago-Blotcher et al., 2015).

### **2.3.3 The role of mindfulness meditation and trait mindfulness**

*"Mindfulness meditation is an integrative form of meditation that aims to cultivate awareness of the participant's current experience (notably their thoughts and feelings), as well as an attitude of non-judgment towards this experience"* (Lea, Cadman, & Philo, 2015, p. 53). Creating awareness of individual's tendencies to mindlessly go about their daily lives is a key component to mindfulness meditation. Individuals are made aware of their habitual actions, thoughts and feelings. Instead of going on autopilot, individuals develop the skill of rather being aware of, and truly present in the moment, acting/feeling/thinking uniquely instead of responding as they would usually do, thus, out of habit (Lea et al., 2015).

As individuals start to notice their autopilot tendencies, they have the opportunity to create a different type of habit by becoming aware of the actual happenings in the present moment and how their minds/bodies are going to react to it. It is this interplay between the mindful activity and the wider awareness of what is happening in the (habitual) body-mind that diminishes the sometimes dominant role that habits play according to Crossley's views (Crossley, 2013; Lea et al., 2015). Where Crossley emphasized the role of dialogue and judgment regarding how a body-mind ought to function, Lea et al. (2015) rather criticized these and postulated that mindfulness meditation brings about an awareness to how the individual operates in a non-judgmental way that doesn't necessarily have to result in the change of habit.

Cahn and Polich, 2006, as cited in Murphy, Mermelstein, Edwards and Gidycz (2012, p. 341) defined trait mindfulness as *"the level of mindfulness a person has during everyday activities, as opposed to state mindfulness, the level of mindfulness a person obtains during, or subsequent to, engaging in mindfulness meditation exercises."* It is believed that trait mindfulness will increase over time when an individual receives mindfulness training. Murphy et al. (2012) found that better physical health was associated with better sleep quality, as well as healthier eating patterns and levels of trait mindfulness. It was also found that trait mindfulness predicted physical health more than health habits did.

An example of a mindfulness training exercise is an activity whereby an individual becomes aware of his/her own breathing. The individual goes through a series of directive attention

statements in order to focus on the entire breathing experience. The individual positions him/herself in a comfortable position before the directions (via an individual being present and giving the directions, or a digital recording to which the individual listens) commence (Lea et al., 2015, p. 53-54):

*"a. 'Bring your awareness to the level of physical sensations by focusing your attention on the sensations of touch and pressure in your body where it makes contact with the floor and whatever you are sitting on.*

*b. Now bring your awareness to the changing patterns of physical sensations in the lower abdomen as the breath moves in and out of your body.*

*c. Focus your awareness on the sensations of slight stretching as the abdominal wall rises with each inbreath, and of gentle deflation as it falls with each outbreath.*

*d. There is no need to try to control the breathing in any way – simply let the breath breathe itself. As best you can, also bring this attitude of allowing to the rest of your experience. There is nothing to be fixed, no particular state to be achieved. As best you can, simply allow your experience to be your experience, without needing it to be other than it is.*

*e. Sooner or later (usually sooner), your mind will wander away from the focus on the breath in the lower abdomen to thoughts, planning, daydreams, drifting along – whatever. This is perfectly OK – it's simply what minds do . . . When you notice that your awareness is no longer on the breath, gently congratulate yourself – you have come back and are once more aware of your experience!*

*Then, gently escort the awareness back to a focus on the changing pattern of physical sensations in the lower abdomen, renewing the intention to pay attention to the ongoing inbreath and outbreath, whichever you find. . . . As best you can, bring a quality of kindness to your awareness, perhaps seeing the repeated wanderings of the mind as opportunities to bring patience and gentle curiosity to your experience."*

In another exercise, the individual's attention is brought to an awareness of the present moment. In this exercise the individual lies down comfortably for a body scan. A teacher (in person or via an audio recording) directs the individual to focus his/her attention around all the areas of his/her body (Kabat-Zinn, 2002, as cited in Lea et al., 2015):

*"The challenge is, can you feel the toes of your left foot without wiggling them. You tune into the toes, then gradually move your attention to the bottom of the foot and the heel, and feel the contact with the floor. Then you move to the ankle and slowly up the*

*leg to the pelvis. Then you go to the toes of the right foot and move up the right leg. Very slowly you move up the torso, through the lower back and abdomen, then the upper back and chest, and the shoulders. Then you go to the fingers on both hands and move up the arms to the shoulders. Then you move through the neck and throat, the face and the back of the head, and then right on up through the top of the head."*

Mindfulness allows an individual to be a witness to his/her own thoughts. Wong (2004) contended that being a witness to one's thoughts and judgmental views, makes it easier for an individual to end habits of mind such as labelling and judging. Being aware of those thoughts that have been dominated by habits enables an individual to make choices in a given situation rather than to behave in a habitual and mindless manner (Goh, 2012; Kabat-Zinn, 2011).

Developing self-awareness about bad habits can create discomfort for individuals when realizing the extent of their bad habits (Goh, 2012). This has implications for the changing of habits since in Goh's study, the students' conscious dissatisfaction with their bad habits was the start of them devising strategies to change those habits. This means that not only does information on a cognitive level through education or a change in environment spark the change of a habit as discussed earlier in this chapter, but so does emotions. Merely by including mindfulness and creating awareness of habitual behaviour (and in this instance bad habits) can the effect of disgruntlement and disapproval of these habits cause an individual to make changes to habits. Being mindful in itself may also be considered as a habit as one of the students pointed out that one of his/her strategies to become more mindful was to make a habit of constantly being aware of his/her behaviour.

If behaviour is to become automatic on the sport field, the required behaviour should be practiced on a continuous basis as to allow a habit to form in order for the unconscious mind to work effectively when achieving a state of flow (Lazarus, 2006). This has been evident in the one year follow-up study on the effects of mindfulness training conducted by Thompson, Kaufman, De Petrillo, Glass and Arnkoff (2011). Golfers and archers in this study experienced an overall heightened state of flow in their sport experiences and some also experienced an increase in their positive experiences of their sport and overall life satisfaction due to mindfulness training. This indicates a definite correlation between the interchangeable application of sport specific training and experiences in and of everyday life. If this correlation could be found in a study on the mindfulness of golfers and archers, the possibility exists that a link could also be found between the correlation of athletes' habits in other sport codes and the life domain outside of sport.

Mindfulness has a positive influence in the performance enhancement of young elite figure skaters (Bernier, Thienot, Pelosse, & Fournier, 2014). Following a mindfulness-based intervention, figure skaters experienced improved performances in comparison with the control group. Though only two young figure skaters participated in the mindfulness-based training, the results are indicative of the role that mindfulness can play in the sport context. The researchers indicated that for mindfulness-training to have a substantial effect on sport performance, the athlete has to actively engage in the mindfulness training throughout the process. One of the figure skaters also experienced a heightened sense of commitment which is an added benefit of mindfulness training in sport (Bernier et al., 2014).

Mindfulness-based training have shown positive results on skill acquisition of novice dart throwers (Zhang et al., 2016). Their dart-throwing performance, mindfulness, state of flow and experiential acceptance, improved and were sustained in post-intervention tests and follow-ups. The implication of mindfulness-based training is also beneficial for coaches as was found by Human (2015) in her work with cricket coaches. The coaches in her study indicated an increase in their understanding of cricket and the benefits of mindfulness for their players. After going through mindfulness-based training they could implement their newfound knowledge in their coaching role and subsequently enhanced the sport experience of their players.

With habits, the responses are automatic and regulated by the basal ganglia as pointed out earlier. These responses are similar to those of 'being in the zone' or 'acquiring a state of flow', when athletes' behaviour is automatic and they experience a state of focus on a task that is free of conscious thought, like nothing else matters (Csikszentmihalyi, 2008). It is for this reason that visualization exercises are encouraged, because it can assist an athlete to reach this state and execute the required physical action in order to perform well (Cooper & Goodenough, 2007; Lazarus, 2006; Noble & Watkins, 2003; Orlick, 2008).

Ellen Langer, 1989, as cited in Amel, Manning and Scott (2009) defined mindfulness in a manner that can be applicable to and of benefit to athletes. She noted that mindful individuals will consider aspects of a situation before engaging in a habit. This can be conducive to better sport performance if athletes first think and then behave rather than engaging in automatic actions that might not fit the situation/game as best possible. Another point for consideration is that mindful individuals are likely to broaden their knowledge base by seeking new information (Amel et al., 2009). This is a key aspect in sport performance as an athlete can benefit by keeping up to date with latest trends for improvement in a specific sport code and thereby ensure that he/she does not stagnate with his/her usual way of preparation, performance or approach to competition.

Langer, 1989, as cited in Amel et al. (2009) noted that a mindful individual has the ability to take control of a situation by altering his/her thoughts and becoming process orientated rather than outcome orientated. This is exactly the approach needed for successful sport performance in which the athlete focuses on process and does not get caught up in external aspects such as final standings and results (Moran, 2012). Langer also mentioned that mindful individuals are, due to their incorporation of multiple perspectives in a situation, more in tune with the emotions of others and therefore likely to understand others and behave in a way that is sensitive to the needs of those around him/her. In a team context, the awareness of others and their needs and roles are beneficial to team harmony (Orlick, 2008).

A link between mindfulness, intention and behaviour has been noted by Chatzisarantis and Hagger (2007) and Brown and Ryan (2003). Mindful individuals are more likely to behave in a way that is congruent with their intentions. Amel et al. (2009) added to this that an individual's intentions to behave in a sustainable way can ensure the sustainability of behaviour if the individual engages with his/her behaviour in a mindful way. In contrast to this link, David, Black, Sussman, Johnson and Milam (2012) found that trait mindfulness weakened this link in the context of unhealthy behavioural outcomes such as smoking and that mindful adolescents at risk of smoking had a reduced rate of smoking in comparison with their peers who were not mindful. The mindful adolescent takes note of health warnings of smoking and this subsequently influences his/her rate of smoking. The mindful adolescent, knowledgeable of the health risks of smoking will smoke less. The fact remains though, that whichever way one seeks to comprehend a link between mindfulness, knowledge and habit, the link exists either by maintaining or changing healthy or unhealthy habits.

A clear difference between mindfulness and habit has been identified by Brown and Ryan (2003, p. 3-4): *"habit indicates a behavioral regulation that is characterized by diminished awareness of and conscious attention to what is happening at the present, whereas mindfulness indicates an enhanced attention to and awareness of the present reality."* A practical application of this definition can be found in Chatzisarantis and Hagger (2007) who reported that individuals who exercise as a habit and are not mindful are less likely to act on their intentions than those individuals who might not be habitual exercisers but rank high on mindfulness. This has implications for the sport context where athletes train on a daily basis and have built habits/routines into their training and performance regimes (Moran, 2012; also see Chapter 5 of this study). Consequently, athletes who are mindful are more likely to train on days that they might not feel like it but have the intention to do so anyway, rather than to stay at home and miss out on crucial physical preparation.



Individuals who are mindful have the ability to also control their habits and this is the proposed reason by Chatzisarantis and Hagger (2007) on why mindful individuals are more likely than the less mindful individuals to follow through and act on their intentions. They do not get manipulated by their habitual behaviours or environment that will sidetrack them from acting on their intentions. Mindful individuals, in comparison with less mindful individuals, are more aware of their behavioural routines and precursors of their behaviour (David et al., 2012).

### **2.3.4 Benefits of mindfulness**

Brown et al. (2007) highlighted five benefits of mindfulness. Firstly, it allows an individual to develop insight into his/her needs, thoughts and feelings and therefore, assists the individual in making informed decisions based on awareness and knowledge of him/herself, rather than getting involved in habitual thoughts and behaviour. Secondly, a mindful approach to life exposes an individual to a situation as it objectively is, without perception and judgment that can cloud an individual's experience of a given situation. The individual therefore learns to approach and experience situations by adapting cognitive, emotional and behavioural responses to best fit the situation.

Thirdly, a mindful individual will be willing to experience a situation for what it is and accept it without trying to avoid it or change it to fit into his/her mindset. A fourth benefit entails health benefits. Mindful individuals experience less stress and report feelings of an overall healthy state. This was confirmed by Brown, Weinstein and Creswell (2012) who found that mindful individuals experienced lower cortisol levels and emotional responses such as negative affect and anxiety. Lastly, mindful living enables an individual to integrate the different spheres of his/her functioning in a meaningful manner by being more attentive to the situation he/she finds him/herself in, the people he/she comes into contact with and to be aware of a variety of choices available in a given situation. The individual becomes an active participant in his/her own life (Brown et al., 2007).

Every athlete brings a unique dynamic to the sport experience (Cooper & Goodenough, 2007). Drawing attention to the unconscious dynamics of an athlete's everyday habits will enhance the understanding of the ingrained processes that contribute to the athlete's sport experience and subsequent performance. In an attempt to understand the interconnectedness of habits and mindfulness, it is important to include the Disconnected Values Model in the equation in order to identify a possible key driving force of habits and the role that mindfulness plays when an individual is aware of his/her habits and value system.

## 2.4 Values

### 2.4.1 Defining values

Rokeach, 1973, as cited in Anshel (2013, p. 111) defined values as *"core beliefs that guide behavior, provide impetus for motivating behavior and provide standards against which we assess behavior."* Gordon (1975, p. 2) suggested that *"values are constructs representing generalized behaviors or states of affairs that are considered by the individual to be important."* Anshel (2005, p. 269) defined values as that which *"represent a self-statement about what is important to an individual – the passion, purpose, and mission that ignites the energy needed to establish and meet goals and experience a high quality of life."* What these three definitions have in common is that values have a high level of importance, that it represents and provides a certain standard according to which the individual behaves and that there is a strong link with behaviour and specifically the guidance of behaviour. This study's understanding of values is based on these definitions and gives credence to the impact and importance of values in an individual's life.

Rokeach (1973) pointed out that an individual's behaviour can be better understood with the knowledge of the individual's values, since values contribute largely to the development of an individual's character and uniqueness. This view extends the role of values to contribute towards the unique traits of an individual and points to the role that values play in influencing the development of behaviour unique to the individual. The understanding of values and behaviour implies that there is an awareness of, and attention to the specific behaviour and values that have to be understood. This pertains to the role of mindfulness and the role mindfulness plays in understanding the values and behaviour, since one of the key components of mindfulness includes attention by observing moment-to-moment internal and external experiences (Bernier et al., 2014).

Super (1995) explained that values play a much more influential role in determining behaviour than attitude and interests. The reason for this is the stable nature of values and the solidity of its entrenchment in an individual's character. Anshel (2013) pointed out that values will therefore continue to influence behaviour even long after an individual's interests have satiated and/or the individual has undergone an attitude change.

The extent to which certain values will continue to influence behaviour can be best understood if one gives adherence to the value hierarchy proposed by Lachman, Nedd and Hinings (1994). This hierarchy entails that core values are values that endure and peripheral values are those that can be altered. Core values are stronger held by an individual, less likely to change and more important than peripheral values. It was suggested that more than

one value come into play when decisions need to be made and that the hierarchy will determine what decision will be made, with the core values carrying more weight than the peripheral values (Lachman et al., 1994).

Lee and Trail (2011) contended that core values are not situation bound and that peripheral values are likely to be situation specific. Rokeach (1973) referred to the hierarchy of values as a value system. Rokeach's value system gives preference to the higher order of importance of some values, more so than other values.

Schwartz (1992, p. 4) noted that values: *"(1) are concepts or beliefs, (2) pertain to desirable end states or behaviors, (3) transcend specific situations, (4) guide selection or evaluation of behavior and events, and (5) are ordered by relative importance."* These five characteristics of values as identified by Schwartz (1992) refer to the importance of values, an existing hierarchy of values, that values are not context specific, that it influences and thus guides behaviour and that values refer to its role in influencing the individual to engage in a manner that will produce desirable behaviour. His understanding of values and the role it plays in developing and sustaining behaviour is supported by the work of Anshel (2013), Lachman et al. (1994) and Rokeach (1973).

It is important to note the view of Schwartz since this study incorporated The Portrait Values Questionnaire developed by Schwartz (1992). This questionnaire recognizes the top 10 human values as power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity and security (Beierlein, Schmidt, Rammstedt, Davidov, & Schwartz, 2012). It is not necessarily a fact that these 10 values are likely to be the top 10 values of each individual since values are mostly influenced by culture, age, gender, environment, religion and life experiences (Anshel, 2013). All these areas of possible influences on the development of values are consistent with the conceptualization of values in that values contribute to the unique character of an individual which will be unique to the individual's unique environment (Rokeach, 1973).

The interplay between values and behaviour can lead to a better understanding of the unique relationship between these two concepts. The Disconnected Values Model provides insight into values and how it influences behaviour and especially habits (Anshel, 2005).

#### **2.4.2 The Disconnected Values Model**

Mark Anshel's Disconnected Values Model serves as this study's theoretical model that accommodates the three concepts namely habits, values and mindfulness (Anshel, 2010a). It is a cognitive behavioural model in that it acknowledges negative health habits and presupposes that an individual is more likely to engage in negative behaviour if its

consequences is perceived to outweigh the opposite positive behaviour (Anshel, 2005). It implies that the intensity of a habit must be taken into account when habit-changing-intervention is planned. Weak and moderate habits are known to be performed with lower frequency than the stronger habits (Lally et al., 2010). It is only when an individual realizes that the consequences of the negative habit are not consistent with his/her values that an attempt will be made to change the habit (Anshel, 2005, 2007a).

Anshel developed the Disconnected Values Model to address the use of banned substances in sport (Anshel, 2005). He postulated that merely educating athletes about the detrimental effects of using banned substances does not effectively deter them from engaging in drug-taking behaviour. In order to prevent athletes from drug-taking, Anshel (2005) suggested that one should address unethical behaviour on a spiritual level. This includes assisting an athlete to create awareness in terms of his/her values and assisting the athlete to engage in behaviour that is consistent with these values. By doing so the cognitive behavioural framework of Anshel's Disconnected Values Model is illustrated.

An athlete is more likely to experience happiness and fulfillment when behaving in a way that is consistent with his/her personal values. When an individual has a sense of purpose he/she will have a desire to be involved in activities that are meaningful to him/herself and therefore also contribute to the attainment of personal goals and aspirations (Anshel, 2013).

This phenomena is accounted for by Anshel's model that is predicated on two postulates (Anshel, 2007a). The first postulate holds that an individual will engage in behaviour that is conducive to reaching personal goals and aspirations. This behaviour reflects the individual's values and beliefs about him/herself. An individual is more likely to engage in behaviour that is reflective of self-beliefs and values and will act consistently according to these values and beliefs (Anshel, 2007a). Frankl distinguished between three central values: the experiential, creative and the attitudinal (Frankl, 2008). According to Frankl, the most important of these values is the attitudinal that pertains to how people react to experiences. For Frankl, the human capacity for self-awareness seemed to have been a cornerstone for the fundamental principle that an individual can choose how he/she will react to a given stimulus.

The second postulate holds that *"that the primary motivators of normal human behavior consist of three stages: (a) to identify a deeply held set of values, (b) to live a life consistent with those values, and (c) to consistently hold ourselves accountable to them"* (Anshel, 2007a, p. 15).

These two postulates form the basis of the Disconnected Values Model and explains the nature of behaviour and how it links with values. It refers to motivation for behaviour and that

this motivation is linked to aspirations and beliefs. It is an encompassing model because it includes these various concepts and does not just focus on values, but rather values in context, comprising different components as mentioned above.

It was already in 1957 that it was posited that a consistency among values, beliefs and behaviour is essential (Festinger, 1957). With his cognitive dissonance theory, Festinger explained that the inconsistency among these concepts will drive an individual towards attitude change and thus behavioural (habit) change. Anshel (2013) explained that the Disconnected Values Model has the added benefit in that it does not just alter habits, but also replaces negative habits with positive and more effective habits that are consistent with an individual's values.

The Disconnected Values Model acknowledges that habits are deeply seated behaviour and therefore difficult to alter (Anshel, 2013). By going through the process of identifying core values, recognizing the (if there is) discord between these values and way of living, with a consultant, the individual is prompted through this process. A key aspect of the process is the identification of purpose and through action, aligning this purpose, behaviour and values (Anshel, 2013).

#### **2.4.3 Stages of the Disconnected Values Model**

Anshel (2005) identified an intervention model (Figure 2.1) to identify disconnected values. The model relies on the interaction between a facilitator such as a psychologist and the individual seeking guidance from a facilitator. The facilitator guides the individual through the different stages of the model (Anshel, 2013).

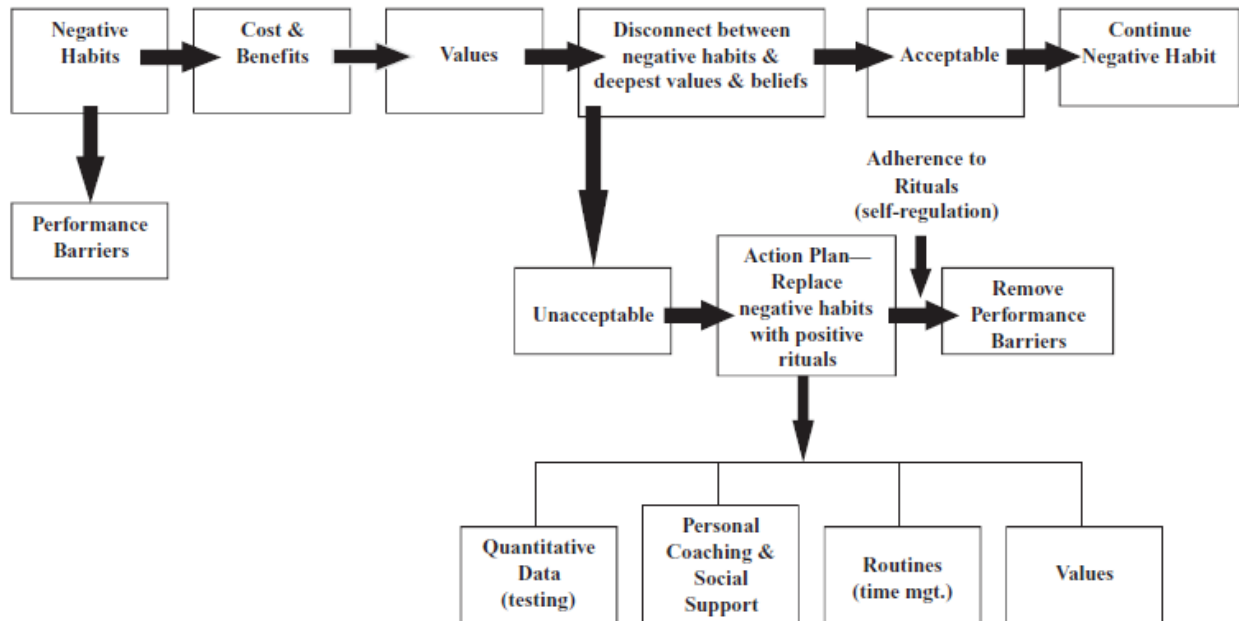


Figure 2.1 Stages of the Disconnected Values Model (Anshel, 2005)

### Stage 1

In stage 1, an individual is engaging in negative habits, which Anshel (2013) pointed out can be in the form of thoughts, emotions and tasks. The first stage in Anshel's (2005) intervention model is to identify the benefits that result from the negative habit. The Disconnected Values Model recognizes that each individual has negative habits. Being aware of these habits serves as the first acknowledgement of the Disconnected Values Model (Anshel, 2013). Identifying the pay-offs an individual experiences by engagement in the habit enables the individual an opportunity to rationalize the reasons for the habit (Anshel, 2005). These benefits are purely only a perception of the individual engaging in the negative habits and even though the reasons can be rational or irrational, the individual is likely to try and rationalize the reason(s) for engaging in the negative habit (Anshel, 2013).

### Stage 2

The second stage is to assist the individual in identifying the cost and long-term consequences of engaging in the negative habit. The completion of stages 1 and 2 offers the individual an objective calculation of cost and benefit of engaging in the specific habit (Anshel, Brinthaup, & Kang, 2010).

### Stage 3

The third stage involves the individual identifying his/her most important values and is considered the 'heart' of the model. Through identifying his/her most important values, an opportunity arises for a change in thought and behaviour (Anshel, 2005).

#### Stage 4

Stage 4 requires the individual to reflect on his/her actual behaviour and how it correlates with the identified values. If the behaviour is in contrast with what the individual values in life, a disconnect exists between actual behaviour and valued behaviour (Anshel, 2010a). It is in this step that the final stage is introduced. The individual now needs to make a decision that will influence future behaviour. If the individual finds the disconnect between values and behaviour acceptable, the individual is likely to continue with the negative behaviour. If he/she finds the disconnect between behaviour and values unacceptable, the individual is likely to make the necessary behavioural changes in order to stop engaging in the negative behaviour (Anshel, 2010a; Anshel, 2013). This means that the individual recognizes his/her values as a top priority and will direct future behaviour to be consistent with the identified values (Anshel & Kang, 2007). This can be done by developing a self-regulation action plan whereby an individual forms a concrete plan of when, how and where he/she will take action on his/her intentions to engage in the new identified behaviour that is in accordance with his/her value system (Anshel, 2013).

Anshel's (2010a) model draws attention to the importance of mindfulness in that a key element of the model lies in creating awareness in the individual of his/her values and the correlation between everyday behavioural patterns and the upholding of personal values. Due to the automatic quality of habits, negative behaviour can easily perpetuate at the expense of personal values. Assisting the individual to become aware of core values and to reconnect with these values serve as motivation to alter negative habits, possibly develop positive habits even more, and lastly pave the way for replacing the negative habits by learning new habits that are congruent with personal values (Anshel, 2010a). By doing so, intervention is aimed at a personal level to which the athlete is already accustomed to since values are core beliefs that are inherent to the character of the individual (Rokeach, 1973).

This is consistent with the view of Ockene (2001, p. 45):

*"... change is a process, not a one-time event, and we can't expect people to make changes at a level for which they're not ready. Our interventions need to be directed to where the individual is."*

A value-based intervention such as the Disconnected Values Model indicates that health behaviour changes are associated with cognitive and psychological self-regulatory changes (Brinthaupt, Kang, & Anshel, 2013). This means that behaviour change is likely to occur when an individual has intention and motivation (psychological) and made a decision (cognitive) to make a change in behaviour.

Another wellness intervention programme, based on the Disconnected Values Model, conducted by Anshel, Kang and Brinthaup (2010) indicated improvements in various physical measurements of fitness as well as psychological improvements following a ten week wellness programme. These results, based on only a short ten week programme have been linked with the possibility of the impact of the behaviour-value dissonance that could have motivated the participant in the study to commit to a healthy lifestyle in such a short time (Anshel et al., 2010).

It has also been noted that habits can stand in the way of an individual behaving in a manner consistent with his/her emotions and attitude in a given situation (Southerton, 2012). In this case an individual might experience a certain emotion but due to the presence of habits in his/her life, will default to habitual behaviour rather than to act in a manner consistent with the actual emotion or attitude. Hobson, 2013, as cited in Southerton (2012, p. 2) referred to this occurrence as the value-action gap, explaining that: "*people's reported positive attitudes towards the environment are not matched by their behaviours. This 'gap' is often explained as being the consequence of habits and routines, variables that complicate rational responses to policy initiatives.*"

Educational institutions such as schools and universities are ideal places where the values and beliefs of the community are taught to children. Ozolins (2010) stated that these institutions serve as particular habitats that can teach moral habits based on the values and beliefs of the community. Dewey (1981) contended that it is the moral habitat that influences an individual's moral habits and that these habits are a result of the moral habitat an individual finds him/herself in.

If one translates this philosophical view to the world of sport and specifically the sporting habitat, athletes are likely to develop habits related to the sport context they find themselves in. This view impacts the value of the support staff in the athlete's environment because their conduct, habits and values will directly influence those of the athlete since they form part of the environment. If one applies it specifically to moral habits, then the ethical values and habits of the coach become vital in the influencing of the ethical habits of the athlete such as stance on various unethical behaviours such as the taking of performance enhancing substances. It is likely that an individual will alter his/her moral habits as he/she adapts to a new moral environment if there happens to be a change in environment (Ozolins, 2010).

From the review of literature explaining and identifying the importance of values in the behaviour of individuals, it can be surmised that values form a critical component in the change and maintenance of habits. It is also clear that values serve a purpose in human



behaviour as it directs and guides behaviour and intention. It also serves as a motivator for behaviour. It was also noted that this changing and maintenance agent (values) are in reach of every individual who makes the effort to seek and learn more about him/herself and the reason for his/her behaviour.

## **2.5 Summary**

Chapter 2 clarified the concepts of habits, mindfulness and values with specific relation to their meaning and interconnectedness. These three concepts function independently as strong role players in the management and understanding of behaviour. It is however their link and interrelatedness with each other that were of significance throughout this chapter.

The Disconnected Values Model of Anshel (2013) in particular, illustrated the interplay and necessity of the presence of mindfulness and values in the maintenance, development or change of habits. It was indicated how habits and values are linked to having an intention to behave and to change behaviour. The role of mindfulness proved to be vital to the notion of habit change with emphasis placed on an awareness of negative habits and an individual's awareness of his/her own value system and intention and desire to develop behaviour consistent with a personalized value system.

## CHAPTER 3

### Research methodology

#### 3.1 Introduction

This section describes the research methodology adopted in this study. It provides specific information about the purpose of the study, research position, research strategy, research process, participants, research ethics and the quality of the research. As the research study consists of two phases, the two phases and accompanying details and phase specific data such as sampling criteria, will be discussed separately from each other in order to provide clarity and ease of reading. This chapter also provides the reader with the sequence in which the data collection occurred.

#### 3.2 Purpose of the research

The purpose of the study was to explore how habits, mindfulness and values are experienced by athletes and how (and if) these experiences differ among different levels of sport participation.

#### 3.3 Research position: Mixed methods research

A mixed methods research approach was used for this study to assist the researcher in developing an instrument by which data (obtained in Phase 1) could be expanded upon (in Phase 2) and thus provide a more comprehensive view of the research field. Creswell defined mixed methods research as *“a research design (or methodology) in which the researcher collects, analyzes, and mixes (integrates or connects) both quantitative and qualitative data in a single study or a multiphase program of inquiry”* (Johnson et al., 2007, p. 9).

The aim of the researcher was to provide a thorough understanding of the studied phenomena and it is for this purpose that a mixed methods research approach was utilized. The three concepts that were explored fell into three different theoretical constructs, namely a behaviourist framework (habits), cognitive framework (mindfulness) and the Disconnected Values Model as proposed by Anshel (values). A mixed methods approach allowed for the exploration of athletes' experiences regarding these concepts in their sport performances. It also allowed for the summarization of the information obtained and applying it in the quantitative Phase 2 in order to obtain more information about the concepts across a broader athlete population.

This ideal of providing an encompassing view of the data obtained was reflected in Preskill's definition of mixed methods research: *“Mixed methods research acknowledges that all methods have inherent biases and weaknesses; that using a mixed method approach increases the likelihood that the sum of the data collected will be richer, more meaningful, and ultimately more useful in answering the research questions”* (Johnson et al., 2007, p. 11).

### **3.4 Research design: Fixed method design**

The first phase of the study consisted of qualitative research. The data obtained from the qualitative phase was used to develop a questionnaire that sought to further investigate the findings from the qualitative stage in the quantitative stage. This process is known as an exploratory sequential design whereby qualitative data collection and analysis of the data forms the first part of the research. It builds to the quantitative data collection and analysis of the data, which is the second part of the research process. The nature of the study was a fixed method design due to the determination of the methods before the commencement of data collection (Creswell & Plano Clark, 2011). The timing of this study was thus sequential since the one part of the study followed after the other.

This level of interaction was interactive since the design and conduct of the quantitative strand depended on the data gathered from the qualitative strand. This interaction of the two strands occurred before a final interpretation of data was made (Creswell & Plano Clark, 2011). The mixing of data took place during data analysis and the two methods enjoyed equal priority.

### **3.5 Measuring instruments**

#### **3.5.1 Phase 1: Qualitative research**

##### **a. Semi-structured interview (Appendix A)**

Data was collected by conducting in-depth interviews with elite adult athletes. The nature of the interview was semi-structured in that predetermined questions and questions based on the answers of the athletes were explored. A semi-structured interview allowed for the interviewer to probe athletes with open-ended and closed-ended questions (Brink, 2006).

The questionnaire consisted of a selection of questions relating to the athlete's sport experience. Questions were of an explorative nature and required the athlete to reflect on his/her experience of sport specific habits, the athlete's perceived role of values and

mindfulness in his/her sport, as well as the athlete's understanding of a successful sport career.

The content validity of the semi-structured interview addressed all three researched themes: habits, mindfulness and values. The three themes enjoyed equal attention and it was aimed at acquiring information about the chosen themes which added to the content validity of the interview (Brink, 2006). The purpose of the semi-structured interview was to gain information about a specific group's experiences of the before mentioned chosen themes, thus, the nature of the content covered were therefore relevant to the purpose of the study (Foxcroft, 2001).

The semi-structured interview was efficient whereby the questions have been set in such a way that it collected the required data. It was also appropriate in that the participants were able to answer the questions due to the nature of the questions being sport related and the participants having a background in sport (Brink, 2006).

To achieve validity of the semi-structured interview, the researcher has discussed the questions with experts in the field of sport and sport psychology in order to make sure that the questions in the interview were relevant and not subject to bias from the researcher. The researcher also enhanced credibility by having the research participants review and verify their answers in order to ensure that facts were not misconstrued (Brink, 2006).

The researcher ensured that she was consistent in her habits and responses to the method of interpreting the results. The researcher also aimed to limit factors relating to participants that could impact the results of the study (Brink, 2006). The interviews took place at a time and place of choice indicated by the research participant. The researcher hereby ensured that the research participant was comfortable in the setting, not distracted, rushed for time or too tired to do an interview. The research participants were told beforehand how long the interview might last in order for them to plan their schedules accordingly.

Phase 1 of this study took place over an extended period of time. Due to the required achievement level of participation of the athletes in Phase 1, it meant that the researcher was faced with having to schedule interviews with athletes who had extremely busy travelling, work and training schedules. Their level of participation is mainly international resulting in them being abroad quite often.

### 3.5.2 Phase 2: Quantitative research

#### a. Five Facet Mindfulness Questionnaire (FFMQ) (Appendix B)

The FFMQ is a 39-item self-report mindfulness questionnaire that assesses an individual's tendency towards mindful living. A five-point Likert scale ranging from one (never or rarely) to five (very often or always true) is used to measure these items (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). The Cronbach alpha levels are between .72 and .92. The alpha coefficients for internal consistency range from .75 to .91 (Baer et al., 2008).

In a study conducted by Baer et al. (2006), 613 students took part in a process where five mindfulness factors were identified after the students completed several other mindfulness questionnaires. The factor analysis of these questionnaires served to identify the five different facets that are now assessed in the FFMQ: "*Observing* includes noticing or attending to internal and external experiences, such as sensations, cognitions, emotions, sights, sounds and smells. *Describing* refers to labelling internal experiences with words. *Acting with awareness* includes attending to one's activities of the moment and can be contrasted with behaving mechanically while attention is focused elsewhere (often called *automatic pilot*). *Non-judging of inner experience* refers to taking a non-evaluative stance toward thoughts and feelings. *Non-reactivity to inner experience* is the tendency to allow thoughts and feelings to come and go, without getting caught up in or carried away by them" (Baer et al., 2008, p. 3).

The FFMQ has been used successfully in a mixed methods research study in the South African context (Kok, Kirsten, & Botha, 2011).

#### b. The Shadowmatch™ Worksheet

Shadowmatch™ is an internet based worksheet that is used to identify and help understand the habits of individuals and groups. It is a tool that presents the individual with a list of tasks in order to determine the strength of 19 habits in the behaviour of the individual (De Villiers & Wevell, 2013). The individual is presented with 75 simulated tasks to which the individual needs to indicate how he/she will act by choosing the most appropriate response from a list of multiple choice answers. Not only does this system identify the strength of an individual's habits, but it also identifies trends in the individual's behaviour and calculates the consistency with which answers were selected. The 19 habits that the worksheet assesses include the following: propensity to own, propensity to hand-off, discipline, to simplify, routine, problem solving, innovation, people positive behaviour, habit of using conceptual abilities, responsiveness, resilience, individual inclination, team inclination, propensity to handle frustration, propensity to change, conflict handling, altruism, self-confidence,

leadership and self-motivation (De Villiers, 2009; Muller, 2009). The Shadowmatch™ Worksheet can be accessed at [www.Shadowmatch™.com](http://www.Shadowmatch™.com).

These habits are defined as follows and quoted from De Villiers, 2009, p. 24-29:

***"Propensity to own versus Propensity to hand-off***

*These two habits indicate whether the individual takes ownership to solve a problem and handles a challenge him/herself, or whether he/she prefers an outside agent to solve problems, handle difficulties or even execute tasks. It refers to the place where the individual places the control and/or task execution, with him/herself or outside of him,/herself. The same applies to keeping the task as a self execution responsibility. From the data gathered by Shadowmatch™ it is clear that for some unique tasks a balance between the two is necessary.*

***To simplify***

*Refers to the habit of breaking complex scenarios down to linear challenges that can easily be resolved. It can be seen as the habit of taking the easy route towards solving complex challenges. The purpose of this habit normally ties up with efficiency whereby an individual has developed the ability to easily find the simple way to resolve challenges / problems. The habit of simplification can develop in tandem with the habit of problem solving. When both these habits are well formed the individual might develop extremely strong behaviours towards effectively solving problems by applying extremely simple ways towards a solution.*

***Resilience***

*Some people give up easily when faced with a challenge and some apply themselves relentlessly to solve problems and overcome challenges. The Shadowmatch™ worksheet calculates the habit of the person in overcoming challenges despite the difficulties experienced. It also calculates whether the individual tends to give up or whether he/she completes a task despite difficulties and toughness of the journey. Be aware of the fact that if the individual answers the questions in a specific way, it might indicate a negative level of resilience. When this happens, the indication is that the specific person tends to disembark from a task not because he/she experienced the task to be tough but because he/she anticipates it to be tough without even trying. If this is a habit (giving up without even trying) the individual will also tend to develop a habit of low self-confidence.*

### **Propensity to change**

*Some people find it very difficult to adapt to change and to get comfortable with new methods, new ways of doing things, a new environment and new technology'. On the other hand there are people who advocate change, they always venture towards new frontiers. These people are very comfortable with anything new, be it a new job, new ways of doing things, new technology and so on. Shadowmatch™ determines how positive (comfortable) the individual behaves towards change and adopts anything new, different and even strange. If this is marked as a habit, (more than 50 points) it indicates the behavioural pattern of pushing for change, early embracing the new and even invites those around them to participate in a process of changing the world where they work and live.*

### **Propensity to handle frustration**

*This Shadowmatch™ calculator indicates an individual's habit towards applying positive behaviour when dealing with frustrating circumstances. Frustration occurs when the individual is obstructed from reaching his/her goal. It is the experience that stems from a situation when obstacles block one from reaching a goal. A high graph indicates a strong habit of handling a frustrating situation. The behaviour types that Shadowmatch™ measures are those acts whereby the individual deals with the obstructing source/interference in such a way that his/her actions towards successful results, stay on track.*

### **Team /Individual inclination**

*The system calculates, according to the answers given, whether the individual prefers working as part of a team or whether he/she prefers working as an individual. When these two calculations are very close to each other, it indicates that the individual is equally comfortable working in a team or as an individual.*

### **Self-motivation**

*Some people have the habit of energising themselves whilst others are dependent on external energisers to stay positive, driven and active. Shadowmatch™ calculates the individual's habit towards the capacity of the individual to behave with high levels of energy despite the absence of external motivating agents. Self-motivation is the behaviour of continuous positive action towards a desired outcome in the absence of external energisers.*

### **Routine**

*The routine graph is an indicator of an individual's habit towards structure and repetition, sometimes even mundane activities. It determines whether the individual has a habit of behaving in harmony with an environment of repetition and patterns of the same behaviour. A high graph indicates a high propensity towards a positive blend between the individual and an environment where structure and routine results in a reality whereby every day is pretty much the same as the previous.*

### **Problem solving**

*This is the habit of engaging with challenges on a conceptual, social and practical level and successfully managing these difficulties/challenges towards resolving them. People with a strong embedded habit of problem solving easily become intrigued by challenges and riddles to be resolved. In fact, if anybody scores more than 70 points on problem solving, they will find it extremely difficult not to engage with a challenge to be resolved. When an individual scores less than 30 points he/she will find it easy to bypass or even ignore a problem that needs some effort to be resolved.*

### **Responsiveness**

*This indicates the individual's reaction speed, in other words the habit of acting immediately if and when necessary. A low graph will merely indicate that an individual doesn't have the habit of acting immediately, whilst a high graph indicates the habit of acting immediately. As with all Shadowmatch™ indicators, there is no good or bad in this calculation. In some jobs people don't need to act quickly, they need to wait and think very thoroughly. In some jobs people must act quick. This indicates the individual's inclination. A high score indicates a strong habit of responsiveness.*

### **Innovation**

*This is the habit of finding new ways and identifying better processes and methods to improve on current methods of working. It also indicates the habit of working out-of-the-box and creating new realities. Shadowmatch™ defines innovation as the behaviour of an individual doing things that are new, design new practical functionalities that improve on the way things are done and even create new realities. Someone with great ideas is not regarded as innovative. Shadowmatch™ regards them as dreamers - something Shadowmatch™ prefers not to map or pretend to understand.*



### **People positive behaviour**

*This calculates whether the individual has the habit of working with people in a positive way and building positive relationships. It also tracks the way a person influences people towards a positive and meaningful experience of life. The system follows answers that will indicate a natural people oriented person, somebody not easily frustrated by others.*

### **Discipline**

*The habit of working under extreme levels of discipline, in a highly disciplined working environment where adherence to structure, rules and regulations and time-frames are imperative. People with a high (above 70) score on this habit will even create structures of discipline for others to adhere to. Individuals with an extremely low score do not easily conform to structure, discipline and strict order.*

### **Conflict handling**

*Conflict manifests in a situation where people have opposing interests that might unfold with destructive consequences to each other. This reading on the Shadowmatch™ graph indicates the habit of dealing with conflict in a positive way towards and outcome with no or minimal negative consequences for either party. Avoiding conflict is not regarded by this worksheet as a positive way to deal with it.*

### **Altruism**

*This reflects a person's willingness to help others without expecting something back. People that have a strong altruistic habit are relatively free from the "What's in it for me" approach to helping others. These people do well in service driven jobs. Shadowmatch™ has gathered evidence to the effect that a high score on altruistic behaviour doesn't always implicate a high score on people Positive behaviour.*

### **Self-confidence**

*Shadowmatch™ calculates behaviour that indicates the person's ability to act with conviction and stay with a decision that he/she has made. In short, self-confidence is the habit of acting with a high level of trust in your own abilities, qualities and judgement, knowing who you are and what you can and can't do. A high score indicates that an individual has a habit of acting in a secure and confident manner.*

## **Leadership**

*Shadowmatch™ defines leadership as the ability to integrate resilience, discipline, a team oriented approach, the propensity to act immediately and self-confidence with an attitude of positive involvement. All these behavioural strengths are harnessed to lead a group of people towards a successful outcome."*

More than 100 000 worksheets have been completed in the South African context (Solomon, 2009). In the South African sport context it has been used successfully on national level in the field of golf (Bezuidenhout, 2009). The validation of the Shadowmatch™ Worksheet has been tested in an experimental design in South Africa (De Villiers, 2009). This validation study found that Shadowmatch™ discriminates the presence of habits embedded in an individual's behaviour with a significance of 0.01. The importance of this is that Shadowmatch™ thus provides a 99% probability of discriminating between the different habits within an individual's behavioural framework. It is also significant that the full set of possible results for the worksheet has a perfect normal distribution curve.

The adverse impact of Shadowmatch™ towards any specific biographical groups was investigated in a study conducted by De Villiers and Wevell (2013). In their study, 3500 individuals from the same company completed the Shadowmatch™ Worksheet. Results of this study indicated that no statistical significant discrimination existed for the majority of the permutations of the data, implying that the Shadowmatch™ Worksheet does not have any significant adverse effect towards any biographical group, which is a vital trait for any instrument in the diverse South African context.

Athletes completed the Shadowmatch™ Worksheet in order to identify their habitual patterns in everyday life. A unique individual code was emailed or given to each athlete with which they could access and complete the worksheet online. Upon completion of the worksheet, each athlete received immediate online feedback about their top five habits.

The developers of the Shadowmatch™ Worksheet provided the researcher with verbal permission to use the worksheet as an instrument for this study. The researcher was provided with her own login account and password to access and administrate the worksheets completed by the athletes. This ease of access also allowed the researcher to email every research participant his/her unique access code by using the embedded email service of the Shadowmatch™ company. This ensured a professional service rendered to the research participants.

### **c. The Portrait Values Questionnaire (PVQ) (Appendix C)**

The PVQ exists of 40 short verbal portraits that describe the goals, aspirations and wishes of an individual. These portraits are each describing a different person and the individual is required to indicate on a scale of 1 (Not like me at all) to 6 (Very much like me) how much the description is similar to the individual. The female and male versions are available in order for the individual to relate easier to the portraits. The PVQ scores 10 different value scales that consist of three to six items (Schermer, Feather, Zhu, & Martin, 2008).

The 10 basic human values assessed in the PVQ are: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity and security (Beierlein et al., 2012).

These 10 values are defined as follows:

#### **Self-direction**

This value comprises the need of absolute/intrapersonal competence. It refers to an individual developing and using his/her understanding and intellectual competence as well as exercising his/her capacity to attain self-chosen goals (Schwartz et al., 2012). This value also refers to an individual's need for independence. Schwartz (2012) noted that this value addresses an individual's need for independent thought and action. Independence can include creativity, freedom, choosing own goals and being curious (Kluckhohn, 1951; Kohn & Schooler, 1983; Schwartz, 2012).

#### **Power**

Power refers to an individual's need for social status and prestige, control or dominance over people and resources (Schwartz, 2012). It involves the promotion of own interests by controlling events (Schwartz et al., 2012).

#### **Universalism**

Valuing universalism is indicative of an individual's orientation towards the wellbeing of all people and nature. This includes the person's understanding, appreciation, tolerance and protection of these two agencies (Schwartz, 2012). An individual valuing universalism is likely to be tolerant to others, have concern for nature and will care about the protection of nature (Schwartz et al., 2012).

#### **Achievement**

The achievement value encompasses an individual's competence according to social standards. By being competent the individual receives social approval. Valuing achievement

entails an individual to value being successful, influential, capable and ambitious (Schwartz, 2012).

### **Security**

This value refers to the basic need of an individual to feel safe. This entails harmony and stability of society, relationships and the self (Schwartz, 2012).

### **Stimulation**

Stimulation comprises an individual's value of living a challenging life that is not boring or dull. The individual values excitement in his/her life and the idea of a novel and not monotonous lifestyle (Schwartz, 2012).

### **Conformity**

Schwartz (2012, p. 6) defined the goal of conformity as "*restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.*" Valuing conformity will involve an individual being polite to others, honouring elders and parents, as well as being polite and obedient to rules and laws of society as to not upset or harm others (Schwartz et al., 2012).

### **Tradition**

An individual who values tradition will likely respect, commit and accept the customs, rituals and ideas of his/her religion and culture. Being humble has been identified as a subordinate value to tradition, entailing an individual to not draw attention to him/herself and being modest in his/her behaviour (Schwartz et al., 2012).

### **Hedonism**

Hedonism has one component and it entails an individual valuing pleasure (Schwartz et al., 2012).

### **Benevolence**

Benevolence involves caring for others and valuing the welfare of those close to an individual. This entails being helpful, honest, forgiving, responsible, loyal, establishing true friendship and mature love (Schwartz, 2012).

The cross-cultural validity of the PVQ was tested in a representative national sample of 3,493 South Africans who responded to the PVQ in 1997 as part of a marketing research project administered by the Markinor survey organization (Schwartz et al., 2001). The racial representation of the sample included 2,000 Blacks, 938 Whites, 390 Coloureds, and 165

Asians. The Spearman correlation in this study was .83 ( $p < .01$ ) between the observed and theoretical values.

In a study conducted with 690 individual twins, the internal consistency of the PVQ was found to be fairly reliable and Cronbach's alpha reliabilities of the 10 values measured between .51-.83 (Schermer et al., 2008).

The researcher contacted Professor Schwartz, who developed the PVQ, via email and requested permission to use the PVQ in this study. Permission was granted and Professor Schwartz sent copies of the PVQ via email for use in this study (personal communication, March 18, 2013). Professor Schwartz was also available for questions during the data discussion stage of Phase 2.

#### **d. Value Checklist (Appendix D)**

The Value Checklist is developed according to Anshel's Value Checklist in determining disconnected values (Anshel, 2007b). Athletes are required to identify their values from a list and thereafter to identify their top five values. Anshel's (2007b) checklist consists of 32 general values. The checklist has been adapted to this study to also include 17 values that are directly related to the sport experience since this research is aimed at identifying values of athletes and the effect of these values on the athlete's sport experience. The values included in the Value Checklist are:

Accountability, balance, beauty, concern for others, character, commitment, compassion, comradeship, conformity, courage, creativity, dedication, excellence, faith, fairness, Family, freedom, generosity, genuineness, family health, friendship, fun, happiness, harmony, health, honesty, honor, humor, humility, individuality, integrity, kindness, knowledge, Loyalty, perfection, perseverance, professionalism, respect for others, responsibility, security, self-awareness, self-respect, serenity, service to others, sportsmanship, tolerance, wealth.

#### **e. Structured questionnaire (Appendix E)**

Forming part of the quantitative phase, the structured questionnaire consisted of questions distilled, developed and compiled after the analysis of the data obtained in the qualitative phase. For example, one of the themes that emerged in the qualitative phase was that the athletes chose to incorporate routines and the repetition of certain behaviour which they felt contributed to their success as athletes. Some of these behaviour and routines were included in their training and/or engaged in before competing. To assess the prevalence of these habits among the athletes in the quantitative phase, the following questions were asked, for example, question 17: "More specifically, do you have any habits that influence

your sport either positively or negatively? What are these habits and how do they influence your sport positively or negatively?" Another question assessing this theme is question 21: "Leading up to competition, do you often find yourself repeating behaviour or thoughts that you engaged in before the start of other competitions? What are they and why do you think you tend to repeat them?" Questions were drafted and presented in normal question format as well as a Likert scale.

A pilot-study was conducted to ensure that the questions were specific and theme related. A random sample of 10 provincial- and club athletes completed the pilot questionnaire to assess if it was set in a manner that will ensure that athletes understood the questions and be able to answer in a manner that will pertain to the themes addressed in this study. It was found that some questions were set in a manner that was too broad and/or elicited one-word answers. Minor changes were made to the questionnaire after completion of the pilot-study. Some questions were altered to still ask about the same concept, but were of a more open-ended nature and also more specific. For example, the initial question about habits was: "Which of your habits support your sport performance?" This question elicited very broad answers and athletes gave answers that had no reference to habits at all. This question was then elaborated on and developed into a few questions. For example, question 20: "Do you have certain behaviour in your training sessions that you try to repeat during competition time? What are these habits and why do you try to make them part of training and competition?" Another question addressing the athletes' experience of habits is question 23: "How has participating in sport changed any of your good/bad habits you had before you became an athlete?"

The questionnaire is a self-completion questionnaire whereby the athletes completed the questionnaire by themselves (Aldridge & Levine, 2001). The instructions and aim of the questionnaire were made clear to the research participants. Questions were concise and aimed at gathering data related to the athlete's experience of habits, mindfulness and values in sport. The data obtained from some of the questions was of a qualitative nature and presented and discussed as a separate qualitative data section within Phase 2.

These five instruments have been selected as part of this study for distinctive reasons. Information obtained from the Shadowmatch™ Worksheet is very useful in identifying habits and creating habit profiles for both team and individual sporting codes. Assessing the habit strength of 19 different habits, this worksheet provided insight into the unique habit strengths of different sport codes and different levels of sport participation.

Data obtained from the FFMQ assisted in establishing the level of mindfulness that athletes have developed. The results obtained from the PVQ determined the different values that athletes have and how these correlated with each other across the different levels of participation. The Value Checklist identified the athlete's values as perceived by the athletes. The structured questionnaire condensed information obtained from the elite athletes in questionnaire format in order to assist the researcher in determining specific habits, mindfulness levels and values of athletes who participated in the quantitative phase.

By combining the resulting data from these six self-report assessments with the data obtained from the semi-structured interview, provided the researcher with a more thorough understanding of the data obtained in the qualitative phase regarding elite athletes' experience and integration of habits, mindfulness and personal values in their sport and daily living.

## **3.6 Phases of research**

### **3.6.1 Phase 1: Qualitative phase**

The aim of this qualitative phase was to explore the psychological dynamics involved in the formation, maintenance and transformation of habits of highly effective athletes. The role of mindfulness and values were also explored.

#### **3.6.1.1 Sample**

Purposive sampling was used to generate the sample for this qualitative phase. This allowed the researcher to select athletes that were representative of the study phenomena (Brink, 2006). Athletes were required to have represented South Africa internationally and participated consistently and successfully at international level. Using purposive sampling ensured that data was obtained from athletes with attributes, in this case being top athletes in their respective sport codes, that were specific to the interests of the study (Aldridge & Levine, 2001).

The inclusion criteria were as follows:

- Athletes had to have represented South Africa internationally.
- Athletes had to be successful on international level, having won medals at Olympics, Commonwealth Championships, World Cups or Continental Championships.

The sample consisted of seven elite athletes from different sport codes. The sport codes represented in Phase 1 are cycling, athletics, weightlifting, chess, hockey and netball. It included three females and four males of which the racial identities comprised of two white

males, two black males, two white females and one black female. The sample was not gender or sport code specific though attention was given to include a near equal amount of male and female athletes, individual and team sport codes, as well as being racially inclusive. The athletes were contacted through the Western Cape Provincial Department of Cultural Affairs and Sport, as well as being contacts through the researcher's participation in international sport.

### **3.6.1.2 Data**

#### **a. Instrument**

##### **Semi-structured interview**

The interviews were scheduled at the athlete's convenience and the location was aimed at either the researcher's office, the athlete's home, training facility or convenient 'neutral' location for both parties (Aldridge & Levine, 2001). All the interviews took place in a quiet environment. One of the elite athletes requested the interview to take place in a restaurant close to her work. The restaurant manager created an ideal situation for the interview by turning down the restaurant music and having the researcher and participant seated in a corner away from other restaurant clients. The researcher went above and beyond to create ideal circumstances in order to facilitate the interview quality and to ensure the comfort of the interviewees.

#### **b. Data recording**

The interviews were recorded on a dictaphone in order for it to be transcribed verbatim and analysis be done (Willig, 2009). The process and ethical considerations were discussed with the athletes and a copy of the interview was offered to each athlete.

#### **c. Data analysis**

A verbatim transcription of the interviews was conducted. The researcher listened to each interview in entirety after the interview was conducted. The researcher then transcribed every interview herself verbatim, recording every word in an effort to include all possible and usable data. The transcribed interviews were then matched to the original recorded interview to ensure that all the data has been transcribed and therefore captured on paper.

The answers to the semi-structured questionnaire obtained during the interview were grouped according to similar habitual themes expressed by the athletes. The analysis was inductive, because the researcher looked for themes arising from the questionnaire other than forcing predetermined themes (Thelwell, Such, Weston, Such, & Greenlees, 2010).



Some of the questions reflected the athlete's basic information such as type of sport, years involved in sport, amount of training hours per week, etc. Data obtained from these questions was used to create a profile of each athlete and to determine if there was a relationship among the information obtained from the seven athletes.

Answers referring to the athletes' experience of values provided the researcher with data that was summarized according to repetitive themes and it was assessed to determine if a relation existed between the information obtained from the athletes. The five most important values identified by each athlete were compared to see if a relation existed.

Each athlete's understanding of mindfulness and its usefulness and application to their respective sport experiences were assessed. The aim was to identify possible relations among the elite athletes. The answers to the mindfulness questions were compared to assess if a relation existed.

The researcher continuously compared data obtained from one participant with that of another in order to determine the extent of emerging themes. The steps of the data analysis in the qualitative phase can be summarized by the following steps:

1. Interviews were transcribed verbatim.
2. Data obtained from the personal and biographical questions was used to create a profile of each athlete and to determine if there was a relation among the information obtained from the seven elite athletes.
3. Similar habitual themes expressed by the athletes were identified.
4. Themes arising from the athletes' experiences of values were summarised and the researcher identified similar and differing themes.
5. The five most important values identified by each athlete were compared to see if a relation existed.
6. The answers to the mindfulness questions were compared to assess if a relation existed among elite athletes' experiences of mindfulness.
7. Emphasis was placed on the answers that related to each other across the different themes and was used to set up questions in order to see how the answers related to or repeated with those provided by the research participants in the quantitative phase.

### **3.6.2 Phase 2: Quantitative phase**

Based on the qualitative results that were collected and analysed in Phase 1, a structured questionnaire was developed. The mixed methods design of Creswell and Plano Clark (2011) allows the combination of quantitative and qualitative collection of data. The first draft of the structured questionnaire was given to 10 provincial- and club athletes from different sport codes as a trial run to establish the clarity and quality of the structured questions (as explained in more detail in a previous section). This was a useful exercise as it provided the researcher with information as to how the athletes understood and misunderstood some of the questions. Unclear questions were then altered, deleted and some questions were added to ensure a questionnaire was set that captured the essence of what this study is about. Data in the second phase was obtained by means of a structured questionnaire, a Values Checklist, Portrait Values Questionnaire, Shadowmatch™ Worksheet and the Five Facet Mindfulness Questionnaire in order to enhance the richness of the information gathered during the qualitative phase. The data was analysed and integrated with the data obtained from Phase 1.

#### **3.6.2.1 Sample**

Purposive sampling was used in which the researcher located athletes with attributes of particular interest to the research project (Aldridge & Levine, 2001). For this research project these distinctive attributes required the athletes to be actively involved in their sport on national-, provincial- and/or club level. Sampling was not sport code specific but an attempt was made to include athletes from a variety of sport codes, including team and individual sports.

The inclusion criteria were as follows:

- The participant needed to be actively involved in sport to be classified as an athlete.
- The athlete had to be older than 18 years.
- Athletes had to be participating actively on club level to be included as a club athlete. These athletes have not participated on a higher level yet.
- Athletes had to be participating actively on provincial level to be included as a provincial athlete.
- Athletes had to be participating actively on national level to be included as a national athlete.

The sample size was aimed at a 100 athletes inclusive of both genders. The research study consisted of 82 athletes who were actively involved and their data is included in the results and discussion of this phase. The Phase 2 participants consisted of athletes who are participating on national-, provincial- and/or club level. A detailed analysis of the sample group is provided in Chapter 8.

Athletes were sourced and contacted through the Western Cape Provincial Department of Cultural Affairs and Sport, the Western Cape Coaches Commission, the Western Cape Sport Confederation, local sport clubs, word of mouth, as well as through contacts that have been built up by the researcher's own involvement in competitive sport (national- and international level). The researcher is also a practicing Counselling Psychologist, specializing in Sport Psychology, who had access to athletes interested in participating in the study.

### **3.6.2.2 Data**

Data in Phase 2 was collected in sequence with Part 1 being internet based and hard copies of the self-completing questionnaires (Parts 2-5) being emailed, mailed or delivered by hand, according to the athletes' preferences.

#### **a. Instruments**

Part 1 - Shadowmatch™ Worksheet

Part 2 - Five Facet Mindfulness Questionnaire

Part 3 - Portrait Values Questionnaire

Part 4 - Value Checklist

Part 5 - Structured questionnaire

#### **b. Data recording**

Written data was obtained by the athletes answering the questions on the questionnaires that were provided. The Five Facet Mindfulness Questionnaire, Portrait Values Questionnaire, Value Checklist and Structured questionnaire are self-completing questionnaires that the athletes answered on the questionnaires provided. The results of the Shadowmatch™ Worksheet were available on the internet via a security code provided to the researcher.

### **c. Data analysis**

Descriptive statistics were used to describe, analyse and summarise the data obtained in the quantitative phase. Attention was given to frequency distribution, as well as to measuring central tendencies and variability within the population group (Brink, 2006). Using descriptive statistics allowed for a description of the findings by using graphs and tables to illustrate differences and correlations between variables within the different instruments, and also between data obtained from the different assessment tools (Aldridge & Levine, 2001). Converting the acquired data into organized, visual representations assured that the data had meaning for readers of the research report. The benefit of using descriptive statistics is that it describes and synthesises data (Brink, 2006).

Summary statistics were reported as frequencies (with percentages) in histograms for categorical data, and means, medians and standard deviations for ordinal/continuous measurements. Reliability of the measurement instruments used in this study was evaluated by calculating and reporting Cronbach's alphas. Value importance scores and habit strengths were compared using mixed model repeated measures, ANOVA and Fisher least significant difference (LSD) post hoc testing. Comparisons between national-, provincial- and club level were done using one-way ANOVA and Fisher LSD post hoc testing. Normality assumptions were checked by inspecting residual normal probability plots. Homogeneity of variance was tested using Levene's test. The assumptions were found to be acceptable throughout. Relationships between scale scores were tested using Pearson correlation analysis.

The Shadowmatch™ Worksheet performs its own computations by means of a fuzzy logic computer to set up habit profiles for each athlete (De Villiers, 2009). This categorisation of data was reported on as provided by the Shadowmatch™ programme. Deductive analysis was used to identify key core habits of athletes.

The information obtained from the structured questionnaire was grouped together according to similarities found in the answers of the athletes. The data was broadly divided into the categories of habits, mindfulness and values with subcategories as defined by the results of the qualitative phase. Themes were identified among the athletes.

Data referring to the values of athletes was grouped together according to similarity in order to establish correlating values. This included the deductive analysis of the responses to the PVQ.

After the analysis of the data was obtained relating to habits, mindfulness and values, the data was collectively summarised to see if there was any correlation between aspects related to habits, mindfulness and values.

### **3.7 Integrating data analysis from the qualitative and quantitative phases**

Though the integration of findings occurred throughout the research process, the findings from both strands of the research project were combined to provide an integrated conclusion of the research project. An integral part of mixed methods research is to create an overall representation of the findings by combining both components of the research process (Bazeley, 2009; Bryman, 2007).

This was done in accordance with some of the 'principles for integration' outlined by Bazeley and Kemp (2012), which includes keeping the focus on the issues being researched and not on the different approaches used, conducting the integration in a manner that is appropriate for the purpose of the study and integrating the components of the study interdependently and not as separate entities.

The researcher used the data obtained from the quantitative phase to ascertain if the themes identified in the qualitative phase had any significant presence in the data analysed in the quantitative phase. The data obtained from both phases was interpreted further by the researcher by finding answers to the following questions and integrating the answers into the discussion (Brink, 2006):

- What do the results imply?
- What can be learned from the data?
- What does the findings mean for others in the world of sport and what is the value of this study for them?
- Should the results of the study encourage change in athlete development programmes or the assumptions about athlete development?
- What recommendations can be made for further research?

### **3.8 Ethical considerations**

Similar ethical considerations were applicable to both the quantitative and qualitative phases of this study (Willig, 2009). Athletes were informed about the aims and procedure of the

research project and their informed consent was obtained in written format. Athletes were free to withdraw from the study at any time. Confidentiality was maintained by not reporting any personalised information about athletes. Athletes in Phase 1 received pseudo names to protect their identity. Pseudo names were also used for athletes who could possibly expose the identity of the Phase 1 athletes. These were indicated with an asterisk (\*) sign. Athletes in Phase 2 received a number to be identified by. The Shadowmatch™ Worksheet provided individual codes for athletes and these randomly assigned codes were used to identify athletes.

Shadowmatch™ is the product owned by the company De Villiers, Bester and associates (De Villiers, 2009). Due to the nature of their product, the company is bound to confidentiality and the codes are only accessible to the researcher and the Shadowmatch™ programme administrator who assisted with technical aspects of the system. Both the researcher and programme administrator had a password to the profile that was created for this specific study. Participating athletes received feedback as to the results of the study.

Data recordings are and will be kept securely by the researcher.

The ethical principle of beneficence was adhered to by making sure that each athlete was managed competently throughout the research project. The researcher took the necessary steps to ensure that athletes were not harmed by monitoring them for any distress during the interview process, as well as completion of the measuring instruments (Brink, 2006). Ethical clearance was required from and provided by the University of Pretoria.

### **3.9 Quality assurance**

Validating the results obtained in a mixed methods study is a complex task due to the integration of results obtained from two different types of research methodologies. Each methodology entails its own weaknesses and strengths and therefore provides a problem of integration (Onwuegbuzie & Johnson, 2006).

The quality of this research study was improved by adhering to the framework of Lincoln and Guba, 1986, as cited in Sale and Brazil (2004). The framework is a cross-paradigm framework that includes the four goals of trustworthiness and rigor which apply to qualitative and quantitative methodologies. Trustworthiness is referred to as "goodness of fit criteria" in qualitative studies and is the equivalent of rigor in quantitative studies.

The current study's quality assessment will be discussed according to the four goals of trustworthiness and rigor (Sale & Brazil, 2004).

### **3.9.1 Truth value**

Truth value encompasses internal validity of quantitative methods and credibility of qualitative methods. Internal validity is addressed by ensuring that the study examines/assesses what it is meant to examine and assess. Credibility is addressed by establishing how congruent the findings of a study are with reality (Shenton, 2004). The current study addressed truth value by providing the background of the researcher that is sport and psychology specific. This description of the background, experience and qualifications of the researcher improves the credibility of this study because the researcher was the main instrument responsible for data collection and the analysis thereof (Shenton, 2004). A dictaphone was used in the qualitative phase to accurately record the responses of the participants. The second phase's data was captured on interview sheets and could therefore also be analysed correctly without any subjective influences.

A further contributory factor to the truth value of the study is the rich descriptions provided by the phenomena that was studied. The themes that were explored were discussed in detail and descriptions of the populations who participated in this study were given. This enables the reader to have a clear understanding of how the data obtained, fits into the provided context of the participants and their sport code, and level of participation (Shenton, 2004).

The researcher also examined previous findings to integrate obtained data into an existing body of knowledge. Informed consent was obtained from participants and confidentiality maintained throughout the research process (Sale & Brazil, 2004). The results of the study pertains to athletes from different levels of performance and from different sport codes. This enhances the quality of the research because the data was not obtained from only a specific sport code or level of performance. The conclusion of this study followed from the logic of the research design in a direct and unproblematic way (Tredoux & Smith, 2006).

An opportunity was created for the study to be scrutinised by peers and this favourably contributed to qualifying the results of the study (Shenton, 2004). Triangulation of the data was done by exploring different data sources and comparing data with the existing body of knowledge (Kelly, 2006).

### **3.9.2 Applicability**

Applicability entails external validity of quantitative methods and transferability of qualitative methods. External validity pertains to the findings, and questions if the findings can be generalised beyond the confines of the study's design and context (Tredoux & Smith, 2006). Transferability refers to the possibility of results to be transferred and used in other contexts to what the study comprised off (Kelly, 2006). The following guidelines of Sale and Brazil

(2004) were followed in addressing the study's goal of applicability by: (1) Describing the context of the study and by providing a description of the participants, (2) Describing and referencing the statistical procedures and statistical significances of the study, (3) Describing the instruments and approaches that were used for data collection, (4) Explicitly stating the inclusion criteria for subject selection. The researcher believes that sufficient contextual information was provided to enable the reader to receive and apply the findings to his/her context (Shenton, 2004).

### **3.9.3 Consistency**

Consistency includes the reliability principle of quantitative methods and the dependability principle of qualitative methods. Reliability refers to the degree of which the results of a study can be repeated. Dependability refers to the degree of which one can be convinced that the findings occurred as is claimed by the researcher (Van der Riet & Durrheim, 2006). This study provided a description of the research design and method of implementing the design. Sufficient details of the study were provided in order for this study to be replicated, and this further improves the goal of achieving consistency in this study (Shenton, 2004).

### **3.9.4 Neutrality**

Neutrality encompasses the importance of objectivity of quantitative methods and confirmability of qualitative methods. Objectivity and confirmability in a study are achieved by ensuring that the findings are representative of the participants and not representative of the traits of the researcher (Shenton, 2004).

A description of the research method was provided in this study and this can be seen as the audit trail of the study (Morrow, 2005). The course of the study can be traced by following the outline provided of the Phase 1 and Phase 2 data that were gathered sequentially, and the subsequent data analysis. The audit trail comprised of the researcher indentifying repetitive themes that emerged from the Phase 1 athletes, the triangulation of these themes with the body of existing knowledge, the design of an assessment instrument based on the emerging themes, the initiation of Phase 2 by collecting data from the participants and analysing and summarising the Phase 2 data. The audit trail came to its end by the researcher integrating the data obtained from both research phases. The audit trail serves as an indication of the accountability of the researcher and this was maintained in this study.

The integrity of the findings is evident in the data, and the researcher made a considerable attempt to integrate the data, analysis and findings in such as a manner that will enable the reader to confirm the accuracy and adequacy of the findings (Morrow, 2005). The researcher managed subjectivity by focusing on the responses of the participants, rather than



documenting her own impressions, perspectives and knowledge. The researcher aimed to integrate the data with the existing body of knowledge and not to integrate the data with her own views and knowledge.

It must be noted that the researcher fully grasps that these four goals of parallel criteria in the attainment of trustworthiness and rigor, do not accomplish exactly the same goals across research methods (Morrow, 2005). The researcher acknowledges that qualitative research is 'idiographic' and 'emic' in nature which means that the results obtained from a smaller participant base and the resulting themes and meaning obtained from their data, are unique to qualitative research. Qualitative research will yield different result to that obtained from quantitative research that is deemed 'nomothetic' and 'etic'. The results obtained from larger groups of participants in quantitative research is unique as well, and it is known that the focus is on standardised methods of assessments and the results are operationalised by the researcher (Morrow, 2005).

It is however acknowledged that mixed methods research serves its own unique purpose in addressing and integrating the different qualities from the qualitative and quantitative strands of research methods. This is clearly explained by Halie Preskill, a leading mixed methods researcher: *"Mixed methods research acknowledges that all methods have inherent biases and weaknesses; that using a mixed method approach increases the likelihood that the sum of the data collected will be richer, more meaningful, and ultimately more useful in answering the research questions"* (Johnson et al., 2007, p. 121). The researcher is positive that the framework of Lincoln & Guba as cited in Sale and Brazil, 2004, provides a thorough framework by which the quality of quantitative and qualitative research can be discussed.

### **3.10 Hypothesis**

This study consisted of three hypothesis:

1. There will be a relationship between habits, mindfulness and values. These three concepts will share a close triadic relationship.
2. The triadic relationship between habits, mindfulness and values will be experienced differently by athletes on different levels of performance. The level of mindfulness will differ among elite (athletes who have consistently performed exceptionally internationally) and non-elite athletes (athletes performing on national-, provincial- and club level). Elite athletes will also exhibit different habits and their values might be more refined and specific to their sport experience than those of the non-elite athletes.

3. Habits will play a role in the success of highly effective athletes and there would be general correlating habits for all elite athletes that is not sport code specific and that these athletes will also exhibit sport code specific performance facilitating habits. Elite athletes will have a sense of awareness of some of their productive and performance limiting habits and it is expected that awareness per se can be a prerequisite to choosing or changing habits. Values will play a role in the creation of new habits, maintenance of existing habits and changing or even transforming old habits into new habits. Some of the performance facilitating habits may be general and non-sport specific and some performance facilitating habits may be sport specific.

### **3.11 Conclusive overview of the methodology**

#### **Phase 1**

##### **Qualitative research method:**

Interview containing semi-structured and open-ended questions. See Appendix A for the question protocol.

#### **Phase 2**

##### **Quantitative research method:**

Self-completing Likert scale questionnaire based on information from Phase 1 and standardized questionnaires on mindfulness and values, as well as an online worksheet on habits. See Appendices B-E for the assessment instruments.

## CHAPTER 4

### Results: Phase 1 qualitative data

#### 4.1 Athletes' experiences and understanding of habits

Habits are generally referred to as routines or rituals in the sport context, though these concepts are not entirely similar in definition. Routines and rituals refer to those behaviour that an athlete engages in before, during or after an event and this behaviour usually serves the purpose of mentally stimulating the athlete in order to become or remain focussed on the task at hand. Habits do overlap with the concepts of routines and rituals and distinctly encompasses behaviour that are automatic or viewed as behaviour one engages in without necessarily thinking about it. For the purpose of this study, routine behaviour was referred to as habits in order to make it easier for athletes to relate to. During the interviews, athletes referred to routines and habits interchangeably as the same concept.

##### 4.1.1 Habits in context

Habits were divided into the following two categories: those that athletes felt contributed to their success in the sport context and everyday habits away from the sport context.

##### 4.1.1.1 Habits that contributed to success in the sport context

The following chart indicates the habits identified by the athletes as those that contributed to their success the most. The numbers indicate the number of athletes who identified the specific habit:

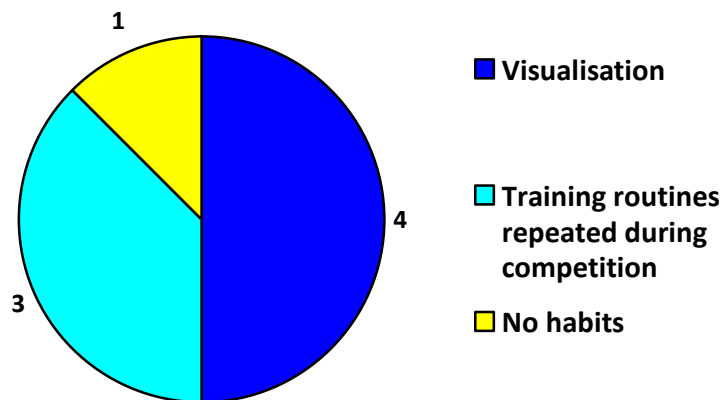


Figure 4.1 Habits contributing to sport success

Athletes found the repetition of their routines during training to be a key factor in attaining a high performance level during competition. Visualisation as part of training and part of pre-competition training is the other key habit identified by the majority of the athletes.

Only one athlete indicated that he chose to base his behaviour on requirements of the present moment and that he did not have any habits that he felt contributed to his success in sport.

The consistency of behavioural patterns were identified by Naledi, Mandla and Marie. They reiterated the repetition of training behaviour in competition situations. For them it is important to engage in behaviour that they are used to on the day of competition as it gives a sense of comfort as explained by Naledi. This comfort will reduce anxiety and help an athlete to reduce stress and enter a level of arousal necessary to perform well:

**Naledi:** *"... that what I did in training, I also did in races. Just the same. You warm up an hour before a race, you go through the same process... You go warm up, or you go to the toilet, you warm up, you do strides and you are ready for the race. So it was a process to get your body ready for a good effort, and if it is training or a race, I knew that when I start to warm up then I am readying my body for a big effort... so it was a bit of a ritual in a way. What gives you comfort..."*

Mandla started off by indicating a few pre-performance routines, indicating that he has a habit of sticking to what works. He then supported the view of incorporating training behaviour/actions in competition:

**Mandla:** *"I think I'm a little superstitious, like, if I drink 1,5 cups of coffee before a race, peanut butter on toast and that works, then I'll stick to that the next race. So I've got like a few things like that I stick to."*

*"I think it's also important to get into a routine. I try to, even before training now, I do a few warm-up drills and it's the same before a race. Just try and get into that routine and also try to get into that zone."*

*"So I think it's important to have some form of routine but I think you need to also have that routine in training as well to bring it through. So when you line up at a race, you just relax as far as possible and it almost feel as if you're going on another long training run."*

**Mandla** also identified visualisation as one of his habits:

*"... also through visualisation, try run through pre race and race stuff, in my head and really know what I'm gonna do and what can and can't go wrong."*

*"I think about the race a lot but also I try not to over think because then you tend to wind yourself up and get too tense. So you want to think about the race, I try and run it almost through my head like a best case scenario, like I'm feeling superman, and then like I'm feeling dead, the race is going okay, nothing great. So you run through all the best and worst case scenarios in your head, almost like when you go through it you feel like you've been there before. Because in a race you have so many highs and lows. I never had a race where everything kinda just goes according to plan or everything doesn't go according to plan. It's like a bit of everything. So I think you just got to be prepared as much as possible. Be able to think on your feet and like I said, stay relaxed. And almost for a long straight you almost have to switch off for as long as possible, like don't take it as a race."*

Marie emphasised the importance of visualisation and it being part of her training regime. She also indicated that she tends to intensify the repetition of her actions in order for it to be a normal part of her performance:

**Marie:** *"Well, I used to visualise a lot. And close to the competition, the way I lift, the way I get on the platform, from the way I take my powder before, the way I focus on the bar. It's got to be competition, the way I'm gonna do it in competition. Long before that it's almost like just training. Just get on the platform and just training, training, training, whatever. But the closer it gets to competition, it's almost like I have to keep repeating things the same way so that on the day of competition it comes natural."*

As noted by Mandla and Marie above, Charles and Dries also identified visualisation as a key habit in their pre-performance routines. They also mentioned practical actions that they perform before every race/game, each serving its own individual purpose. For Charles, his habits provide a sense of strength and comfort/safety before a race and he can feel the difference in his performance if he does not perform these habits:

**Charles:** *"I must programme the route. I must go and I must drive through the route a few times and the evening before I must be able to mentally race the route."*

*"I will thoroughly clean my bike and wipe it with a cloth. It doesn't make me faster but it gives me the... that I checked him and that there are no cracks or something so I do not worry about it." I always eat a steak for lunch the day before the competition."*

*When asked what happens if he doesn't eat the steak: "Then I feel weak during the race. We have been in situations where that couldn't happen and I didn't perform."*

Routinely touching the chess pieces before the start of a game gives Dries the assurance that he will play well. This habit also varies according to the strength of his opponent. His

ability to visualise the chess board gives him an indication of his form before the game. This will affect his opening choice and approach to the game:

**Dries:** *"But one thing I know that if I want to play well I always do... Just before I get to board, I will touch the pieces in a certain way. Once I do this I will know if I'm on top form or not. Like, first I will touch the pieces, like adjusting them for I don't even know how many times but just as a certain... I don't know how many times I adjust them. Sometimes I hold the rook and adjust them, but I will know when it's just right to stop (laughs)... I think it's also about the players' strength more than anything. But it happens systematically. Then what I will do is I'll try to visualize the board in my mind's eye, this is now before the opponent is there or he's there, but some time before that. I'll just visualize the board. And there is a certain way of seeing the board. If I see the board in a certain... just see everything sort of, just the board itself, just the board it's there, it's just there you know. But sometimes I have problems in seeing the board in that way. So it's not just about seeing the board. But if I see the board in that way I'm not struggling in anything, then I know that I'm there. I mean I can focus, I can play well. But sometimes I see that 'ooh' I'm struggling, and this and that."*

When asked if visualisation affects his play: *"Ja, it will affect maybe opening choices and how I play. I will not have the total confidence that I can really play."*

#### **4.1.1.2 Everyday habits outside the sport context**

It was quite evident that most of the athletes did not see themselves as individuals who have habits outside the sport context. The two athletes who indicated that they tend to simplify matters and life is in itself testimony to athletes sticking to routines and habits in their sport career and choosing to either live without habits or to keep life as effortless as possible by having the habit of trying to live a uncomplicated life. It is also possible that their sport habits have become such a part of who they are that they engage in these habits in contexts away from sport and do not even realise it. The numbers indicate the number of athletes who identified the specific habit:

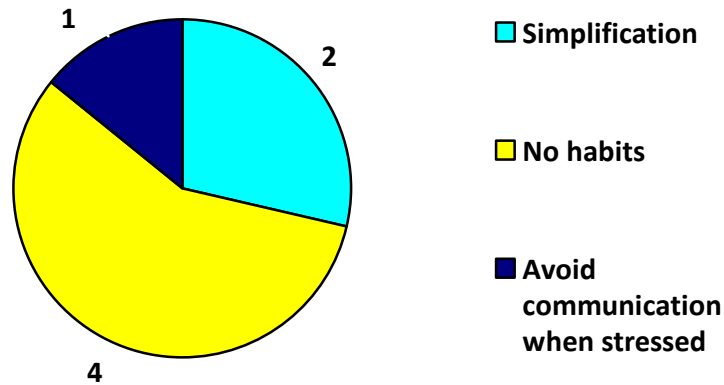


Figure 4.2 Habits outside the sport context

Simplification is a key habit for Naledi and she seems to prefer setting goals, defines what needs to be done to achieve it and then act on the plan. She prefers to work by tackling parts of a goal at a time and believes by doing so one can accomplish anything. She believes that confidence levels increase as one succeeds in the smaller tasks:

**Naledi:** *"I don't get nervous when I do stuff."*

*"Anything, literally anything is important. You must know what you want to do, and then you must put processes in place to achieve it."*

*"So you break it up into smaller pieces that makes you more confident to achieve it."*

*"So I try to simplify matters."*

Julia noted that she has a particular habit in dealing with stress in her life. When she experiences stress she listens to music and importantly prefers to be by herself and avoid contact with people:

**Julia:** *"I deal with stress outside the sport context by listening to music, but there I prefer to be alone and limit communication with others."*

Dries linked the presence of habits with that of anxiety and experiencing pressure. Without pressure and anxiety, there will be no habits:

**Dries:** *"But the thing is I have too few pressure moments outside chess, I would say, which would make me have a habit."*

*"Okay look, you can say things in a certain way but I think a habit only happens when you're anxious. You know, I think. I mean, I would think so. Well for me, when you're feeling anxious I guess about something, whatever. But I wouldn't have a habit just like that. It*

wouldn't be required of me. Okay maybe I associate habit with that pressure I guess. Because I believe habit is a way of getting yourself in a certain way. So that's why I'm saying if I was involved outside chess in a very pressured whatever situation, I guess I would have a habit there. Definitely."

Mandla identified superstition as a habit. He also recognised that his habits differ from how he behaves in life away from sport and how he behaves in sport. In his sport he has a habit of trying new things and in so doing stay ahead of his competitors, whilst in his everyday life away from sport, he tends to keep things simple (as does Naledi) and to how he usually operates:

**Mandla:** "... I think generally I'm a little bit superstitious. I'm a creature of habit."

*"If something works for me, I stick to it."*

*"So, it's weird though, because when I'm running I'm always trying to push the envelope and try to be outside of the norm, and then I don't know, when I'm eating, or life normal life, I like to try and keep it just plain and simple. So ja, I would say I stick to... I'm a creature of habit."*

Noteworthy is Marie's view on habits. She sees herself as someone who does not engage in habits and in fact, try to steer away from repetitive behaviour. She realised that she wants to be in control of her life and engaging in habits will remove some of this control:

**Marie:** *"I know people have habits and all things. I can't say I'm different in that way but I don't like to be that person that does things out of habit. I try to avoid that. How can I say. I can't eat the same breakfast like the whole week because now I like this All Bran flakes. I must have it every single day. I don't like that. And also, I can't carry the same bag for the whole week. I'm like that. Even people that smoke and that. I don't understand how they get addicted. I think it's because of repeating the same thing until you get to a habit and then you can't quit. So I have that thing of nothing must control me. Nothing. Even if I'm seeing this person. I don't like you want to see me every single day, you want to talk to me every moment, you're gonna annoy me because it's so predictable and so... I don't know. I don't think life is supposed to be like that."*

#### **4.1.2 Awareness of habits**

In sport, habits are often linked to routines and this is what Naledi, Charles and Mandla referred to when they indicated that their routines in training and competition are consistent. They are aware of these effective routines and ensure that they engage in them. Naledi mentioned that one learns through experience what works and that the knowing decreases anxiety by giving comfort of what needs to be incorporated into training:



**Naledi:** *"I think when you start out it is not necessarily a conscious... when you are small, you almost just pitch up and run. But I think as you get more routine in your training, you also know, you know what worked for you in training... So I think it's the experience that gives you the comfort of what you must do in future. I don't think it was necessarily there from the beginning."*

**Charles:** *"It's part of my routine. I am aware of it. I know it works for me and I make sure that I do it."*

For Mandla, his habit of arriving as late as possible for a race serves the function of avoiding that which causes tension. This habit ensures that he maintains his state of calmness:

**Mandla:** *"I think you try and make these habits routines. From doing them in training and doing it in the race."*

*"I have a habit of getting to the race as late as possible. I know people always start freaking out as soon as they start counting down and I rock up. But I don't like being around the people. I don't like getting the feeling that they are tense before the race. I'd rather be on my own and as calm as possible, and then step into the race."*

Dries has the habit of touching the pieces when he sits down to play. He recognised that he touches the pieces differently depending on the strength of his opponent. He will touch it more often against a stronger opponent and against a lesser opponent he will touch them once. He knows that he engages in this habit but does not consciously think about it:

**Dries:** *"I think sometimes I'm not aware. Ja, I think at a certain level but I'm not conscious of it. I know they are there..."*

*"It's something that you cannot call upon. It just comes. It has to be just the right pressure, game, just the right opponent, just the right... everything has to be just there. You cannot just any opponent or whatever, or unimportant game. That's just the point. It kicks in so to speak."*

When asked if he engages in the habit of touching the pieces when playing a lower rated opponent: *"No I touch them once. I just adjust them and that's it."*

#### **4.1.3 Habits playing a role in athletes' experiences of sport**

Naledi argued that one needs to be consistent with habits in all spheres of life. She distinguished between the persona of a person in and out of the competition setting and that the competition setting requires the person to physically perform on the highest possible

level. For her the disconnect between habits in different settings can lead to abnormal behaviour that is not conducive to performance or a sense of normality:

**Naledi:** *"You are who you are, if you participate and if you are not participating. Athletics is also a bit like acting. You go and there is a 'competitive me' that you go into. You actually ask your body to act at highest performance now. So there is a competitive me and an out of competition me. But I think the habits must stay the same. I think you get psychopathic behaviour where the habits are not consistent."*

Mandla once again reiterated his continuous search for novelties in his sport career. He also identified the habit of living to the full, always trying his best in all aspects of his life including sport and everyday living:

**Mandla:** *"I think I do stick to what works for me. I think in sport I do express myself a lot more and really try and push that boundary where I suppose in everyday life I'm quite reserved and fairly shy. In sport you have to be a lot more forward thinking... I think whatever I do, whether it's running or general life, I always try to do it to the fullest, for me it's all or nothing. I don't want to do anything half-hearted so if you can call that a habit, then I suppose it does follow through to sport. I think, in a way I also get really too focused on stuff... I'd give it a hundred and ten percent, even if it's doing something random, I would put all my energy into it and really get absorbed by it. I'm quite stubborn, I keep hitting my head until I get it right."*

Avoiding habits played a role in Marie's relationship with her coach. It caused her coach to be unsure of her behaviour as she did not have usual ways of behaving in situations. This might have had a negative impact on his planning as he could not foresee how she would have reacted in situations, since she reported that her behaviour was not consistent in all situations:

**Marie:** *"I never really had habits and I think that in a way it's not a good thing because I could see my coach, he used to get frustrated because I'm one of those unpredictable athletes. He can't say okay she's like this, this is what's gonna happen. No. I used to drive him crazy."*

#### **4.1.3.1 The role of parents' support habits**

None of the athletes mentioned that their parents were competitively involved in the same sport with them. Rather it seems that the relationship tendencies from parents were much more of a supportive role as can be seen from the statements made by Naledi and Dries:

**Naledi:** *"They had a very keen interest but they let me be. I always say that their support was there. Like when we went on holiday they knew, they never told me to go and train. But they knew I still wanted to train in the morning so they scheduled that we travelled after that, without telling me that I should go train... So they gave me that absolute freedom to choose and then gave me the support to do it... A lot of times it is almost like at the circus, the guys that do the tricks, it's just that security net. You can do tricks because you know that you are safe when you land. They don't love you more when you win. They are not angry at you when you lose. So I think just that absolute safety at home, that unconditional love, that allows you to do bigger tricks. Because you weren't scared to lose and you were also not scared to win. And I think that is the biggest gift. They always made it possible... they supported me when I wanted to race... I told them what I wanted to run and then they made it possible for me."*

*I would say that we (siblings) come from a sporty family where we definitely like sport, like to be fit and I think it is part of our lifestyle."*

*"So I am very glad that my parents gave me the opportunity to do what I wanted to do and how I wanted to do it."*

It is this safety-net approach that has been a big contributor to Naledi's independence in sport. She learned from a young age that she can make decisions for herself and her parents' approach assisted her in striving for her goals because she knew that she will be loved regardless of her performance. Her parents' safety-net approach minimised additional pressure to perform because they allowed her to basically manage her own running career as a child without additional pressure on her having to give account of how she performed if she performed poorly in their view.

Pressure to perform is a very common concept among youth sport and also identified as one of the key reasons for early drop out in sport. Naledi's metaphor of a circus and safety nets to explain the role her parents played in her young sport career is noteworthy and even more so that as an adult woman, she can account for the contribution that her parents made to her career, just by way of their habit of support.

There was also no competitive drive from Dries' parents. Both his parents seemed to have supported his love for chess by playing chess with him and sharing a joint love for reading chess books:

**Dries:** *"...she (mom) knows how to play. But I remember when I was young, when I was probably four, I used to play against her. She used to play against me. She knew the rules. But she never played seriously, obviously, and she never went to chess tournaments."*

*"Actually I never really played that much against my dad. We went through books together. I don't remember ever playing him seriously."*

Though Gert's father was a keen sportsperson, he rather contributed his participation in sport to him and his cousin's joint participation in the same sports as children and up to the present day:

**Gert:** *"I come from a family that... where my parents, my mom and dad weren't massively sport fanatics. My dad was a bit of a boxer and soccer player, my uncle was a boxer. My cousin and I, we play sport... It doesn't date back to my grandfather or anything. It basically starts with us."*

*"We grew up together and he played hockey as well. We still play hockey together in the club... And we still play cricket for the same club."*

A key aspect of active sport parents was highlighted by Charles whose mother and father both participated in sport on provincial level. It is his belief that his parents, having been provincial athletes, created a deeper understanding of the intricacies of his own sport participation such as how to deal with losses, setbacks and other performance related matters:

**Charles:** *"Luckily they (parents) understood what sport was about."*

Similarly to Gert, with both his parents being athletes, Charles recognised that their understanding of sport contributed to them knowing what he experienced in his sport and could thus best support him from their point of knowing what sport is about. The elite athletes' parents incorporated their habit of support in how they managed the young sport careers of their children. They consistently behaved in the same way towards their children in their manner of support, thus creating their own unique habit of parental support.

## **4.2 Athletes' experiences of mindfulness in sport**

Mindfulness seems to play a vital role in the sport careers of elite athletes. The athletes spoke candidly about their awareness of behaviour that was counterproductive to their own performances and so also provided insight into their ability to be mindful of their behaviour and the consequences thereof.

### **4.2.1 Understanding mindfulness**

Before proceeding to a deeper discussion about mindfulness, athletes' understanding of mindfulness was first conceptualised. The elite athletes all linked mindfulness to a state of

awareness. It is interesting to note how the athletes each chose to describe the meaning of mindfulness.

Naledi described mindfulness as being aware of how her body feels and with being in sync with who she is. She also extended mindfulness to knowing her needs as an athlete in order to be successful:

**Naledi:** *"To be in tune... I got up in the mornings and when I went to run I knew how I felt, I could listen to my own body... just to be in tune with who I am and what I need to perform in athletics."*

Gert linked mindfulness with his surroundings. He noted the role of being aware of how the surroundings will influence performance and how he also has an impact on his surroundings. He explained that awareness assists in planning, since being mindful of oneself and one's surroundings provides one with the information one needs to deal with whatever or whoever is present in any moment of one's life. Gert emphasised the core concept of mindfulness and it is to live in the moment and being aware of everything within that moment. This awareness of aspects in one's life provides ease in making decisions and dealing with any matters:

**Gert:** *"It's to be aware. I think mindfulness is just being aware of your surroundings. Mindful that you are going to be playing in an environment where its gonna be 40 degrees every day, and just realising the surroundings where you're gonna be, people that are around you, that's what you have at the moment, this is going to be what you work with. And if you're mindful of anything that happens around you, or within you or whoever that you are dealing with, it just helps you to actually plan better, to arrange things better within your life and be more aware. Ja that's what I think of it."*

*"It's living in the moment and realising what's happening. If you're mindful of things it's easier to take care of them. If you're not mindful of anything you're in trouble."*

Dries defined mindfulness as using thoughts and understanding to know what must be done in a given moment. It includes taking note of situations and what is happening in a given situation:

**Dries:** *"I say we all know what you have to do but to think about it at the right moment, let me put it that way. And I think that is important not only in sport but in anything, I mean, if you're not mindful if someone, a small kid is trying to cross the road, I'm just making an example, and you walk because you're not mindful at that moment. Maybe nothing will happen. But about two minutes later you realize, oh man I should have helped that kid. So you're not mindful at that moment. That to me is what it means. Its understanding what*

*needs to be done at a certain level and using the right information at the right time. That is what being mindful to me is."*

Mandla linked mindfulness to the awareness of entities and people. He realised that although his sport is quite individualistic, his value of not hurting others coincides with his understanding of mindfulness in that he is aware of those near him during competition and he competes in such a way that is not hurtful to others. In order to do this, he needs to be aware of others close to him while he competes. He finds himself in his most mindful state when he is running in the mountains. It is then when he feels he is fully aware of his surroundings. He enjoys every aspect of his surroundings and this contributes to him finding pleasure in his sport. Being so aware of his present moment assists him in focusing on every step he takes and the mindfulness of this exercise reveals a certain truth about his sport: that putting one foot in front of another is the real essence of his sport and there is no way to do it any differently:

**Mandla:** *"I'd say if you are aware of things and people around you. I think what I do is quite a selfish sport. You've got to be really self-absorbed and self-focused. But you also don't want to harm anyone around you like I would say, you gotta put yourself first but as long as you are not harming anyone around you. It mustn't be to anyone else's detriment."*

*"And I think that's why I enjoy running, like when you go run in the mountains, you have to live for that moment. You're not worried about what happened, you don't have all these different thoughts around you. It's like putting one step in front of the other, soaking it up, enjoying the natural beauty around you, making sure you don't stand on a snake. You're actually living for the moment which I think I really enjoy about running. It's a real sport, there's no hiding, when you're running up a mountain it's hard work. There is no hiding from it."*

Marie highlighted the same awareness of surroundings and an awareness of herself as Gert and Dries did. She also linked with Naledi's view on being mindful of what it takes to be successful in a sport career by being in tune with her own body and her capabilities:

**Marie:** *"I think it's to be aware. Aware of yourself, aware of your surroundings, aware of your capabilities, just awareness."*

Julia also included her surroundings in her understanding of mindfulness. She also noted that one should be mindful of others and be aware of how one's actions and words can influence others:

**Julia:** *"Mindfulness means to be aware of what is happening around you and how your actions/words can affect people around you."*

#### 4.2.2 Applying mindfulness in the sport context

Knowing what mindfulness is and actually applying it in one's sport career are two different concepts. All the elite athletes could describe in detail how they experience and make use of mindfulness to improve their performances.

Naledi mentioned in her previous response that she is 'in tune' with her body. This also assists her in being aware of her emotions. She learned to control her emotions and discard them during times of performance. For her it is important to note that performance should not be controlled by emotions and therefore emotions should rather be controlled. This application of mindfulness to her sport context is a very effective way of creating a focused mindset:

**Naledi:** *"I could switch off from stuff. Every emotion can't determine your performance."*

Charles explained that he uses mindfulness very effectively in his sport career. He credited his long sport career to his ability to be mindful during a race. Where Naledi referred to controlling emotions, Charles referred to controlling thoughts as part of mindfulness. He disciplines his thoughts to be present in his race-moment and not wonder off to moment-specific unimportant topics:

**Charles:** *"I think I apply it every time. I think that is probably why the longevity of my career stretches over 25 years. I think every time that I participate I am in the moment, I am at that race and I know what it is about. And when I am in the race, my thoughts are not at SARS, at home or with something that is happening in the team. I am in the race. I am in that moment."*

For Gert, mindfulness is a useful tool he uses in determining the intensity of his efforts in training. He acknowledged that people can assess the intensity of his efforts but it is not accurate, as he is aware of the effort he is really putting in. It is this awareness of his work ethic that he became mindful about, that now assists him in planning on how he works on his sport career. Because of mindfulness, he can adjust the intensity of his work efforts, being fully aware when he is not working as hard as he can:

**Gert:** *"I can apply it by realising what I'm dealing with... I can be mindful of the situation that I'm in, that I'm putting in hard work, and people say: "You're working hard, you work hard, you're training and you're working." But I tell myself no I'm not working hard. I'm not working as hard as I should be, in my sport kind of thing. And if you're mindful about that and say I'm*

*working hard but I'm not working as hard as I could be working, and if you can say I can push, I can work harder, then you work harder. But I wasn't mindful about that for a long time in my life, in my sporting career. But now I'm mindful of it and I've catered for it about how I wanna work it."*

Dries was of the opinion that mindfulness can assist in helping an athlete not to be distracted by outside influences. He realised that he could be a much stronger player if he incorporated mindfulness in his career:

**Dries:** *"If I applied mindfulness I would probably be a lot, lot stronger."*

*"Because many times you are not in the moment. Many times, as I say, many times something from outside will influence you. By the end of the day it is you that's letting it influence you."*

Mandla's view on mindfulness was similar to that of Dries'. He noted that mindfulness assists him in being focussed and not being influenced by distractions. It is a skill that he feels can be learned. He believes that trail running contains an element of letting him be aware of his surroundings and that this is probably the reason why he started trail running. It is noteworthy that he added considerable value to the role of mindfulness in trail running as well as the role it plays in his reason for participation:

**Mandla:** *"You've got to be really focused and in the moment. You've got to teach yourself to be able to really get in that zone and really focus on what you're doing and not worry about anything else around you. And I think just in everyday general life, when you're training, you can't let outside influences affect you."*

*"I think trail running allows you to switch off from everything else and just really absorb it. I think that's why I probably started running."*

*"But I definitely found myself running more and more because I could almost escape reality and just zoning into that moment and the only thing you think about is that view in front of you which I think is really important. I suppose for any sport, especially at high level, you've gotta really be able to just kind of focus on what you're doing."*

Julia emphasised the role of her being aware of not only her own emotions, but also those of her team members. It is important to her to be mindful of how she is feeling and to not contribute negative emotions to the team environment. She also noted that she tends to be mindful of other people's emotions and this allows her to be sensitive to their emotional states. Mindfulness therefore contributes to team harmony and her own focus:



**Julia:** *"In netball it is important to be mindful because I practice my sport among fifteen other people. For example, if I am having a bad day, I can't bring that to court because the people around me are not the reason for me having a bad day. I must be mindful of their needs and emotional states on different days."*

#### **4.2.3 How can athletes benefit from being mindful of their everyday habits?**

An awareness of automatic behaviour or tendencies to behave in a certain way is uniquely developed in the skills basis of these elite athletes. They discussed the benefits of being mindful of habits in and out of the sport context and related this with their sport performances.

Naledi saw mindfulness as an asset to an athlete. It provides a broadening of an athlete's perspective. This broadening of perspective allows an athlete to be more aware of presenting opportunities. It also assists an athlete to be reflective of opinions and perceptions as the athlete becomes aware of it:

**Naledi:** *"You view everything from above and it gives you the ability to sometimes when you see it just from this one side, to walk around and see that it is just one of your perceptions. So I think in life it just gives you a more holistic approach that can only benefit you... I mean you can have a very narrow way of looking at things, it can be a wrong opinion, or perception, or you can miss out on an opportunity if you are not mindful in your everyday life. So I think it is an awareness that is a tool that can be very valuable for you."*

Gert has developed the habit of mindfully taking notice of his surroundings. This assists him on match days to have an automatic awareness of the condition of the playing field and to adjust to it accordingly. He reasoned that mindfulness eases the process of accepting external factors that can influence performance and therefore an athlete can adjust behaviour accordingly and not be distracted by external factors that are not ideal for performance. Having awareness of challenging aspects of surroundings and adjusting behaviour to it, create a sense of control within an athlete. It is this sense of controlling behaviour amidst challenging surroundings that assists an athlete to overcome setbacks and not blame surroundings for poor performance. Being mindful ensures an athlete is aware that surroundings can contribute to poor performance and to accept that and continue to focus on performance:

**Gert:** *"I'm that kind of person who when I walk in I just look around. When you get that habit right, I think it's a very good skill to have as a sportsman. It just helps you. It becomes such a habit, you don't think about it anymore that when you rock up at a tournament that this is the field that we're playing in is a bit slippery, so you've taken note of that, you've painted it in*

*your memory and you adjust to it. It might take a long time to adjust to it but you've actually embraced it. The sooner you're mindful about things, the quicker you embrace it. The quicker you embrace it, the easier it becomes on yourself and how you manage what you can manage. Because the field will feel slippery, there's nothing you can do about it. The best thing you can do maybe is to change boots. If the boots don't work, of course everyone is playing on the same pitch, so if you embrace it, you're gonna do better, and you're gonna control the controllable. You're not gonna be pissed off when you fall. You're gonna say that you're expecting that, ok this is what happens, I fell."*

Dries recognised the importance of writing down one's habits. Visually seeing it on a regular basis provides a continuous awareness of these habits and what an athlete aspires to accomplish. Keeping a journal of habits will allow an athlete to continuously reflect on progressive behaviour and adjust where necessary to improve as an athlete. He realised that it is an effort for athletes to keep a journal such as this and to do the work on adjusting behaviour but he also gave insurance that doing so will lead to optimum results:

**Dries:** *"If you wrote your habits down, you'd be able to see clearly, when do I perform badly, when do I perform well. You would."*

*"Look, if any athlete who does any sport, I'm 100% convinced. If any athlete, who does any sport, keeps that journal where they write their habits, from a young age, under 10, they will be number one in the world, full stop. I don't care what they do. They will be. There's no way they won't be. Because they are writing the blueprint of how to perform. They have to be number one. Because they always adjust, they always do better, they're just going to improve at such an incredible rate that no one else can compete. It doesn't matter what, running, whatever it is. So that's the thing, but its sometimes a big ask you know."*

Mandla noted that awareness of habits is important for athletes and it is vital to continuously assess if behaviour is consistent with those valuable habits that an athlete initially identified as important in his/her career. He also touched on values and mentioned that one should have a belief that one's habits are constructive. He stressed the importance of consistent improvement and therefore one should always be aware of new habits and tools that can be incorporated into an athlete's career. It seems that Mandla recognised the importance of sticking to behaviour that gives results and to also be open to new ideas that can assist in improving performance:

**Mandla:** *"I think it's important to know what your habits are and to kind of go back to them now and then and check actually if you still value those habits, ja so I think you gotta check those and also double check that they still work for you and if that's what you believe in. And*

*then also I think it's important to stick to what works for you but also to not get too caught up, you also gotta keep think outside the box, be a bit more forward thinking and want to improve... You wanna keep improving. Because if you don't keep improving, the guy behind you is gonna catch up. So I think it's important to check."*

Marie linked the importance of mindfulness to eating behaviour. Being aware of her goals and the food that can hamper the attainment of her goals requires discipline. It is about being aware of immediate and long-term pleasure. An athlete must also be aware of behaviour that can put an athlete at risk of injury. She emphasised that an athlete should protect him/herself from anything that can have a detrimental influence on results. It is therefore important to be aware of goals and things that can interfere with the attainment of those goals:

**Marie:** *"If I'm having this huge cake and I have a competition in a week's time. You know things like that. You have to be always aware okay. Or if you come to me and you come with my favourite muffin, I must be able to be in control. I must be always aware okay, there is this thing that's more important than my pleasure now, So you're always aware. And also, I can't go and let's say I like playing rugby or something on the side, besides now my other sport, I must be aware that I can get an injury. Then I won't be able to perform. Like things like that. Or if I have a motorbike, close to competition I have to think okay, this is a risk. Whatever you know it's gonna influence your competition. It's almost like you're so aware in a way you're protecting yourself. You're channelling your body and everything to that one focus which is your competition."*

Julia agreed with Marie on being mindful of eating habits. Mindfulness plays a role in the avoidance of conflict because being mindful of behaviour can assist in avoiding habits that can cause conflict. Julia's focus on interpersonal relations was evident throughout her responses:

**Julia:** *"By being mindful of your habits you can avoid conflict and to be mindful about your eating habits, for example, can cause you to perform optimally."*

#### **4.2.4 Awareness of counterproductive behaviour towards performance**

In discussing how behaviour can be or was counterproductive to performance requires that an athlete has reflected on mistakes made during his/her sport career or on bad performances and possible reasons for the poor results.

Naledi indicated an awareness of behaviour that contributed to success as well as behaviour that were counterproductive. She performed to her optimum when she had little focus on the

result, but rather concentrated on her process of preparation, being aware of how well she prepared:

**Naledi:** *"The times that I didn't do that (having a much more calmer, realistic, wider approach), having a much more 'urgency' around the result of the race, are the times when I didn't do well."*

*"Where the focus was on the entire process. I mean, you prepared well, you are in great form, it is a time to execute, is when I ran well."*

Charles also indicated awareness of counterproductive behaviour. He stressed the level of his awareness by indicating that he is 'fully aware'. Controlling his own path is quite important to Charles since his sport career is a top priority in his life. He is very much aware that his performance can be negatively influenced when he gives this control over to a team manager and his needs are not met as a result. His awareness of his resulting irritation and the effects of this on his performance was important in order for him to manage this emotion:

**Charles:** *"I am short tempered... I am fully aware of such behaviour traits. Under circumstance I am not the most patient person. But it is because I realise that I have trained extremely hard to be here today. I am 100% in charge in my environment. 100% in my training, diet, rest, my recovery. I give all of this over to the manager when I arrive at the airport and I get on the plane. And that manager must ensure that I can sleep well, eat well, arrive calm at the race, that I don't worry, and when we are under resourced this doesn't happen... And then one get irritated and at the end of the day it influences everything, plus your mental state, your performance."*

Dries remembered a time in his career when his behaviour was counterproductive to him achieving good results. He acknowledged that alcohol consumption and late nights used to be part of the environment of professional chess for him. His awareness of these behaviour was instructive as he realised that it was not assisting him as an athlete and he thus stopped engaging in it. He is currently aware of one behaviour that is working against his attainment of success which is laziness:

**Dries:** *"A lot. Laziness. Okay but maybe I stopped. There was much more but I stopped. Like drinking. Drinking for sure. Smoking to a certain... but drinking for sure, definitely. And you'd be surprised how many chess professional drink a lot. So it's difficult in retrospect, but when you are there in that world, you know from tournament to tournament. There's a lot, you play at 3pm, sometimes you go back late to bed and you're busy with friends and you're drinking a lot, but its counterproductive. Sometimes you have a hangover and this and that."*

*So I've stopped that. But right now I don't really know any negative behaviour, except okay, old habits just sometimes being lazy and so on but I mean it's not bad you know."*

Mandla is aware of the influence that people have on his performance. He realised that becoming distracted by those around him is severely detrimental to his performance. He knows that he needs to maintain a state of calm and diminish any doubt by believing in his own abilities:

**Mandla:** *"If I get too focused on the people around me, that's the worst thing possible, you just really got to switch off."*

*"I know for me I've got to be quite relaxed."*

*"I think it's important to just be at peace with yourself and happy with what you're doing and be 100% confident in your capabilities not second guess yourself at all. A lot of it come down to self-belief."*

Marie referred to her lack of discipline with her eating behaviour as counterproductive to her performance. She realised that this lack of discipline in maintaining her weight and reaching her target weight, possibly prevented her from reaching her true potential. It will remain an uncertainty forever. She referred to an aspect that Dries mentioned in one of his comments and that is that people know what they need to do to reach their full potential but yet somehow do not always engage in the needed behaviour. It seems as if she had this continuous inner struggle throughout her career:

**Marie:** *"I think when it came to my diet I was never as disciplined as I should have been, as I was supposed to be."*

*"Okay I could cut out here and there but I couldn't diet to really reach that 69 for a competition. I feel that in a way I, how do you say, prevent yourself, not prevent yourself, I got in my own way of maybe performing better than what I performed. But I always made myself feel better, I don't know if I would have been a good athlete in the 69. Nobody will know because it never happened."*

*"I think when I was supposed to eat a whole lot more I didn't eat as much and when I was supposed to eat less, I didn't eat as less so my diet was... it played a big part in my sport but I think I was just never so mindful and so aware just how important... how do you say, you know when something is very important but you kind of 'ah, its important but whatever', something like that."*

#### 4.2.5 Awareness of the psychological component of participation

The psychological component of performance is vital to any successful sport career. Being mindful about this concept is important for an athlete as it assists an athlete in improving mental skills either by developing certain mental skills to combat negative influences of his/her performance or knowing what and sometimes who to avoid before competition, since they are aware of possible negative results should they engage with certain people or expose themselves to certain situations.

Naledi showed awareness of mental processes throughout her career. She was mindful of the role that pressure played in her participation. She knew to not internalise it but rather avoid it by building her expectations of results on the quality of training she did for the specific event:

**Naledi:** *"Often times it is in hindsight that you see that you went into that race with an I-must-win. That expectation. I always say: 'pressure only becomes pressure if it is internalised.' It is people's problem if they expect you to win. But it becomes your problem the moment you start internalising it. My expectation were built on good training. It's the entire process that gave you the confidence and calmness."*

Gert mentioned that he is very aware of mental aspects that impact negatively on him before an event. He prefers to control his thoughts that could be based on previous encounters with the opposition or any information he might have about their skills and technique. He much rather prefers to be present in the immediate moment and deal with matters as they arise. When competing he does not favour drawing conclusions from the past about his opponents and allow that to influence the way he would compete against them in future. He focuses on how he feels on the day of competition, acknowledges it and then deal with his feelings in an appropriate manner:

**Gert:** *"So being mindful of the psychology thinking of my abilities, it works in a sense where I know what not to do when I'm preparing for stuff. Like I don't wanna be thinking about other stuff. I don't want to over analyse, I don't want to over think about how I played yesterday. I don't wanna over think about how this team plays. Last time we played them and are we in form now? I think it's for me, the psychological part of my game is everyone always dates it back, like we always date it back and say for future, last time I did this, oh well. It works for certain people, I don't take that away. And they think ahead. For me it's always been the present. Like, how am I feeling today? I'm feeling a bit tired and down, so I jump a cold shower, jump in the pool. If I'm still feeling a bit lethargic, then ag, I say okay know what, when I get to the field I'd be fine. I do that. When I get to the field, I'd be fine. If I feel a bit*

*tired, if I feel lethargic, I'd be honest about it. I'm lethargic. Sometimes it's just how you feel, but when you play, when someone else is watching, you don't look like it, you actually look better than what you looked yesterday when you were feeling 100%. So ja, it's just a mental switch where you try to shut down and just be aware of how you behave and try to stay in the here and now which is the most important part."*

Dries is very aware of his own ability to influence his opponents psychologically. He aims his psychological tactics only to players of vaguely similar strength, players he feels will be vulnerable to his psychological ploys. He recounted a situation where he, himself, felt intimidated by an opponent who reacted to his psychological tricks in an unexpected manner:

**Dries:** *"Very much. Very much so. Especially when I'm playing in key games. It's just pure psychology. I don't think about it but I'm able to, but I'm one of the players who is very mindful of that. I can create a lot of tension on the board. a lot. I mean, unbearable amount of tension I'm able to create at the right moment, against the right opponent."*

*"I mean sitting at the board with the player. Not the moves, but slightly outside the board. A lot of psychology, a lot of acting, a lot of all that you know. It's part of the game. Ja I'm able to really do it at that level. But of course it's not necessarily when the player is too weak or if the player is too strong, then it doesn't matter. Then it doesn't play a role. So it has to be the player who is within range you know. But as I say, when I'm playing well it can be even... I remember for example at the Olympiad where I didn't beat Casper. It's because when I started trying to get into his mind, he immediately said "don't disturb me". It was for me like a blow. I looked at him. It was like a blow and I was at the receiving end you know. Okay I should have won the position and I'm not saying that, but it contributed. Had he let me get into psychology and do this then I would have been able to. Anyway, but if I play him next time I know what to expect, so when he does this I will be able to... (laughs). It will be something I'll be expecting (laughs)."*

Mandla is also very aware of his psychological preparation and state. He is of the opinion that mental state is what differentiates high performing athletes from those that are skilful but do not have the psychological capacity to adjust to competition environments. He noted that good values and self-belief play a cardinal role in the make-up of a high performing athlete. Mandla mentioned that it is important to find and maintain the optimum level of arousal during an event and that mindfulness plays a key role in establishing this optimum zone of arousal:

**Mandla:** *"I think it's a big part of what I do. I'd say ultra-distance running is 60% physical, 40% mental if not even more mental at times. So I think it's really important to be mindful. There are so many good athletes out there but mentally, psychologically, they aren't strong enough, where guys that aren't such good athletes might end up performing a lot better just because they are more in alignment with what they want and believe in themselves. Ja, just have better values."*

*"You don't want to be too switched off or you just like lalala, you don't care. You want to be in the zone, but you don't want to be too tensed that you end up using too much energy. I probably have 3-4 really big races a year and like a week before those races I can really feel like I start to get quite edgy and I have to do some breathing at times just to try and calm down a little bit. Even a week before I go and do my training runs and I start thinking about the race I would see that my pace would start speeding up and I gotta like say, hold on, just relax, you're not in the race, take it easy. So ja, it's important to relax but you also need to be switched on and in race mode at the same time. So its finding that balance which is really important."*

#### **4.2.6 The role of mindfulness in sport**

The elite athletes drew on their own experiences to assess if mindfulness can be applied to other sport codes as well. In particular, they noted the importance of mindfulness in the length of an athlete's career as well as the possible differences of the usefulness of mindfulness in team and individual sport codes.

Naledi noted that mindfulness is vital for an athlete with a long sport career. For her it has to do with the awareness of motivation that gives meaning of participation for the athlete. Mindfulness also provides a sense of control over mental aspects. For example, during a long-term sport career, an athlete is bound to experience periods of bad results and if an athlete is aware of reasons for participation and aware that he/she is experiencing a tough time in sport, the athlete can draw energy from knowing why he/she has chosen to participate in the specific sport. Mindfulness helps an athlete cope mentally with challenges during a long-term career:

**Naledi:** *"I think it is an important component for everyone in a long career. In the end, you are there (in sport) because of you and I think to have a mindfulness around that for any sport through the motivation and reason why you are there, you must always control this. That's something over which you have control. I think to be mindful about that on any level is an essential component."*



Charles recognised that mindfulness has a positive effect in both the sport world and in an athlete's life away from the sport context. For him, mindfulness allows a person to live fully everyday:

**Charles:** *"Mindfulness is important for any person, not just for sport... I think it is important that people make the most of every day."*

Dries drew the distinction between team and individual sport codes. He felt that awareness of situations involving another person (the competitor) can give an athlete the edge over the opponent. It can provide an athlete with the knowledge of how to behave in a situation in order to benefit from it. He did however also realise the role of mindfulness in individual sports and mentioned golf as an example. Dries was of the opinion that mindfulness relating to mistakes can assist an athlete in an individual code to improve where mistakes were made, though he highlights the role of mindfulness in team sports as well:

**Dries:** *"I think where you are in direct contact with your opponent it definitely will play a role. Physical sports or an athlete where the opponent is right there. Ja mindfulness will definitely play a very important role but I think in a sport like golf, where one player will hit, maybe, maybe not so much. But of course in golf as well, if someone was making mistakes at a certain point and they are mindful of those mistakes it will obviously contribute but I think it will contribute more in other sports where the competitor is there. I think if you are mindful of the situation, you are definitely one up. If you know exactly what's going on, using everything that is within the rules, to tilt the situation in your favour. I think you are definitely, sportingly, in a good position."*

Mandla's view of mindfulness coincided with the views of Naledi and Dries. He linked a successful career with an athlete's ability to be mindful of mental aspects. For him it also distinguishes one athlete from another. He agreed with Naledi that mindfulness assists an athlete to overcome obstacles in a long-term career. Mandla was aware that the importance of mental skills increased the longer he was involved in his sport:

**Mandla:** *"I think it is for any sporting code, I think it's really, really important. I think that's what separates someone from here to there. You will definitely see that the guys that have more mindfulness, psychologically they are more mature and more aware. They are definitely the guys that go further and can really achieve when the odds are against them. The more my career has progressed, the more I think that the mental side of things becomes so much more important."*

## **4.3 Athletes' experiences of values in sport**

The reasons for engaging in certain behaviour is a complex matter. Motivation to act and the manner in which individuals choose to act, is ideally a conscious process in order to purposefully align behaviour with those core values, according to which an individual would like to live. Unfortunately this is not always a conscious process due to the prevalence of habits and thus automated behavioural patterns.

When discussing values with the elite athletes it seemed apparent that it was a topic that they first had to think about before giving their views. Describing one's own values and thus moral set of guidelines according to which one lives and makes decisions is not an everyday topic so it was understandable that not all athletes could readily talk about it, especially when asked about behaviour that compromised their value systems.

### **4.3.1 Identifying core values**

The elite athletes, through much thinking, identified the following core values that are important to them. It is interesting to note the overlapping core values of these elite athletes. The bigger segments in the chart indicate values that were repeatedly referred to by more than one athlete and the number values indicate the number of times it was referred to during the interviews.

### Most important values identified by elite athletes

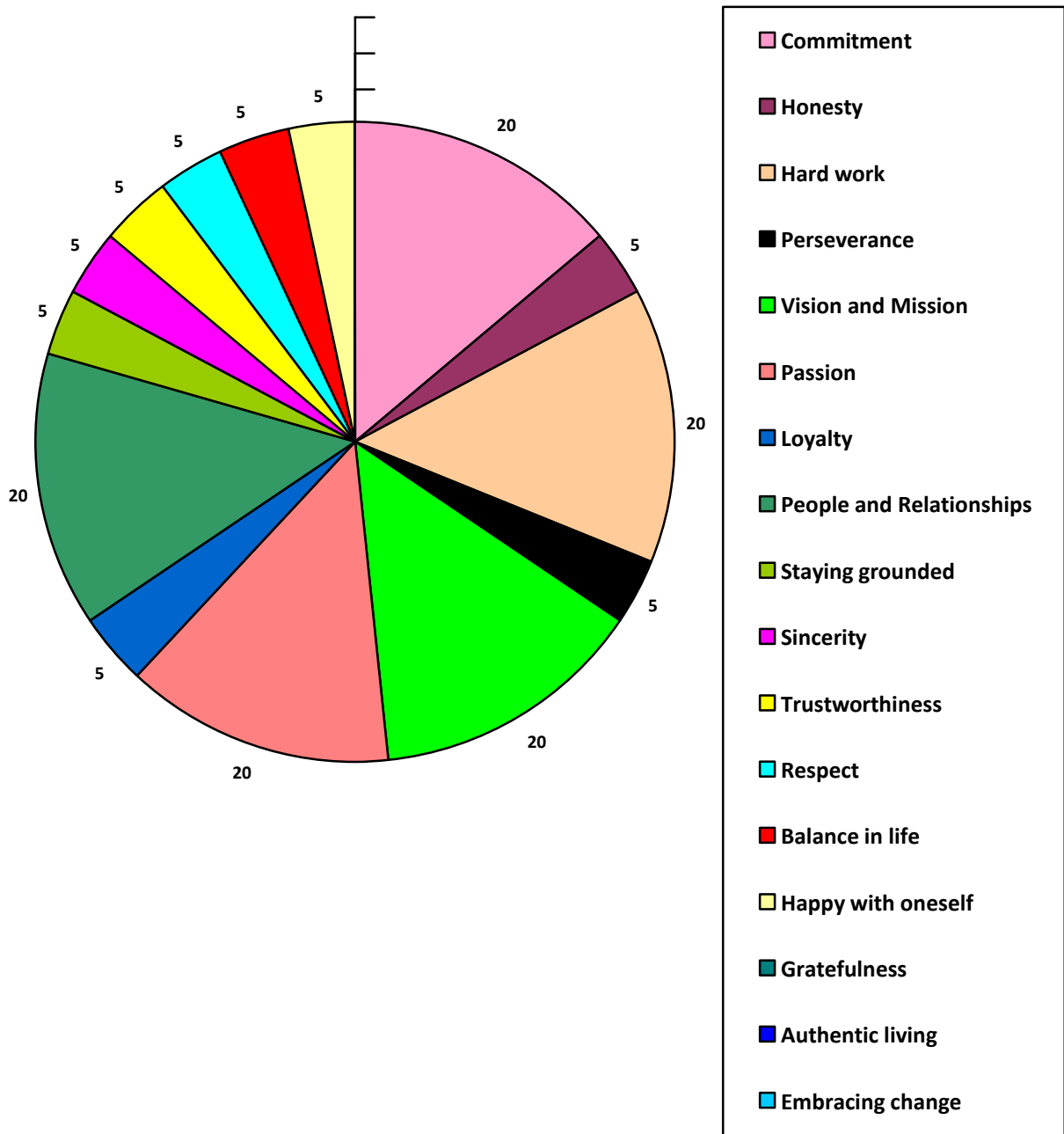


Figure 4.3 Values identified

Naledi linked her values with religion. She is driven by her beliefs in the Word of God and finds it a part of human nature to strive to live according to a Higher Order such as can be experienced from God or an entity greater than humans. She values authenticity and

therefore uniqueness. Naledi reasoned that results in running is a reflection of one's training which entails commitment and hard work:

**Naledi:** *"I think living authentically. In running, what you put in, is what you get out. Your commitment and contribution will give rewards."*

She linked values with religion: *"... for me, the values of the Bible are the fruit of the Holy Spirit. It is this that drives me from within. The basic values of being human, to live that which you would want to see in a God or greater force."*

Charles chose to live his life according to what he believes in. He referred to these beliefs as concepts. These concepts entails his striving to live a balanced life in which he includes the people that support him. It is important for him to have ideals in life that he can reach for and to derive meaning from setbacks in his life. Charles gave considerable value to the concept of adapting to changes in life. According to him it is the embrace of change to each new phase of life that determines one's quality of life:

**Charles:** *"I don't know if it is values or concepts, but I have things that I believe in:*

*- I believe you must be able to dream big because if you can't dream big, you don't really have a starting point from where you can begin.*

*- I believe you must be able to embrace change because as you go through life, every single phase that you go through... you have a choice. You can make the best of it or you can resist the change in your life, that next phase, and never enjoy your life because one day when you look back, it is going to be how good you adapted to every single phase in your life that is going to tell you how good you lived your life.*

*- I believe setbacks, because I am in sport, I have to create meaning of setbacks, like a sportsman will do of training.*

*- The issue of balance is very important to me because it is no fun when one day, when you win or lose, you are alone. So balance is all those people around you that support and help you.*

*I don't really have values, I have concepts such as these."*

Similar to Charles, Gert also identified significant others such as family and friends to be a vital part of his life. He values their contribution to his life and therefore sees them as important. He values goal setting and the striving towards the attainment of it, regardless of the result. For him it is the actual attempt to reach for the attainment of the set goal that is of importance. He therefore values hard work. Passion is also identified as a value. His valuing

of learning from setbacks relates to the same view that Charles had concerning creating meaning from setbacks:

**Gert:** *"I think one of them is, stay grounded."*

*I think if you identify something like a goal... You just identify it and you go hard at it. The worst that can happen is you don't get it right. You're not the best and you failed and you didn't become the best. But you've actually done something about it. You've identified something to work for and its gonna keep you working every day."*

*"... people around you are important hey. Whether they be parents, your friends around you that add value in life. Those values that you treasure the people around you with their small contributions."*

*"... you just gotta put your heart into it. Put your heart into whatever you're doing."*

*"... in every bad thing, in every bad situation, in everything bad that happens, there's always like something out of it that you could learn."*

Dries emphasised the views of Naledi, Charles and Gert by identifying three key values that he felt contributed to his quality of life and striving for success as a sportsman:

**Dries:** *"Hard work. Loyalty. Perseverance."*

Mandla referred to the same authentic living as Naledi when he referred to living a life that is true to one's own self. It entails an acceptance of oneself and being at peace with one's own being. Honesty is definitely part of this authentic approach to life as without honesty one can hardly expect to accept oneself. His reference to the importance of having goals is similar to the value of having goals as mentioned by Gert, and adding to that the value of having a plan in place to achieve identified goals. Again the value of passion is noted as did Gert:

**Mandla:** *"I definitely think honesty and being true to yourself. Just having peace of mind and being happy with yourself. I think that's the most important thing."*

*"I think it's really also important to love what you do and be passionate about what you do... I think if you're passionate about something you can really make it work."*

*"... you gotta have dreams and goals that you want to achieve, but also have like a plan."*

Valuing family and friends seem to be a near central value mentioned by elite athletes. Here Marie emphasised this value as also identified by Charles and Gert. Honesty is also mentioned as a most important value and this relates to the value mentioned by Naledi and

Mandla. Though Naledi did not mention the word 'honesty', it is one of the fruits of the Holy Spirit that she referred to.

**Marie:** *"I value honesty and also how can I say, relationships. Especially with family. That's the most important thing for me."*

Again the value of honesty is identified as a core value. Julia also identified values that are central to her own integrity and the way she relates with people around her, as her values are based on interpersonal connectedness:

**Julia:** *"Honesty. Sincerity. Trustworthiness. Gratefulness. Respect."*

### 4.3.2 Compromising on values

Five of the seven athletes indicated that they have not compromised on their values in their sport careers. Two athletes indicated that they have:

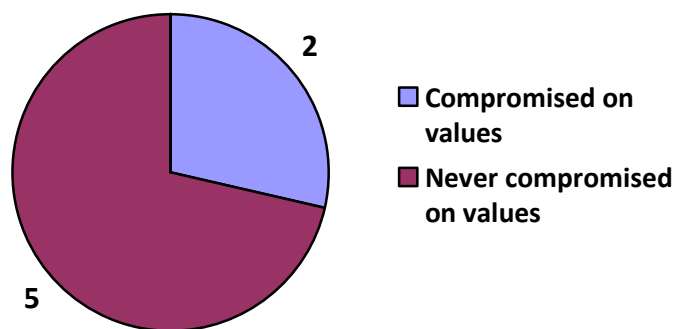


Figure 4.4 Compromising values

Naledi emphasised her earlier view that her results were always a reflection of her hard work. Her goal has always been to improve as an athlete and she believes that she has done so without compromising anyone else or her own values. Victory was reached when she improved and did her best. She linked values to that of a personal philosophy and related this to a winning mentality. Her value of seeing winning as proof that she has improved ensured that she did not harm herself or any other athlete to physically win a race. She therefore felt that she never compromised on her value of striving for personal improvement:

**Naledi:** *"I think it was always that I wanted to be the best that I can be and never at the expense of someone else. I don't think I ever tried to compromise on who I am in order to perform. My performances were a reflection of my investment."*

*"I don't think I had a winning at all cost philosophy. I just always that you can be a winner doesn't matter where you are... For me it was always, I am a winner if I did my best."*

Gert acknowledged the human nature of not always being driven to attain success, becoming stationary and without ambition to excel. With this he referred to not working hard in training and feeling that he would rather be somewhere else. This had an impact on his team as he then was the one who did not work as hard as the others. Gert also related his compromising on his strong work ethic to the work environment:

**Gert:** *"You tend to slack a bit in life. Some of us slack more than others. Ja, sometimes you get so complacent."*

*"Ja, I neglected values and cut down on hard work a bit. Just been over it because of few team environments or team fights or inner fights in the team where you just think: Ag I'm over this nonsense I don't want to be here, kind of thing. So, at that moment where you feel you don't want to be there and you just go there for the motions, I think that's where I've compromised on those values. When you compromise once, even if it's for five or two months of going slow, ja, it's got a lot of impact on the rest of the people that you are working with. Whether it be sport or work. At the time you just go to work for the hell of it. Other people are pushing and you are the weakest link in the chain."*

Mandla identified being true to himself and happy with himself as core values for him. He has compromised on these values whenever he gave greater value and importance to the opinions and thoughts of other people, neglecting his own personal views and beliefs about himself:

**Mandla:** *"And there are times when you almost just feel like you're losing those values or I just... I think at times with running.. it's like you gotta prove things to people, and you're really worried about what people think."*

Marie brought the conversation home to her own specific sport and ways in which people can compromise on the value of honesty. Cheating by means of taking prohibited substances is compromising behaviour that she identified in contrast to her own value of maintaining honesty in her performance. Keeping her own integrity intact was also a driving force behind her not willing to compromise her honesty to get ahead in her sport career. Similar to Naledi, she wanted to achieve success in an honest way:

**Marie:** *"I was always honest. Because I'm an honest person I don't want people to perceive me as not honest and I can't cheat even if I want to. For example, in sport there's many ways of cheating like in terms of drugs and that. But I always used to think to myself I won't*

*even know what I'm capable of if I'm gonna cheat, if I'm gonna use drugs. And also if I get caught, all that hard work is gonna be wasted because people are would think, even if I get caught the first time I'm using, it's gonna be like: okay that's why she was so good, it's because she was using. You know. So I was like, I have to achieve whatever I achieve by myself and then I can feel proud that I did that on my own without cheating. So I try to do things the right way."*

#### **4.3.3 The role of values in the sport experience**

Naledi credited the presence of values in an athlete's life to sustaining a successful career in sport. Without values an athlete will not have the skills and likely not cope with disappointments as it is an athlete's values that assist the athlete in being grounded in solid beliefs in something higher than the athlete self. These 'bigger things' might refer to personal potential that is still unlocked as well as a reference to a spiritual world. Values also provide consistency and therefore prevent an athlete from being influenced negatively. She found it important that an athlete maintains his/her identity through good and bad results:

**Naledi:** *"I think it gives you the right tools because there are many disappointments and successes and if you are not anchored with a strong inner belief in a lot of bigger things than yourself, then you will not necessarily continue."*

*"It's a core to keep you in a sport. Because I think if you don't... you will be easier influenced and fluctuate. So, if I run well, I am a good person and I am acceptable, and if I don't run well, I am unacceptable. So there must be consistency in the type of person that you are about where you are from, what you believe in and not about the outcome of your sport."*

The impact of values in Gert's life was emphasised by him contributing his success to the presence of values in his life. Values had the same significance for Gert and Naledi. Just as Naledi, his values played a defining role in his entire life, not just in sport. It impacted his thinking and had a positive effect on his attitude in life. His values influenced how he related to people and also how he lives as a well known sportsman:

**Gert:** *"I think it's got me to where I am at the moment. Within my sport. The values itself are just the way I think I've applied it in my life. Throughout. I think the values that I've learned, whether I learned them in sport, or some of them in sport, some of them outside of sport through my parents, through my family. It just had an impact on how I live my life as a whole and how I'd like to approach being a recognized sportsman and how I see people..."*

*"... and it just influences the way I think hey. I think it had an impact on the attitude I have, I like to think I'm a positive person a lot of the time."*



Mandla agreed with Naledi's view that values assist an athlete to not be influenced by external forces. He believed that when he is in sync with his values, his results are at their optimum. His best performances were associated with him living his life in such a way that is consistent with his values. For him and Naledi, living according to one's values meant that one is accepting of one's own character and entire being. He acknowledged that values can change as one gets older and maintained that self-reflection is necessary to ensure that one's behaviour and life is consistently stable in following initial core and important values:

**Mandla:** *"I think you definitely gotta stick to your values. Like all the values that I mentioned. When I'm most in tune with them, and I don't get as affected by the outside influences. That's when I actually achieve my goals and I actually run the best."*

*"I think when I deviated from those values, that's definitely when I performed my worst. And when you are really in tune with your values, and you are happy with yourself, with the person you are and you really enjoying what you do, passionate. I think that is when I definitely perform my best. It's important to stay in tune with your values. And even at times, I think you almost gotta to take a step backwards, like even now we've taken a step out of race just to train and trying to improve as an athlete. It's important, it also gives a bit of time to reflect, which I think is really important. I think maybe your values could change slightly as you get older or as things change. So ja, just making sure those values are still the same and that you are in line with them and you kind of have not changed."*

Julia touched on the role that values play in defining who one is as a person. Naledi and Mandla mentioned the same notion. Similar to Mandla, she drew attention to maintaining core values and that her participation in sport did not alter her values. Her consistency in living her life according to her values in all spheres of her life is congruent with the manner in which Gert prioritized his values. She values respect and recognised this as a core value in team sports which she felt she positively contributes to:

**Julia:** *"My values make me the person that I am and my sport doesn't change me. Respect is exceptionally important in team sport and I feel that is a good quality that I bring to the team. Similarly, all my values are evident in everything I do in my sport."*

#### **4.3.4 Underlying values identified**

##### **a. Mastery orientation**

All seven athletes gave considerable weight to the importance of intrinsic motivation in their experiences of their sport. Their reflections and knowledge of this theme contributed to the understanding of their work ethic as well as their values and habits.

Motivation can refer to any component of an athlete's career that serves a function of spurring the athlete on to participate, move to competition level, remain an active athlete or to improve and reach for higher goals. This differs for each athlete, though the important concept is that there must be some form of motivation for an athlete to be involved in sport. This is guided by values and it subsequently influences the development of certain habits in order to achieve certain goals. It was generally accepted that intrinsic motivation is the desired type of motivation since the rewards attached to extrinsic motivation is not always a constant as it is only linked to good performance which is also not always consistent.

Naledi explained vividly how intrinsic motivation has been her driving force since the start of her career and how this type of motivation assisted her during later years of her career. It has always been important for her to focus on her own goals and not those of others. She also aimed at competing against herself, her own times, instead of preparing for specific athletes since one could never be sure if specific opponents would be present on race day.

Her parents never rewarded her with gifts. Rather, she preferred to improve as an athlete and work towards her own personal goals, hence valuing the mastering of her own skill and potential:

**Naledi:** *"Throughout it was for me... I focused on my own goals. So I always tried to beat myself and I felt that I was successful even though I didn't win the race."*

*"It is nice to achieve something that you have set as a goal for yourself. Then your goals get bigger. But I think because it was always very personal and not necessarily just attached to a win, so it wasn't for me that a win a success and a 2nd a unsuccessful, so the entire time it was a measurement against myself. I always tried to run better than I ran previously. So I had a lot of personal goals."*

*"And I think a few of the peers, I mean, that beat me as junior, got rewards when they won the race, their dad told them he will buy them this and that. So that I never had. My parents never promised me stuff if I won. So I think it was more of an internal drive, than the external because there was a promise of a lot of stuff that's going to happen if I win races."*

*"Yes I try to only beat myself because if I do the best I can, I mean, I can't do more than that. And sometimes the result was a win, sometimes it wasn't. But you could still be chuffed because you ran better than you have ever ran. And that I did since I was small. It was an important component in my career. Then also, it doesn't matter where you participate, because you don't have control over your opponents, you don't know who will arrive and who will not arrive. So you can just race who there is... people that arrive. So if you build your*

goals around: *I'm going to beat 'that one', and 'that one' is not there, what then? So I had personal goals.*"

The value of mastery orientation guides the athlete to direct behaviour on a consistent basis towards the realization of dreams and goals. Consistent behaviour can become habits. Naledi developed the habit of competing against herself and her own times from her value of being orientated towards the mastering of her own potential.

### b. Achievement orientation

Most of the athletes recounted someone who impressed them by performing exceptionally well in sport. The numbers reflect the number of athletes who indicated that they were inspired by the achievement of another athlete:

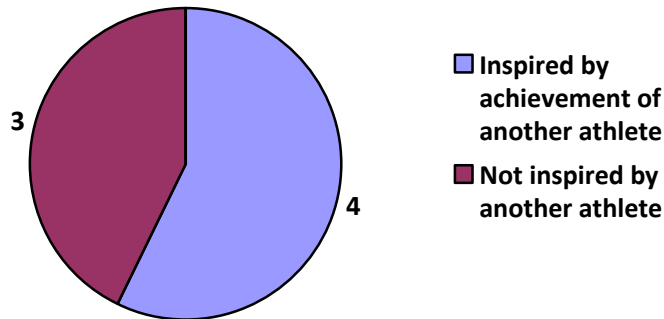


Figure 4.5 Achievement orientation

Naledi was inspired by the sport performance of someone in an entirely different sport code. At the time she was doing athletics purely for enjoyment. She was exposed to the idea of achievement by the performance of another athlete:

**Naledi:** *"My first trigger point was actually more around gymnastics when Nadia Comăneci won the Olympic games as a fourteen year old with a perfect ten. That was actually my first dream. .... "At that point it was more the fun side of running that intrigued me."... "So I was definitely triggered by someone else's performance."*

Dries found his inspiration/motivation in the same sport code that he involved in. He has only read about the top chess players in magazine and books. Due to the nature of chess at the time, there were no television or internet broadcast of events or tournaments which meant that players could only read about other players in books and magazines. Local players were the only ones that one could be directly inspired and motivated by and Dries found his

motivation from international players and locally from some of the country's top male players at the time:

**Dries:** *"From the word go, you know, I was reading about world champions and grandmasters. I used to like Fisher a lot. I would read. So I was really motivated by Fisher, I would look at his games and I would try to look at Karpov and other players and I was always comparing."*

*"And I would look at their games and would say "okay, I'm not so far or whatever". I had that type of motivation. My motivation, I never competed with anyone in South Africa. You know, I mean, it was not like today where you have a lot of kids playing. When I played it was just adult tournaments only."*

*"Then anyway, I read the South African Chess Player, I'd all of a sudden read about these names you know, \*Ruben Sicilian, \*Levan Slav and all this guys, and I started taking games down of Ruben Sicilian. I told him about this and he was laughing. You know, I studied him actually. You know I'd take his games and I would write them down and then I would replay them and memorize the games. Because he was the best player in the country and I figured, okay, I still can't play like these guys, like Fischer and so on but if I'd play like Ruben Sicilian, I can beat everybody else. So I was playing like him and I was not afraid."*

*"I mean all the world champions. I had such a vivid imagination, even guys like Paul Morphy, cause you'd read a book, I think it was a book I read "From Morphy to Fischer" or something like that. I'd read a book and then I'd see, they would write about him, that he was very young, he couldn't practice, he went to Europe, to play. You know I would 'see' that, I would see this world. It was for me, chess was like, it was quite an amazing world. When I play chess for me, it wasn't just chess. It introduced me to the world. You know, you would read first, I would see how the world was and I would imagine. And I would play over the game, so I got inspiration from so many strong players. But I would say Fischer and Karpov always stood out and I really always enjoyed their games and I always wanted to emulate them and try to play like them."*

Both Mandla and Marie were fortunate to not only be motivated by top performers in their respective sporting codes but to also compete alongside them. Mandla was inspired and motivated by reading about the top ultra marathon runners:

**Mandla:** *"I remember on the plane I read \*Joe's ultra marathon book. And he was one of the first very well known ultra marathon runners. Ja, reading his book and actually knowing that he is going to be at the event really inspired me and just to see some of his achievements. Ja, I definitely looked up to him a lot and then to actually have him at the*

*event and meet him and actually run with him and actually end up winning the event, it was a dream come true for me. So definitely someone like him has given me a lot of motivation. Even some of the guys that kind of set up the scene like Scott Jurek. Reading his book has really inspired and motivated me."*

Marie was firstly exposed to weightlifting at Olympic level via television. At the time she was not involved in any sport. She decided to try it out when a development programme for weightlifting was introduced at her school. She was motivated and inspired by seeing local talent perform at the South African Championships. She was inspired by the lifters' skills and techniques:

**Marie:** *"Well, firstly I liked it when I saw it, you never see it but when its Olympics then you see just a glimpse of these people lifting weights and it looks fun and I wanted just feel how it is to pick up weights. And obviously I wanted to get stronger and I wanted to do a sport and I wasn't sure which sport to do and when they were doing development and went to my school and introduced weightlifting, I was like "okay, I'm gonna try this". I've seen this in TV and I wanna try this. That's how it started. And after that it just went on and on and on and on."*

*"Because when I started, because before I even reached provincial level, I went to watch a competition, the South African Championships, here in Strand. And the way they lift! I was like sitting there "I have to do that, I have to reach that, you know, that level where it's like the technique is perfect, the speed is like amazing. Everything. And to see it live, it was amazing. And one of those people was \*Kate and eventually I got to train with her and travel with her and be in the same team with her. So she inspired me. And her speed, it's one of the things that I admire about her. The speed she picks up that weight is like... Every time I watch her I'm always like amazed. I have to do that. But obviously we can't all be the same."*

Besides having exceptional athletes to look up to, it is often times someone closer to the athlete that can inspire and plant the seed of a dream as what happened at the start of Naledi's career. She was motivated by an ideal that her coach told her about and she could relate to this dream of achieving the ideal he told her could be possible, that wearing a national symbol could be possible also for her:

**Naledi:** *"Then he (coach) had these individual conversations with us and then he said: 'one day, if you really want, this tracksuit (referring to her provincial tracksuit) can have a springbok emblem.' And then from there it was my dream, it was a drive force and something that I really wanted to do."*

The accomplishments of other athletes showcase and resemble achievement. It served the same function for all the elite athletes in that it awakened a sense of greatness within them. Through the performances of others, they were given a moment of insight in what it meant to achieve, to achieve something that is only possible through hard work and dedication. Achievement encapsulates all forms of mastery over oneself. These elite athletes incorporated this value and based their behaviour on what they found to be crucial to achieving what was showcased to them through the work of others. The value of achievement orientation assisted them in building behavioural repertoires aimed at achieving the pinnacle of self-mastery and performance.

### **c. Passion in sport**

Naledi addressed the value of having passion that is needed to aspire to greatness and how this is a determining factor for continuous sport participation. This has impetus as it correlates with general views on intrinsic motivation as discussed above. The passion that she referred to is stagnant until it is awakened by an outside influence. According to Naledi, this passion does not ignite by itself. This is the reason why inspiring and motivational coaches, teachers and role models are necessary in the sport context. Participating in sport with this intrinsic passion causes the athlete to also enjoy participation and this is an essential component to resilience in sport:

**Naledi:** *"It's not just about the skill that you learn... But it is something that comes from inside, it's not an outside... it's not an external thing... You have a passion that is contagious. And that is why people just start to really like it. A lot of times it is a teacher or coach that ignites it. You have to ignite it. So there has to be opportunity... some are ignited through that performance of Nadia Comăneci. A lot of times, when you listen to Olympic interviews, you can almost hear it as a refrain: 'When I was nine years old, when I was ten years old, I saw,' ... you often hear it in swimming: 'When I was twelve years old Michael Phelps won Olympics and I was inspired.' There is something that ignites it. A lot of times it is this." A lot of times it is that belonging that you find, sometimes you start running due to hidden motives but then you really find the love and passion for it. And I think there isn't a lot of people that does it just because they are good at it. I mean, you're just not going to continue doing it. Because if it's not really fun for you, it's hard work. You are just not going to, you are not going to continue."*

Being passionate about a specific sport assisted Naledi in maintaining a long-term sport career. She valued being passionate about her sport and it is this value that played a meaningful role in the pleasure she derived from competing and being involved in her sport.

#### **d. Striving for excellence - pushing the envelope**

Athletes contributed the reason for their success to a variety of factors. Though one must be cognisant that these athletes all participate in different sport codes, it is interesting to note that all of them contributed their success to mental factors, albeit various mental factors. The athletes all valued a consistent striving for excellence. Their commitment and hard work are evident of their constant pushing and extending their limits and boundaries.

Central to Mandela's belief about the reason for his success is a continuous striving towards development as a person and an athlete. This also indicated his preference for intrinsic motivation. Throughout his interview, Mandela referred to the concept of thinking outside of the box. This seems to be a central idea in his approach to performance in which he highlighted that finding new ways of doing things in his sport can distinguish his results from the rest of the field:

**Mandla:** *"I think it's a combination of things. I wouldn't say I'm the most talented person in the world, there are guys that are more naturally gifted. But I think it's always trying to think outside of the box. Almost better yourself as a person and as an athlete. And for me it's not just about winning races, it's actually just trying to keep improving as a person. So it's definitely that quest to become a better person and a better athlete."*

*"I suppose I really love what I do which I'm really passionate about what I do. Like running a hundred miles seems crazy but that spending time in mountains, it excites me. And I think new challenges and new goals, it makes me excited about life. Like waking up on a Monday morning knowing you've got a like a crazy week of training, that's what you love doing. And you want to improve and you want to get better so you look forward to it. Like every day is a new adventure which I think is what excites me and what motivates me."*

Charles touched on the concept of mindfulness as he related part of his success to being in tune with his body. This entails being aware of how his body works and knowing that his body takes time to get ready for competitive participation. A balanced life and a consistent build-up to an event were key concepts in his experience of being a successful athlete:

**Charles:** *"The prerequisite is that you basically have to live a balanced life."*

*"So I train progressively, I never start with a 'bang'. I listen to my body. So I think the most important is to be in touch with your body. You must learn to listen to your body and do the right stuff at the right time and to realise that you can't start training a year in advance for a big competition."*

*"So for me it has always been: live balanced, work progressively and listen to your body."*

Marie emphasised the role of focus in maintaining excellence. She also referred to a level of discipline, commitment and prioritising her life around whatever she has set as a goal. Focusing is a tool that helps her in remaining committed to her goals. It assisted her in keeping her personal life separate from her sport life when she needed to perform. She has in effect developed a habit of including focusing as part of her life:

**Marie:** *"Focus. Focus. Because your life doesn't evolve around your sport. There's other things that happen but because you are focused you know okay everything else comes second. This is where I'm going. For me it was that. Whatever happens. If it's raining, storming whatever, I'm going to gym because I have this competition in mind and I can't sit around and if there's personal problems, I can't sit in the house and eat whatever, I have to maintain my weight because competition is coming up. Because of focus you can't really slip away and be like "okay I'm gonna fall apart now because of this or personal issues". So I believe that focus is your number one trait that will get you there. If you focus on something, everything else doesn't matter, you know because you are focusing."*

The presence of sacrifice was evident in Gert's account of what is necessary to be performing on his level. It is clear that he has done a considerable amount of reflection on the sacrifices he has made in his life to have reached his goals. For him, chasing a dream in sport came at the price of not reaching certain milestones at expected ages as the rest of society:

**Gert:** *"It takes a lot of sacrifices hey. It's a lot of mental work in terms of actually just training and realizing, when you look at it and say: "If I'm gonna train now". I might be tired. But I can imagine another Australian guy is training twice as hard probably wherever he is. Which probably he is doing that. For me it's been a lot of mental work and a lot of sacrifices where you miss work, you not gonna finish your degree on time, you're gonna miss a lot of modules, you're gonna tour the world. You're not in the process to start a job until you probably like 25, 26 where some people have finished their degree and they've got their degree in the corporate world at 23. And you realise, hey, I might have missed something here. It's one of those things that you just become at peace with and you chase some different dreams. I'm chasing a dream where I'm not gonna make much money but it's a goal that not a lot of people get to reach. Not a lot of people can say I played in the biggest tournament in the world, like you played in the Olympics. Not a lot of people can say I played in there. So it's one of those dreams you can't quantify which is something special."*

For Dries, high performance required a component that may be best related to as passion. It is this passion that propels an athlete towards giving his/her best. This striving to excel also



provides the athlete with a feeling of fulfilment. He also touched on the concept of improving as an athlete, not necessarily focused on external rewards, similar to the view of Naledi:

**Naledi:** *"I think that there is a certain, I'd even call it a hunger, that I cannot explain."*

*"But I think at a certain point, well for me really to perform is just, there is some, I cannot describe it, a certain hunger you know, a certain desire you know, it's not about a result, it's not about, it's just a certain desire that you feel fulfilled that every time you are giving your best, and you are playing, you're trying to get better you know."*

Julia might have been referring to the same 'hunger' that Dries referred to by her use of the concepts 'heart' and 'passion to perform'. She also identified aspects such as commitment and resilience that refer to mental discipline so an athlete can keep training under tiring circumstances and stay focussed on the goal:

**Julia:** *"To perform on a high level requires commitment, passion to perform, resilience, the ability to try again if you were not successful the first time, and heart."*

Naledi also raised the concept of sacrifice that coincides with commitment as mentioned by Julia, Gert and Marie. She also noted an orientation towards perfection needed to perform in long distance running. It is a combination of mental and physical aspects. It seems that an athlete who is aware of all these required aspects will stand an optimum chance of good performance:

**Naledi:** *"You operate on such a tight string because everything has to be perfect. You must be 100% healthy. You must be hydrated. You must be well trained. You must be rested. You must be healthy. If not all of these... you cannot perform in my sport."*

*"But it is just a unbelievable commitment and there is a lot of stuff that you give up in the process. And if you are not prepared to do that, then in distance running you do not have a chance. So you must be committed, train very hard, stay healthy, so I mean there is just a lot of stuff."*

The value of striving for excellence is based on the incorporation of the value of passion and the consistent inclusion of certain behaviour, albeit habits, in an athlete's preparation and performance. The athletes have identified how the habits of consistent focus, sacrifices, hard work and balanced lifestyles contribute to their value of striving for excellence.

#### **e. Hard work/Effort**

A central theme from all these top performers was that none of them saw themselves as the most talented athletes in their field. They valued effort and this meant working hard and

being determined in their quest for excellence. The elite athletes fell into the habit of working very hard to give credence to them valuing effort and thus their commitment to excel.

Naledi identified perseverance as a talent which, for her, was needed to endure the long process of becoming a successful athlete. It required hard work. For her, training was fun and she viewed this as a unique trait required for a successful and long career. Though she emphasised mental concepts, she also acknowledged that the physical component is vital, though on its own, will not ensure success, especially long-term success:

**Naledi:** *"So you need good physique, obviously, but the biggest part is just that commitment to the process that takes long. So you have to be willing to invest five to ten years. There isn't an elevator to success. So it's a long process. Most of the talented athletes don't have the stamina or perseverance to go through the process. And I mean, that's the other talent you must have. So the one talent is that you must have basic physically good attributes, but personally I think I wasn't the most talented athlete. But I could train hard, I didn't get sick. I was just crazy about it, it was fun for me, training did not feel like a punishment to me. It was fun for me. I don't think everyone is like that."*

Charles reiterated the concept of not being the most talented athlete, rather identifying hard work as a key concept. Similarly to Naledi, he noted the long-term approach of building success:

**Charles:** *"I don't think I'm especially athletic if I look at the other people that I compete against. I think I have a good work ethic and I know how to work hard and obviously after twenty years I have a very solid foundation and I can get myself in good shape within a few weeks. But I like that long-term approach."*

He mentioned that younger athletes who are talented have a mindset that everything must simply fall into place for them because they think that their talent alone will suffice to achieve excellence in their sport. He noted that it is rather important to work hard as that is a trait among top performers:

*"So there is a level of: 'I have talent and therefore everyone must do everything for me'. Where the guys that came out on top will tell you: 'you do everything for yourself' if you get to the top."*

Again, acknowledging the role of hard work in an athlete's career. For Gert, hard work and attitude are determining factors of a successful career and he also referred to himself as not the most talented athlete. Being clear of what you want to achieve and then putting the

required steps into action is also central to achieving success. This is similar to the approach that Naledi followed in her life:

**Gert:** *"I think I perform well for the effort that I put in... A lot of talented players who can be as talented as you want to be, but you don't have the right attitude or you cannot put in the hard work. Trust me, you're not gonna survive. You'll be fine at thirteen, you'll be fine at seventeen and eighteen, school level. You get away with it. But beyond that, for me, I believe this: there's no space for that. Because I don't think I've been the most talented guy. I just decided I want to go to Olympics and I worked towards that goal, I had a goal. And I knew what kind of steps I need to take to get to that goal and I went for it hard. And ja, I did it."*

Dries recognised his own talent and is also aware of his strong work ethic. For him, improvement was a result of hard work. He noted that one needs a certain unknown amount of talent to be a successful chess player and consequently he would not have been a strong player if he did not have this so-called talent for chess. Hard work is a key component in a chess players' career and one has to continuously work at it. No amount of talent is enough without the hours of effort to learn and improve chess specific skills and techniques:

**Dries:** *"I think it's both (talent and effort)... I'm conditioned to say: No, I'm not talented, its hard work. Okay, because if I answer that way and I take it that way then it means I can improve more. It means I can put more work and I can go higher, you see. But actually in my heart of hearts, I really believe I am very talented in chess. Okay you cannot measure it in terms of very talented, like which level, but I believe, I work hard, I mean I can work hard, but mainly I definitely think I am talented enough... But I also believe that I'm able to work hard at chess."*

Mandla confirmed the notion that talent is not all that is required to be an exceptional athlete:

**Mandla:** *"I think it's a combination of things. I wouldn't say I'm the most talented person in the world, there are guys that are more naturally gifted."*

Marie highlighted the physical factor of strength in weightlifting, indicating that no matter the level of mental aspects such as focus, achievement will be impossible if physical attributes such as strength is absent. She also noted that she believes that both talent and effort are required to excel in sport:

**Marie:** *"I think it's a bit of both. I do think it's a bit of both because anyone can develop strength because my sport is about strength... So I think it's your natural ability, genetics"*

*whatever and your focus, obviously. So, if one of them is lacking, I could have been how focused. If I just don't have the strength, I would never reach till here as far as I've gone."*

A critical part of sport performance is the difference of requirements on different levels of skill. Julia distinguished the role of talent and hard work by referring to school, provincial and national level. She indicated that one can achieve at school and provincial level with pure talent. To maintain excellence on a higher level will require hard work in addition to natural talent. It seems then that for Julia, the effort invested in training was what distinguished the talented athletes from each other at elite level:

**Julia:** *"I think it's a combination of the two (talent and effort). I certainly have a talent for the sport because from a young age I did better than others without really training hard. One can get away with just talent at school and maybe still provincial level, but to constantly perform on a high level requires much more than just talent. Everyone that performs with you on a high level has a talent and to view yourself as the best, you have the work harder and put more in than the one next to you."*

The value of putting effort into their striving for excellence seems to be a distinguishing factor on the outcome of performance. Giving wings to this value requires athletes to make investments in their journey as sportsmen and sportswomen and this includes the establishment of behavioural patterns that ensure achievement.

## **f. Representing values**

### **1. Providing opportunities to others and being a role model**

Naledi valued the lessons she received through her participation in sport more than the actual external rewards such as medals. Although she did not expand on this, she spent considerable time explaining the importance of giving children this opportunity to learn through the informal platform of sport:

**Naledi:** *"But sport gave me a lot, a lot more than medals in the cupboard. And because I got so much out of sport, I want young children to go through the same processes. Because it is the process that was valuable to me. I always say that my athletics, sport, was my best teacher. Even though I have my degree and my honours, even though I studied, it was athletics that was really the biggest teacher for me. And that is what you really want, that children, young children must, everyone must at least have the opportunity to do sport and to learn through that platform."*

Not only do the children benefit from athletes passing on their knowledge and values to them and giving them the opportunity to participate in sport, but so do the athletes that get

involved in motivating and teaching children to play sport. This can be either a conscious or unconscious process as she remembered being inspired by an Olympic gold medallist who did not even know that she existed. It put her in momentum to train and become the best athlete that she could be. Teaching a child and being involved in the development of children in the sport context is related to the completion of a circle, almost like the familiar 'circle of life'. For Naledi, this is what it means to be a role model. To take the lessons that an athlete has learned from being involved in sport and passing them on to the younger generation, enabling others to keep the momentum going in sport participation:

**Naledi:** *"You complete a circle by doing that. There will always be a gap if you don't... and with that you create momentum and movement. So I think there is a part that will remain a gap if you don't do that."*

*"The moment you pass it on, you complete a circle. And you put someone else in momentum. But if you stop there will always be this gap that you can't mobilize."*

*"It's not necessarily a conscious thing. I just think there is something that you really complete when you, the moment you... and sometimes it is unconscious. Nadia Comaneci didn't know that she inspired me. But through that she completed a circle. So she again mobilized a lot of people. But I think there is something special about completing a circle. Some has an opportunity to do it in a physical way to give a little back because you got so much through it."*

*"... the moment you complete that circle you played that role model role for a lot of people. And maybe you didn't even see yourself as a role model, but that closing the gap is for me the opportunity that people just really... because in ways sport meant something to you and that's why you continued doing it."*

## **2. On being a role model**

Charles highlighted personal traits and upbringing of athletes and how that either motivate towards them being good role models or subtracts from their roles as inspirational athletes that the younger generation can look up to. He argued that a person should not be an automatic role model just because the person excels in physical activities. He wondered why only sportspeople are chosen by society to be role models. He felt that people from all walks of life should be able to have an opportunity to inspire others by being seen as role models.

Charles argued further that it is unfair to a sportsperson to be seen as a role model and also expected to act like a role model, just because he has exceptional skills in sport. He felt that the person should at least be given a choice. People do not all have good upbringings and

this will influence the decisions that they make as adults. For him, a good role model is an athlete that has grown emotionally throughout his sport career. By being involved for a considerable time in sport, gives the athlete the opportunities to grow and learn and it is these skills that role models need to infuse in the younger generation. Experiences and lessons learned are some of the prerequisites of being a role model to children:

**Charles:** *"I always say I can't understand why, just because you can kick a ball far, or because you can run fast, or because you can swing a bat, society must make you a role model and put you on a billboard. Because a lot of times, why must you be a role model if you are good in sport? Why are you not a role model for the greater society because you are a good surgeon or a good engineer? Why must our sportspeople? Because a lot of times, sportspeople that achieve success come from dire circumstances and sport was their only way out. So now to expect from that guy, that didn't really have an ivy league upbringing to be a role model for children. That is unfair. I mean there is already so much pressure on a sportsman to perform and then to still expect him to be a role model that falls outside his natural characteristics. I mean, maybe he wants to smoke his dagga or enjoy his girls or whatever. I could never quite understand why society has decided that sportsmen must now be role models. And you hear it so often: 'Wow, you are such a good role model for children.' Why? You can swing a bat."*

*"You are talking about a more mature athlete. You talk about someone who matured through his career and mature as a sportsman. And then you must go look at how many people's longevity is long enough that they mature as a sportsman. That they have all those experiences, that they derive meaning from things, that they have in their minds that reference system where all the files are stored and know exactly what goes for what. That guy you can make a role model."*

Being a role model entails behaving consistently in a certain manner that is of such nature that society finds acceptable, honourable and worthy of following. A role model represents a certain class of values and it entails incorporating certain behaviours in the role model's life in order for the person to be predictable in action (habits) and to act in such a manner that others aspire to (values).

#### **4.3.5 Awareness of values in sport**

Awareness of values were a central theme among the elite athletes. They were mostly of the same opinion in that they recognised the increasing importance and awareness of values as they progressed in their level of sport participation.

Naledi explained that as a young athlete she was not very aware of her values as an athlete. Though she did relate an increased awareness of values to higher performance levels. She especially experienced a heightened awareness of her values during times of peak performance as well as times of poor performances. This served as times of reflection for her in which she assessed and questioned what was important to her. Again she raised the importance of consistency of one's values since the presence of negative influences increases as performance level increases. It is then when one decides what one is comfortable with allowing in one's life and sport career:

**Naledi:** *"When you are small, there is not a big consciousness around it. I think as you get more exposed and participate on higher levels and more people are wanting to have a part of you, then you get much more confronted and you develop more consciousness around it. At times when you are doing well, everyone wants a part of you, especially in those times, or if you do badly and there is no one around, that's when you become more aware of it and think more consciously about it. I mean, who you are, what are important to you, what your values are, what are the things that you will do and what won't you do. I can't think that I thought about all this when I was younger. While I think when you are participating on the highest level you get much more confronted with it. You are more exposed and it is then when it becomes much more important as to who you are and what your values system is. For that consistency."*

*"As you become more exposed, you get confronted with stuff that you didn't even know existed. Then you will consciously say: 'are these options, or are they not?'"*

Keeping in mind that Charles preferred to refer to concepts rather than values, his mentioning of maintaining balance is noteworthy. He explained that having balance means to include people, hobbies, work, sport and recreation in one's life. This enables a person to be well rounded and achieving success becomes more attainable:

**Charles:** *"Balance for example... you must have balance in your life. You must have a lot of stuff. I have a hobby, I have dogs, I have a family, I have a job, I have my sport, I have friends, I have a social life. All those things form part of balanced, wholesome person. And if you can get that right, success becomes a bit easier."*

Mandla echoed the views of Naledi. He realised that experience and progression in his career accounted for an increased awareness of his values. Reflecting on what is important to him assisted him in living according to his values. Mandla's values give guidance to the way that he lives his life:

**Mandla:** *"I have always been aware of the values but I definitely think as I progressed in my sport, the more I have become aware of the values. Like I realise that you need to be a lot more in tune with them. I suppose it's become a lot more spiritual, the more I've run and the more experiences I've had. And I think I tried to, like you said, become more aware of what values I hold and what's important to me and really stay in line with them and rethink my values and what's important to me as you progress. I definitely think... a lot of what I do is being in control of those values, being aware of them, being in line with them."*

Marie linked her values with the image that she portrays to the world. It is important for her to present an image that is a reflection of her true self. She wants to be seen as a good role model due to her level of achievement and thus a source of inspiration to others. Marie wants to be characterised by her living according to her values such as hard work and having passion for what she does. She also linked an increased awareness of her values with a higher level of performance:

**Marie:** *"I think the more I progressed in my sport, the more I became aware of how people see me. That's one of the reasons why I can never even cheat, not besides getting caught but I have to be this role model. I didn't choose it, but because people will look up to once you achieve certain things. Even if you're a good business woman, people will look up to you."*

*"For me I'm aware of what I'm doing, even bad habits, even coming to the gym and just chat to my friends and whatever. I used to think, you never know who is looking up to you. So the things that you are doing and... even at work I'm like that. I always think, okay, I have to think what I'm doing, how people see it. Not really that I'm so concerned what people think but I don't want to be that bad example of people think of me as lazy or just 'there'. I always feel like I always have to play a part and know my role and do what is expected and even more than what's expected of me. Always."*

Julia's view on the role of consistent values coincides with the views of Naledi and Mandla emphasising that it is important to maintain one's values in changing situations. The importance of values were instilled in her by her parents and she grew up with an awareness of her values and the importance thereof:

**Julia:** *"I have always been aware of it because my parents made me understand how important your values are and that you can't allow any situation to change your values."*



#### 4.3.6 When behaviour did not reflect an athlete's values

Charles recognised that other athletes will not necessarily have the same values as him. This can be reflected in the sometimes negative behaviour from athletes towards him during races. For him, one must be able to win regardless of the circumstances or behaviour from other athletes:

**Charles:** *"Obviously things happen during a race that infuriates you. Maybe because someone did you in because they don't have the same value system than you... Then you realise that not everyone has the same value system as you and it is sport. And you must be able to end at the top in all situations."*

Gert experienced reaching a plateau when he reached his goal of going to the Olympics. He did not have a follow-up goal to this primary goal. Because he did not have the motivation to reach and work for a specific post-Olympic goal, he neglected his training and discipline to work hard as an athlete. He started replacing his training habits with counterproductive habits such as drinking and being lazy during training. He realised that these new habits were not conducive to the team and decided to take time off from hockey and engage in these newly formed habits. It resulted in a four year period of reflection, leading to him returning to international hockey and banishing the counterproductive habits and values:

**Gert:** *"Post Olympics and I was ja, it didn't reflect my values. Like in my sporting career I, there was a point where I achieved my goal. Ja. Now what? I was going through the motions. And I wasn't applying myself properly. And the goal is gone. So I didn't have that push and all those values weren't in place at that time. And obviously it affected my game and the way I behaved. I didn't train hard enough, if I wanted a drink on a Monday or Wednesday, I'd have a drink and not worry about training the next day. And you do it, and that too becomes a habit where you just chill, wake up and go for a jog, because I do go for a jog regardless because it's just natural. I don't do the harder training because its fatigue... it affected my game because I wasn't really worried about hockey. So I decided let me take a break from the national team because I'm not gonna do the guys justice... And let me focus on working and drinking whenever I want to and be an adult... it for 4 years though. Ja, I think it was one of those things, it was my reflection time in terms of post Olympics and looking at my life."*

Dries recounted an incident where his behaviour was not just in violation of his own value of honesty, but it was also detrimental to another athlete. He cheated. This compromised his ethical standards. He believes that progress in sport is an outflow of hard work. When one works hard, there will be no reason for cheating behaviour since hard work is reflected in

results. Success is clear cut and can be achieved without manipulative behaviour. He was so affected by his own cheating behaviour that he never repeated it which indicated that he reflected on his behaviour and was emotionally aware of his own mental state when he engaged in the cheating behaviour:

**Dries:** *"I remember I once cheated actually... to me it was complete opposite of my values."*

When asked against what value this was: *"Of hard work, because hard work is linked with honesty. You know you do an honest... you work hard, hard honest work to get to the next level. Yeah, I think hard work and honesty is linked."*

How it made him feel: *"Terrible. Terrible. I never repeated."*

Mandla lost touch with the core reason for participating in his sport. He values being at peace with himself and being happy. He did not live according to these values when he was going through a period of setbacks. The way he reacted to his circumstances led him to feel and behave in a manner that was not consistent with his value system. Instead of being happy and content, he was angry and frustrated, questioning why he would even want to be participating in his sport. He countered this by returning to what initially motivated him to participate and that is to spend time in the mountains and absorb and enjoy the environment.

He needed this alone time to reflect and reconnect with his values of enjoyment, self-challenge and being at peace with himself, regardless of the opinions of others. He differentiated between the effect that winning and losing have on a person by explaining that when a person loses and might even go through a series of losses, the person will have an opportunity to learn more about him/herself. If one compares this process with his life and the way he managed to work through his negative circumstances, it will entail an athlete to do a certain amount of qualitative reflection on his/her sport career and reasons for participation. This will allow an athlete to reconnect with the initial drive to participate and even compete. Mandla found the process of reflection and finding ways of reconnecting rather stimulating:

**Mandla:** *"I had some setbacks. Ja, I think just like being really frustrated and angry. I think I always had kind of values like "if you get knocked down, pick yourself up, no matter what." I think at times last year it was difficult and I found myself in a bit of a dark patch and not enjoying what I was doing, I wasn't enjoying my running and you ask yourself, like "why am I doing this?" Luckily I think I managed to snap out of it. The way I snapped out of it was to just actually spend time on my own and really think to myself what is important to me and why am I doing this. Really going back to the core of why I did the sport and it's because I love being out in the mountains and to kind of explore my own boundaries. And realizing that*

*it doesn't matter what people think, and everyone's gonna go through bad patches and looking back now, whenever you go through a bad patch, is when you actually develop and grow the most as a person. Like when you're winning and doing well. Then life is great but you don't actually learn a lot about yourself. But when you're really battling and in a dark moment, that's when you learn the most about yourself. I find it quite interesting to figure out ways to get yourself out of dark patches."*

Marie identified behaviour that was counterproductive to her values of being disciplined and focussed. It also infringed on her value of being a good role model. Drinking became a form of relaxation and she realised that it did not reflect her true character:

**Marie:** *"When I was young and stupid, I used to drink. And that was not like me. And after competitions we used to drink and go on and be crazy. Okay it was nice and fun because you've been so focused in competition and you just relax. And obviously there's other ways in which you can relax and still have a good time. But I think the drinking part was just really not me."*

#### **4.3.7 The importance of athletes being aware of their habits and values**

Naledi found that she developed her habits only after her value system was created. Her habits and values do not stand apart from each other in her life, rather she mentioned that her habits were formed within the context of her value system. She did not continuously assess if she was living according to the values that was instilled in her as a child, neither did she do regular assessments of her habits to ensure that she was still functioning within the frame of reference created by her value system and subsequent habits. The values that her parents taught her provided her with a feeling of safety in that it provided her with an identity that she would not deviate from. She referred to it as her DNA and realised that not everyone will have the same value mark-up/substance.

Naledi was of the opinion that security and love form the basis of a solid value system and that this has to be established if someone was not fortunate enough to grow up in a household where security and love were one of the basic foundations. She views a value system as an anchor that also guides behaviour. She is of the opinion that it is important that behaviour is consistent with what one believes in, if not, one's value system will make one aware that one behave in a manner that contrasts one's value system:

**Naledi:** *"I don't think it was necessarily a conscious part of my career. I think my value system was created as a young child growing up. That is where I learnt my values. And my habits came through that frame of reference. In my career it wasn't necessarily conscious where I would now and then take stock of if I am still within my value system, do I still follow*

*the correct habits. So I just think it was a forming process that gave me the anchors to build a successful career. And I don't think it was something that I regularly revisited to check if I still functioned according to these values. I just think it is entrenched in who I am. Things that I learnt from my parents as a youngster. It is my security in life. It is who I am and it hasn't changed since then. It is part of my DNA. And you don't go back now and then and recheck your DNA."*

*"I don't necessarily think it is the DNA of everyone."*

*"Not everybody is privileged enough to come from a home with security and love. So at some point you have to establish it."*

*"It's like with any goal... You revisit your plans and goals and see if it is intact with who you are. Otherwise you are not going to be able to function if it is in conflict with who you are... That is why people feel uncomfortable when they are in places they shouldn't be... So I think many times, your anchored value system is that trigger that tells you: 'what is wrong here?'"*

Similar to the view of Naledi, Charles also referred to the sense of safety and security that values, and in his opinion, habits too, provide an individual. The role of values and habits really comes to the fore when an athlete is alone at an event and under pressure. It is the values and habits that will provide the athlete with a sense of safety and comfort because of the routine nature of habits and a vast belief in certain values. Dealing with pressure in this way allows an athlete the opportunity to excel on competition day:

**Charles:** *"I think it is important because it gives you security. Because a lot of times you are alone at a competition. You don't always have other South Africans, your coach, your physiotherapist or whoever with you. So if you have habits or your value system, it gives you that comfort and security to be on your own and to process that enormous pressure so you can perform your best on the day of competition."*

Gert focussed on the role that values play in maintaining positive interpersonal relationships. People exhibit an enormous range of emotions in sport and values will assist a person in dealing with the various emotions and people. Knowing your values will assist in the process of striving for goals as it will help the person to interact with others, improve behaviour and generally help to live a better life when striving to attain set goals:

**Gert:** *"... you go to sport and you learn to deal with people... For me sport is one of the institutions where people communicate. People get pissed off. People rejoice with each other. They get pissed off with each other, they get pissed off together. I mean all of the emotions happen together, and it shapes up a lot of people on how they behave."*

*"So if an athlete, realise their values earlier, and what they want. I think values they link up with goals and what you want to do and how you want to do it and the people around you. I think it helps them live their life better or live better in terms of live their life towards their goals in sport, and how you going treat people and how you gonna behave."*

Dries was of the opinion that athletes lose valuable time in their careers by wondering about how they should behave in certain situations and this can cause them to lose 'everything', indicating that they might miss out on life changing opportunities because they are unsure about what they want to do and how they want to go about their lives. There is a conflict that stops people from acting in the way that they know would be beneficial for them. Dries pointed out that it is experience that provides the insight into resolving that specific conflict. Establishing a value system seems to be the starting point of resolving inner conflict and competing at an optimum level. He argued that before one can compete against others, one must first create order within:

**Dries:** *"Many players will lose time, would lose everything just because I think their value system is not there in place. Well at least in accordance with the sport at that moment you know. I don't know. Should I fight? Should I work hard? Should I... you know. All these things that we know. But life is strange you know. We all know what to do, we all know what should eventually happen. But we have conflict within ourselves that stops you. And sometimes to unlock that conflict, can either be external, someone can tell you and you could believe them, or through experience, you know you go over certain things in life and then you start realizing 'okay, I cannot go past this point unless I do ABC."*

*"... first and foremost you are competing against yourself before you're even comparing against someone else. First and foremost it's against you. You need to make sure that that is in order. It's not easy."*

Mandla contributed greatness in sport to achieving a sense of synchronisation between mind, body and values, regardless of talent. The elite athletes do not compromise on their values. He held the same view as Naledi in that values should be consistent in an athlete's life:

**Mandla:** *"I think if you look at the best athletes, they probably might not be as gifted as some of the other athletes that actually don't perform as well as them. But if you look at those athletes they are just really in tune with their body and mind and their values."*

*"I think like the psychological side to being a professional sportsman is huge... Ja I think the guys that achieve at that level definitely are really in tune with their values and stick to their values."*

Julia touched on the same interpersonal relationship link that Gert touched on. Though she linked habits with it more strongly, indicating that habits influences the way in which an individual acts and affects people. Values are more of an internal drive that formed her inner belief system which is similar to the role that Dries subscribed values to:

**Julia:** *"Your values shape you and your habits influence the people around you."*

#### 4.4 Summary

Chapter 4 provided the results obtained from the interviews conducted with seven elite athletes. From the athletes' responses and reflections on the habits in their lives we can ascertain that habits do play a role in their sporting careers and that they are quite aware of these habits. Although the athletes participate in sport codes that are uniquely different from each other, there does seem to be repetitive behaviour across the board that they choose to include in their arsenal of performance and training. This refers to their habits of visualisation, simplifying life and repeating their behaviour patterns of training sessions in competitive situations.

The elite athletes also seemed to be aware of the absence of habits in their everyday lives. This can either be a reflection of them not being mindful of their habits, thus being completely unaware that they in fact do engage in habits, or it can be reflective of them simply choosing to not engage in habitual behaviour. It can also indicate that their sporting lives have in fact become a lifestyle and that they do not distinguish among habits in these two contexts. It has in fact become one context for them. The fact that they are indicating an awareness of habits in their daily lives as well as in their sport careers are indicative of self reflection and an increased sense of controlling the behaviour that works for them. Though habits are seen as involuntary, automatic behaviour, these elite athletes presented an awareness of these habits and a willingness to purposefully include habits in their lives.

Athletes related to the concept of mindfulness from their own point of view given their experiences in their specific sport codes. Mention was made of differences between the use of mindfulness in team and individual sport codes and it was indicated that it is useful for both types of sport codes. Athletes were of the opinion that mindfulness should be central to any athlete's psychological toolkit and that it develops as a stronger skill the longer an athlete competes in his/her sport career.

The athletes indicated the importance of being mindful of behaviour that is counterproductive to reaching and achieving their goals. They used mindfulness to learn from their mistakes

and especially to avoid future mistakes or behaviour that will be detrimental to their performances.

It was agreed upon that mindfulness has a key role to play in performance as it assists an athlete to be aware of both positive and negative mental aspects. Having this awareness allows for an athlete to navigate away or towards certain behaviour and/or mental processes in order to become a holistically developed athlete.

It seems that all the elite athletes had a well developed sense of their values and the role it plays in their respective sport careers and personal lives. Their values shaped their approach to their sport careers and predominantly influenced the decisions they made regarding their behaviour on the sport scene.

Although they identified a variety of core values, it seems apparent that most of them value people in their lives, primarily their significant others, but also the impact their behaviour has on the community.

Hard work and remaining true to one's own beliefs were predominantly mentioned as important values. It is in compromising on these two values that most of the athletes felt they were not representing their value systems. Admitting to these counterproductive behaviour reflects insight and maturity and is in itself a starting point for future growth. The athletes all indicated awareness of their deviation from their core values and also showed personal growth by attending to these behaviour and altering their lives as to return to behaving and living according to their anchored value systems.

The concept of motivation was a trigger for a variety of topics for the elite athletes. Mention was made of people that initially motivated them to participate and this included coaches, parents and other athletes. It is interesting to note that all the elite athletes indicated a deeper understanding of factors needed to acquire excellence in sport. They hinted on the importance of intrinsic motivation and the need to improve on a personal level as an athlete. This was extended to their lives as role models and the importance of a role model in sport being a positive and consistent individual that upholds an image that the younger generation can aspire to.

All the athletes had the similar belief that success is predominantly a result of hard work and not talent alone. They were aware of the role of talent and that it is necessary for the attainment of success in their specific sport codes but they were also aware that talent is mostly a factor in attaining success in early years of sport. Work ethic becomes increasingly important when an athlete starts to compete on elite level. This can sometimes be the distinguishing factor and difference between winning and losing.

Most of these elite athletes were motivated and inspired by the performance of other athletes. Being exposed to the success of other athletes seems to be a definite and consistent initiator of motivation, that if internalised, can contribute to long-term sport careers.

The elite athletes believe that their values and habits play a defining role in their lives and that they also influence their teams and other people in their lives. The awareness of their habits and values is important to these elite athletes as it serves as a foundation that can eliminate or reduce anxiety and it creates a platform on which they can build success and assess behaviour against.



## CHAPTER 5

### Discussion: Phase 1 qualitative data

#### 5.1 Introduction

The aims of this study in Phase 1 were threefold. Firstly, it was to explore the psychological dynamics in the formation and maintenance of performance facilitating habits among athletes. Secondly, it aimed at identifying the effects of values on the formation and maintenance of these performance facilitating habits. Thirdly, this study attempted to determine the relationship between mindfulness and habits of athletes. These aims were met by conducting semi-structured interviews with elite athletes and exploring their relevant views and experiences. The aims of this study led to the core research question: How do habits, mindfulness and values relate to the success of highly effective athletes?

Chapter 5 discusses and synthesises the results of Chapter 4 and relates the results with relevant and existing literature. The discussion will centre around the three identified aims of the study and emerging themes within each aim will be discussed accordingly.

#### 5.2 Psychological dynamics in the formation and maintenance of performance facilitating habits

This section is organised according to themes and subthemes of psychological aspects relating to habits. Clarity is provided by contextualizing habits and exploring subthemes identified by the athletes. The section then continues to incorporate psychological dynamics that the athletes found to be relevant to their success and this is linked with their experiences and understanding of habits.

##### 5.2.1 Habits in context

###### 5.2.1.1 Sport specific

This section will include habit related themes identified by athletes that are specific to their sport experiences.

###### a. Visualisation

Visualisation is *"the internal representation that gives rise to the experience of perception in the absence of the appropriate sensory input"* (Wruga & Kosslyn, 2002, as cited in Moran, 2012, p. 168). According to Orlick (2008), it allows an athlete to work through and solve possible challenges mentally and therefore be in a better position to solve these same

challenges in real life. Murphy (2005) explained that sport psychologists have studied "imaginary practice" or "symbolic rehearsal" since the 1930's by prominent researchers such as Howard Perry and Ron Sackett.

Athletes identified visualisation as a core habit. They use visualisation in their pre-competition routines and incorporate it into training. They reported that it assists them in becoming accustomed to the competition environment and to overcome possible challenges much easier because they have pre-solved them during visualisation exercises. This seems to be a vital part of training and a behaviour that is also used repeatedly by other world class athletes (Kremer & Morgan, 2008; Murphy, 2005).

The use of visualisation is evident among the world's elite athletes. As cited in Kremer and Morgan (2008, p. 117), Roger Bannister is a good example as he recounted his mental preparation during the week leading up to him running the world's first sub-mile in 1954:

*"Each night in the week before the race there came a moment when I saw myself at the starting line. My whole body would grow nervous and tremble. I ran the race over in my mind. Then I would calm myself and sometimes get off to sleep."*

A three-time Olympian skier described his visualisation before an event as follows (Murphy, 2005, p. 140):

*"It's as if I carry around a set of tapes in my mind. I play them occasionally, rehearsing different race strategies. Usually I imagine the race going the way I want - I set my pace and stick to it. But I have 'problem' tapes I use as well - sometimes I imagine that a competitor has gone out very fast and I need to catch him. I use an image of me with a fishing pole, hooking him ahead of me and then reeling him in. I need to be flexible in races, able to adjust my strategy to whatever situation arises. Imagery helps me do that effectively."*

The use of visualisation by the elite athletes is consistent with the extent to which it is incorporated into training routines and repeated as part of the training repertoire of many top athletes (Moran, 2012). It is interesting to note that the elite athletes identified visualisation as a habit whereas visualisation, as per above literature, is usually referred to as a mental skill or technique that athletes employ to improve performance.

A habitual response/behaviour assumes that the response/behaviour happens automatically and is ingrained as part of an individual's character due to the consistent repetition of the response/behaviour (Duhigg, 2012). Redefining visualisation as a habit in the sport context can have an influence in the manner by which athletes develop this habit and might make it more reachable for the average athlete/child who thinks that visualisation is only part of the

mental preparation of elite athletes because as a habit, visualisation can be viewed as something that one can easily learn through mere simple repetition. Establishing a habit might sound easier to do than developing a new skill and thus become more easily attainable.

#### **b. Pre-performance routines/Superstition**

The elite athletes referred to routines that they engage in before competition. One of the athletes also mentioned superstition. It is important to note the differences and similarities between these two concepts in order to comprehend which one of these concepts the athletes actually referred to.

Pre-performance routines are defined by Moran, 1996, as cited in Cotterill (2010, p. 132) as *"a sequence of task-relevant thoughts and actions which an athlete engages in systematically prior to his or her performance of a specific sports skill."*

Superstitious behaviour has been defined as *"a behaviour which does not have a clear technical function in the execution of skill, yet which is believed to control luck and/or other external factors"* (Moran, 1996, as cited in Foster, Weigand, & Baines, 2006, p. 167).

Cohn (as cited in Foster et al., 2006, p. 167) continued to explain the similarities and differences between these two concepts:

*"Superstitions have similarities to pre-performance routines in that they involve formal, repetitive, and sequential behavior, but are different in respect of function. Essentially pre-performance routines differ in that they involve cognitive and behavioural elements that intentionally help regulate arousal and enhance concentration and thus induce optimal physiological and psychological states"* (Crews & Boutcher, 1986, as cited in Foster et al., 2006).

If one considers the references made to these two concepts from the athletes, it seems that they are referring to superstition and pre-performance routines. They found both concepts useful in their preparations for competition. Their experiences of these two concepts as assisting in their performances are supported by a study done by Damisch, Stoberock and Mussweiler (2010) whereby the researchers found that superstitions may sometimes be helpful to performers. It was explained that superstitions boost confidence levels and therefore improves performance. Schippers and Van Lange (2006), as cited in Moran (2012) found that elite athletes are more likely to engage in superstitious behaviour when games were perceived to be especially important. This supports the view of one of the elite athletes

in this study who indicated that his pre-performance routines or rather superstitious behaviour, given the aforementioned definitions, depend on the strength of his opponent.

Given the repetitive nature of superstitious behaviour and pre-performance routines, it clearly fits in the category of habits (Duhigg, 2012). A closer look at the reason for the engagement in this behaviour (i.e. building of confidence) makes it a rather attractive habit to engage in. Elite athletes seem to then build their confidence unknowingly by engaging in these behaviours on a consistent basis. Neither of the athletes could explain the reason for this engagement. Building confidence through habits in the sport context can be a time-efficient and personally meaningful development when working with athletes in preparation for events.

### **c. Tailoring training routines/Simulation**

Athletes indicated that they tend to repeat training routines during competition. Once they became aware of behaviour that produced effective results, they included it during competition. This habit of becoming aware of specific productive behaviour in training and repeating it during competition is a reverse strategy of simulation training. Simulation training is a concentration strategy that entails an athlete to train under competition conditions by recreating situations that may occur in competition, during training (Kremer & Moran, 2008; Orlick, 2008).

Simulation training builds an athlete's confidence, assists in overcoming distractions and adverse and unforeseen circumstances (Orlick, 2008). The athletes reported that repeating what works in training during competition assists them in feeling less anxious and less stressed. This habit of repetition provides a feeling of comfort which can be linked with the acquisition of confidence as noted in Orlick (2008). It is however interesting to note that the athletes did not refer to the concept of simulation which is the documented academic concept to describe the link of repeating training behaviour in competition (Orlick, 2008). Rather they focussed on describing how they would identify behaviour that assists them in training and establish that as a habit to be repeated also on the day of competition.

The elite athletes indicated a well developed sense of awareness of behaviour conducive to their success. They were mindful of their effective routines. They are experiencing success due to their engagement in these routines and therefore choose to be consistent in the execution of these routines. This is indicative of a heightened and focussed sense of awareness and thus provides them with the ability to consciously choose what they focus on (Kabat-Zinn, 2009; Silverton, 2012). This choosing to repeatedly engage in behaviour which they believe produce results is linked with the building of confidence as mentioned in the

previous section, which is another attractive factor for the inclusion of certain habits in an athlete's sport experience.

### **5.2.1.2 General**

#### **a. Simplification**

The habit of simplification is defined as *"the habit of breaking complex scenarios down to linear challenges that can easily be resolved. It can be seen as the habit of taking the easy route towards solving complex challenges. The purpose of this habit normally ties up with efficiency whereby an individual has developed the ability to easily find the simple way to resolve challenges / problems. The habit of simplification can develop in tandem with the habit of problem solving. When both these habits are well formed the individual might develop extremely strong behaviours towards effectively solving problems by applying extremely simple ways towards a solution"* (De Villiers, 2009, p. 24).

The inclination of athletes to try and live a life that seems uncomplicated and effortless adheres to this definition. In their everyday lives away from sport, the elite athletes tend to identify challenges, set goals and overcome these challenges. This might be evident of them transferring their emotional experiences and knowledge in the sport domain to their lives away from their sport.

Jennings (1993) advocated that simplicity is a key feature for success and that elite athletes, in their quest for success, can become too complex in the execution of their tasks. He proposed that athletes should rather engage in the repetition of tasks in order to master skills and thus keep their training and execution of technique simplistic. If athletes do become accustomed to simplifying their lives in sport and outside the sport domain, it is evident of them engaging in the habit of simplification as defined above. It is undetermined if the athletes in this study possessed this habit of simplification before they started their sport or developed it during their sport career. It can therefore not be noted as certain that they transferred this habit from the sport domain or vice versa.

#### **b. Habit of having no habits**

Although this was not a dominant theme among the elite athletes, it is an interesting perspective on habits and has merit to be discussed briefly. Two of the athletes indicated that they purposefully attempt to not engage in any habits. They prefer to consciously live their lives in a way that is free from being controlled by automatic behaviour. This can be indicative of their preferences for flexibility in their lives as a result of striving to avoid routine behaviour. It can also indicate an unawareness of their actual habits.

Purposefully engaging in non-habitual behaviour is an indication of mindfulness in that these athletes are consciously aware of how they interact with and in their environments. The benefit of being mindful about habits is that it allows for an individual to choose what to focus attention on instead of being on autopilot and engaging with the environment without an awareness of the detail in situations (Kabat-Zinn, 2009). Unawareness of habits can result in automatic behaviour that might also no longer be conducive to success or health (Silverton, 2012). It is for this reason that mindfulness of habits is important in order for an individual to alter or adapt to the changing details and nature of situations in an effective manner.

### **5.2.2 How habits play a role in athletes' experiences of sport**

It was found that the elite athletes valued the consistency of their habits. For behaviour to be classified as a habit, it has to be repeated consistently over time and without much conscious thought. The behaviour becomes a preferred way of behaving and/or dealing with situations (De Villiers, 2009). It therefore becomes a way of life once the athletes found a way of doing that assists them in being successful. They preferred to repeat these behaviours and incorporate it into their training and performance routines on a consistent basis and without much thought. This corresponds with the concept of habitus whereby the athletes start creating a new habitus of behaviour that is specific to the field of sport and more accurately sport code specific. The athlete is thereby exercising a choice and actively engaging in the formation of habits (Lea et al., 2015; Moran, 2011).

One of the athletes who implied that she never had any habits realised that this could have been a frustration for her coach who, due to her spontaneous nature, could never prepare for her emotional reactions or behaviour. She did not want to be predictable. It refers to co-orientation which concerns how an athlete and coach are congruent with each other in terms of their perception of each other in the quality of their relationship, their intention to stay committed to the relationship, as well as the manner in which they interact with each other (Jowett 2005, 2006, 2009, as cited in Rhind, Jowett, & Yang, 2012).

### **5.2.3 Parental influence**

Parents have a vast influence on the development of their children in sport. This includes and is not limited to encouraging them to participate in sport, transporting them to events and teaching them values connected to the sport experience (Dixon, Warner, & Bruening, 2008). This is consistent with the description that the athletes gave of their parents' participation in their sport career. It was of a strong supportive nature and consistent over time. One could argue that the parents developed their own supporting habits.

Dixon et al. (2008) found that women athletes reported that their parents' influences during their childhood remained with them throughout their sport careers. These female athletes also reported that their parents were supportive and not overbearing. This is consistent with the experiences of the elite athletes. Their parents were involved in their own sport whilst also supporting the sporting endeavours of their children without being overly involved or demanding of their success.

The elite athletes, and especially the female athletes, did not mention that sport was seen as a gender specific activity in their families. Rather it might have been normalised for them through the participation or physical activity levels of their parents. Sport was seen as something normal for a girl to do which is consistent with literature findings that suggest that young girls whose parents normalised the participation in sport viewed sport as an appropriate activity for them to participate in and continue to do so well into their adult years (Dixon et al., 2008).

The significance of the supportive nature of sport parents that the athletes referred to is consistent with the results of a study conducted by Downward, Hallmann and Pawlowski (2014). Their findings on the assessment of parental influence on the sports participation of children *"suggest that it is primarily the attitudes of parents and their support more than their actual participation that encourages child activity."* The elite athletes indicated that they were not forced to participate in sport. Their parents gave them the decision and the autonomy on their sport participation which the athletes managed successfully from a young age. This is consistent with Ornelas, Perreira and Ayala (2007) who found that athletes who were given age appropriate autonomy on their sport participation did better in regulating their own physical activity than those adolescents whose participation in sport were monitored and managed more closely by their parents. It is argued that good sport parents respect and support the choices their children make in sport, as long as it is fair and according to the rules (Petersen, 2010). The supporting habits of the elite athletes' parents were consistent over time and never fluctuated. Their parents also presented with a habit of not putting pressure on their children to perform and instilled in their children the importance of developing a habit of performing to satisfy an internal motivation and not be motivated by external rewards.

None of the athletes indicated that their parents rewarded them with all sorts of rewards when they performed well. The athletes found their rewards in the level of their performance and subsequent results. They were thus motivated internally. They enjoyed their sport and this was motivation enough to participate and train. Intrinsic motivation is a positive predictor of enjoyment and together with low pressure exerted by parents on their children's

achievements, create an environment where the athletes can enjoy their sport and also be motivated to excel for reasons other than external rewards offered by parents (Amado, Sanches-Oliva, Gonzalez-Ponce, Pulido-Gonzalez, & Sanchez-Miguel, 2015).

It seems that the elite athletes were conditioned from a young age to find their own meaning in their sport participation and in effect have been guided to develop the habit of setting own personal goals and being intrinsically motivated. Their approach to the outcome of their performances was shaped by the mindful approach of their parents to not create the habitual cycle of winning that is rewarded with extrinsic factors but to rather have their children themselves decide on the meaning of success.

#### **5.2.4 Talent and effort**

Athletes were of the opinion that they were not the most talented athletes in their sport. They did not believe that they were very talented. Yet, they did believe that they worked harder than the talented athletes in their respective sport codes. One athlete mentioned that hard work is a talent in itself. Carol Dweck did a considerable amount of work on the concept of talent and effort in the achievement of success. In Dweck (2006), the account is given of a number of top athletes across different sport codes where they noted the amount of effort it took to reach the top level and that it was not determined by their talent.

One of these examples is Judit Polgar who is the best woman player in the history of chess. She and her two sisters were taught how to play chess by their father. They were home schooled and specialised in honing their chess skills (Forbes, 1992). Susan, the eldest sister remarked: *"My father believes that innate talent is nothing, that (success) is 99 percent hard work. I agree with him. Judit was a slow starter, but very hard working"* (Dweck, 2006, p. 80).

Another example of an ultra successful athlete who placed hard work above any other mental or physical trait is Michael Jordan. His coach at the University of North Carolina was especially impressed with Jordan's willingness to work harder than any of the other athletes. Other athletes who come to mind in terms of their extraordinary work ethic are Tiger Woods, Babe Ruth, Muhammad Ali and the legendary Wilma Rudolph who won three gold medals at the 1960 Olympics and hailed as the fastest woman on earth at the time (Dweck, 2006). These are just a small sample of the hard working elite athletes that recognised that they might not be the most talented, but stood out to be some of the most hard working and successful athletes of all time. They, just like the elite athletes in this study, understood that ability and talent were not fixed and that they could grow and develop their skills and abilities (Visser, 2006). Hard work seems to be a habit that has been incorporated by all these elite athletes. They chose to prepare consistently and with effort regardless of the level of



achievement they reached. Working hard is a behaviour that became ingrained in their sport experiences.

### **5.2.5 Prerequisites for high level performance: Task orientation, work and passion**

A common denominator among the elite athletes was their focus on the execution of their skills. Their goals existed of the continuous improvement of skill, technique and times, regardless of the level of competition or changing environment. They were thus focussed on the execution and improvement of the task at hand as well as performing to the best of their ability, implying a task orientated approach in their sport (Van Yperen & Duda, 1999).

The opposite of task orientation is ego-orientation and entails an athlete being more focussed on the acquisition of superiority over other athletes (Williams, 1994). In a study by Duda and White (1992), it was found that athletes with a high task orientation viewed hard work and practice as a means to success in their sport of skiing. This is consistent with the views of the elite athletes in this study since hard work and training were seen as prerequisites for the attainment of success. The athletes did not necessarily believe that they were/are the most talented in their sport. They did believe however that they have the capacity to work very hard on improving their skills and techniques, more so than their talented opponents.

The elite athletes contributed their determination to work hard to the passion they felt for their sport. Passion is defined "*as a strong inclination toward a self-defining activity that people like (or even love), find important, and in which they invest time and energy on a regular basis*" (Vallerand, 2012, p. 1; Vallerand & Houliort, 2003, p. 175). This definition requires a person to like, value, spend time and energy on a specific activity. Being passionate about an activity will require a person to value the activity and devote considerable time and energy engaging in the specific activity. It is also very likely that the person will be involved with the said activity for a long period of time which is consistent with the career span of the passionate elite athletes in this current study.

The elite athletes indicated that they experienced a certain passion and hunger for their sport and that it sustained them throughout their sport careers. This is consistent with Vallerand and Houliort (2003) who believed that passion is a key aspect of any person who becomes an expert in a specific activity, because it is this passion that motivates a person to persist with participation even during tough times. This links with the athletes' view that their hunger and passion for their sport is a core underlying value to their lasting sport participation.

## **5.3 The relationship between mindfulness and habits of elite athletes**

### **5.3.1 Athletes' awareness of the psychological component of their sport**

All the elite athletes indicated a heightened awareness of the psychological component of their specific sport. More so, they were also very aware of the specific psychological skills that they felt contributed to their success. This ability of the athletes to be mindful of their psychological traits and to ensure that they include these in their training and participation is vital for their success. In fact, they contributed a lot of their success to the mental component of their performance.

Van Yperen (2009) and MacNamara, Button and Collins (2010) argued that not enough emphasis is placed on athletes' psychological qualities as a predictor of success in sport. When MacNamara et al. (2010) interviewed elite athletes they (hockey, judo, curling, javelin, rowing, sculling athletes) indicated that emphasis should shift away from the predominantly physical predictors of excellence in sport and focus more on psychological attributes as key factors in developing excellence in sport. This study also found that Psychological Characteristics of Developing Excellence (PCDE) should also include mental skills and emotional attributes. Some of the identified PCDE's among these elite athletes included commitment, competitiveness, game awareness, self-belief and coping under pressure. This is consistent with the habits and values identified by the elite athletes. The awareness of the importance and role of these habits and values were evident among all the elite athletes. This is important to note because although these concepts are known as traits and mental skills, the athletes also referred to them as habits and values which points to a deep seated value system comprising of these concepts as well as consistent repetitive behavioural schemes developed by the elite athletes to ensure that these concepts form part of their training and performance preparations on a consistent basis.

In addition to these habits and values, Van Yperen (2009) found that distinguishing factors among successful and unsuccessful soccer players included the need for social support when faced with adversity and problem-focused behaviour as a coping skill. This is supported by the comments of the elite athletes who noted their awareness of difficult times in their sport careers and their habits in working through and overcoming adversity. The identification of psychological characteristics required for sporting excellence is supported by Fourie and Potgieter (2001) who, in their study of mental toughness, found traits such as psychological hardiness, coping skills, competitiveness and maintaining confidence to also be important. Gould, Dieffenbach and Moffett (2002) identified coping with and controlling

anxiety, competitiveness, a hard work ethic, resilience and a positive attitude as some of the required psychological characteristics of elite athletes. Again these concepts were identified by the elite athletes as some of their habits and values that contribute to their success.

Personal hardiness is another characteristic that has been identified as an integral part of the mindset of an athlete (Sheard & Golby, 2010). Hardiness involves an athlete's commitment to be an active participant in life, deriving pleasure from engaging in challenges and believing in own control of life events. It is indicative that international athletes from varying sport codes possess a higher level of hardiness in comparison with athletes from lower competitive levels (Sheard & Golby, 2010). This indicates that elite athletes have the ability to engage their emotions and thoughts as is needed to enhance their experience of commitment, challenge and control in their sport domains.

Commitment and self-control were also identified by Orlick (1999) as determinants of excellence. This is in accordance with the views and experiences of the elite athletes. They indicated how they choose to live their lives away from the sport context in a manner consistent with their value systems within the sport context. The elite athletes indicated a thorough awareness of their emotional states in different circumstances and were able to link it with appropriate behaviour to suite their value systems. Again, commitment was a key habit and value driven component to their sport experience.

Personal hardiness is similar to Dweck's "growth mindset". This mindset entails people believing in their abilities and talents, believing that ability and talent are not fixed and that these can be developed through passion, education and perseverance (Visser, 2006). Learning is seen as a lifelong process and people in this mindset are committed to challenge themselves and learn from their experiences (Dweck, 2006). Dweck (2006) referred to the famous Olympic Champion, Bruce Jenner, as someone with a growth mindset. Jenner acknowledged that his learning disability assisted him in learning to persevere and work hard in order to achieve success. This understanding of the importance of effort contributed to his achievement of excellence in the sport domain. Applying Dweck's (2006) growth mindset to sport will mean that an athlete will continuously strive to improve, knowing that ability and talent can be developed and are not fixed entities.

Athletes with a growth mindset will learn from their mistakes, be challenged by it and do what is necessary to improve their skills. Jenner's experience also illustrated the successful application of mental skills in everyday life to that of the sport domain and that this transference of skill is indeed possible. The elite athletes, in their quest to dedicate themselves to the value of mastery orientation, are exhibiting the growth mindset of Dweck

(2006). They continuously direct their behavioural tendencies towards an improvement of themselves on and off the sports field. These elite athletes have developed the habit of behaving in accordance with the growth mindset. Their behaviour is continuously directed towards improvement and a belief in their potential to work on mistakes and grow consistently as athletes. This is supported by their value systems which incorporates values such as effort and appreciating hard work.

Studies such as Van Yperen (2009), Gould et al. (2002) and Fourie and Potgieter (2001), indicated that elite athletes seem to have overlapping psychological characteristics regardless of the sport code that they are involved in. This was evident in the sample of elite athletes as can be seen by the corresponding list of values identified by the athletes. It is possible that elite athletes might also share certain habits that are evident in their daily lives and transferred to their sport domains. This notion was supported by the elite athletes identifying key habits that are similar to their experiences of their sport and their performances.

### **5.3.2 Understanding and applying mindfulness in sport**

Mindfulness plays a considerable role in the elite athletes' control of their emotional states. They indicated that awareness of their emotions is crucial to them controlling their emotions during competitions. This is quite an important benefit of the function of mindfulness since an awareness of what the mind is directing attention to can assist the individual to, through awareness of the accompanying emotion, give attention to the emotion and regulate thinking and behaviour to enhance experience (Kabat-Zinn, 2011). Consistent with this was the athletes' use of mindfully regulating their physical health and preparation according to their awareness of their physical states. Being mindful of their psychological characteristics allows an athlete to regulate his/her body by being in tune with its functioning as was pointed out by one of the athletes.

The essence of mindfulness practice is *"knowing what you are doing while you are doing it"* (Kabat-Zinn, 2011, p. 28). It is this paying of attention to experiences from moment to moment that the elite athletes have successfully incorporated into their sport experiences. They used mindfulness to steer their thoughts and emotions to be of a productive nature and to guide the intensity of physical participation. This is in contrast with the automatic nature of habits and it indicates their conscious choice in behaviour and regulation of the behaviour that they actively chose to incorporate as habits. These habits have a clear function of improving performance. The athletes indicated that mindfulness assisted them in regulating

their focus and this is consistent with Silverton (2012) who posited that mindfulness allows individuals to choose where to focus attention.

The athletes were also very aware of behaviour that was counterproductive to optimal performance. Their awareness of what/who prevented their optimal behaviour/performance led them to initiate change in order for them to move forward and reach the performance levels they believed they could. This relates to the growth mindset of Carol Dweck who advocated that people with a growth mindset will learn from their experiences and challenge themselves (Dweck, 2006). By doing this, change can happen and thus improvement. This relates to the process of habit formation and habit change and the elite athletes found successful ways of incorporating the active change of behaviour against the backdrop of their value systems as advocated by the Disconnected Values Model (Anshel, 2013).

The experiences of the elite athletes are indicating a possible link between mindfulness, habits, habit-change, values and the growth mindset. They know that their performances are not fixed, that they can improve, they challenge themselves by trying to find ways of improvement and they do this by being mindful of their bodies' needs, emotional needs and adjusting themselves accordingly. By doing this they are incorporating a growth mindset, mindfulness and self-control to improve their sport experiences. These are all concepts identified to improve quality of experiences and hence performance (Dweck, 2006; Kabat-Zinn, 2011; Orlick, 1999; Visser, 2006).

### **5.3.3 Role of mindfulness in sport**

Mindfulness is seen as a vital element in a long-term sport career. The reason for this is that mindfulness assists the athlete in staying motivated (Langley, 2011). This is possible because awareness of the meaning of participation provides the athlete with motivation to continue sport participation.

The elite athletes drew attention to the idea that practicing mindfulness can provide an athlete with an edge over his/her opponent who is not mindful when competing. By being mindful an athlete can be in tune with his/her body and the consequences to how the body is used during competition (Langley, 2011). This awareness creates an opportunity for the athlete to correct mistakes or improve techniques or strategy as the competition continues. This would not be possible should the athlete be out of tune with his/her body and not realise the reasons for resulting performances.

There are three layers of experiencing when an individual enters a state of mindfulness. At the core of these layers is the direct experience. It is in the direct experience where an individual receives direct sensations from the physical body and emotions. It is at this level

that the mind builds stories and labels experiences and if the individual is not mindful, the mind can influence the direct experience in such a way that the mind wanders off or become stagnant in the current experience (Silverton, 2012). As can be imagined in the sport context this can have hazardous consequences if an athlete does not alter behaviour, movement or emotion based on the direct experience in a meaningful way, moment to moment. If the mind simply continues to react in a habitual way, the athlete does not react in a manner that is required from the direct experience (Silverton, 2012).

By being mindful, the athlete can, by being in tune with emotion and state of mind and body, direct focus and eliminate distractions at an appropriate moment within the competitive state (Langley, 2011). The elite athletes found this to be of significant value in their sport experiences. They have trained their bodies to engage in specific performance enhancing habits and at the same time have a conscious mind, aware of behaviour and surroundings and not a mind limited by habitual thinking.

According to Silverton (2012), the other two levels entail an individual's thoughts about the direct experience and the interpretation thereof. It is thus vital for an athlete to be mindful at the core level of direct experience in order for the athlete to guide his/her thoughts and subsequent interpretation of the experience in a mindful and pro-active manner. This seems to be a skill that the elite athletes have mastered. Their level of awareness is vital for personal feedback, recognition of their emotional and physical status as well as their heightened sense of awareness during competition, which they believe is a point of advantage over their opponents.

#### **5.3.4 Mindfulness in everyday life**

The elite athletes recognised the importance of mindfulness in their lives away from the sport context. They felt that having a constant awareness of their goals and subsequent behaviour is essential for them to guide their choices and behaviour accordingly. It thus allows for them to avoid counterproductive behaviour. Langley (2011) posited that having one's attention in the present moment provides the opportunity for an individual to have access to "a range of mindful choices" and thus make productive decisions. Silverton (2012) pointed out that one of the purposes of mindfulness is to learn to respond to what one finds in life in a meaningful manner. It assists an individual to make informed decisions based on the ability to see a situation more clearly through the use of mindfulness.

The elite athletes felt that whatever they did outside the sport context directly influenced their sport career. It therefore is important for them to be consistent in their behaviour throughout the different contexts of their lives. This is consistent with results of a study conducted by

Roberts and Danoff-Burg (2010) who found that increased levels of mindfulness related to increased physical activity, less stress and better health. Once the athlete is consistent in behaviour (albeit habits) and level of mindfulness in life, this will automatically link with his/her experiences in the world of sport. Being mindful assists them to reflect upon their lives and attitudes and to assess if it is congruent with their values which is in accordance with the functionality of the Disconnected Values Model (Anshel, 2013). Kabat-Zinn (2011) explained that if mindfulness is practised regularly, it will tend to flow into other areas of an individual's life.

Being mindful plays a vital role in providing the athletes with a broader perspective because they are in the habit of being mindful and taking notice of their surroundings and opportunities. This is consistent with Langley (2011) who pointed out that everyday mindfulness allows an individual to deal with difficulties in a more meaningful way by detaching from the experience and through observation obtain a new perspective on the situation before engaging. In so doing the athlete creates a moment to pause and reflect before reacting in a purposeful manner which is contradictory to the nature of habits. The perspective gained from mindful living allows for an individual to see the 'bigger picture' of experiences by recognising pleasure, difficulties, what is right and what is wrong, resulting in a more balanced outlook on life and situations (Silverton, 2012).

An individual who is aware of how his/her body feels and their accompanying mood and state of mind will increase his/her own knowledge of his/her body and mind and thus strengthen that particular relationship (Langley, 2011; Silverton 2012). The elite athletes found this to be a critical part of a long-term sport career.

## **5.4 The effect of values on the formation and maintenance of performance facilitating habits**

### **5.4.1 The role of values in sport**

The role of values has not been receiving the attention in sport psychology as it should have. Its role has been undervalued in sport psychology (Lee, Whitehead, Ntoumanis, & Hatzigeorgiadis, 2008). This study was a valuable exercise to engage with elite athletes on the topic of values and their understanding of its relevance to their sport careers.

Sukys and Jansonienė (2012) found that athletes who participated on international level, scored high on values relating to competency. This entails the athlete being more focussed on becoming a better athlete, being in control of goal setting and using personal skills effectively. This is also evident among the elite athletes in this study who all valued their

personal improvements above the acquisition of material goods or external praise and rewards. This value system of mastery orientation was developed by the typical supporting habits of their parents in early years of competition when their parents did not habituate the giving of material rewards, but rather emulated the importance of skill mastering and realisation of potential on a consistent basis.

In their study, Sukys and Jansonienė (2012) noted that athletes of all levels in sport did not distinguish between the importance of competence values and moral values. The elite athletes did not distinguish between them either and found both to be equally important and necessary in their sport experiences.

There are multiple roles that values play. Values serve a motivational function and this motivation is what directs action and determines the intensity of actions (Swartz, 1994, as cited in Stupuris, Sukys, & Tilindienė, 2013). The athletes recounted how their values have influenced the moral manner in which they participated. They have chosen not to cheat, to treat their opponents with respect, not wilfully harm their opponents and in effect developed habits of competing fairly and with endurance when situations were difficult. This is also consistent with the view of Kavussanu (2008), which stated that an athlete's behaviour in the sport context reflects an athlete's character and that an athlete's behaviour can in return have positive or negative influences on opponents. It is thus the pro-social behaviour of athletes that are relevant (Stupuris et al., 2013).

All the elite athletes who were interviewed recognised pro-social behaviour by indicating that they would want to win in a fair and just manner, not hurting their opponents deliberately. Their values play a crucial role in how they approach their opponents and various situations within their sport. These elite athletes consciously base their behaviour on their value systems and tend to repeat their chosen behaviour in situations, ensuring they are known as ethical participants with good sportsmanship attributes and character due to their consistency of behaviour in situations. Good habits are therefore formed by constantly engaging in a predictive manner, according to their values, within their sport context.

#### **5.4.2 Compromising values**

Although the athletes generally tended to demonstrate pro-social and favourable values, some were also cognisant of the moments in which they did not live up to their values or when they behaved in a way that contradicted their values. Kretchmar, 1994, as cited in DeSensi (2014, p. 60) explained moral sensitivity as *"when we can identify moral dilemmas and actually exhibit a concern about them."* He went on to describe moral callousness as involving *"less care, concern, and moral sensitivity."* The elite athletes who acknowledged



that their behaviour has not always reflected their value system also indicated moral sensitivity in that they could identify the dilemma they found themselves in when they behaved in a way contradictory to their values.

Once they became aware that their behaviour was inconsistent with their values, they altered their behaviour to be representative of their value system. If it was behaviour that violated the rules of a sport, there was sensitivity towards the moral dilemma created and behaviour was adjusted in order not to repeat the same value-violation. They therefore made a conscious decision to not make a habit of certain behaviour due to it being contradictory to their value system. This is representative of stage four of Anshel's Disconnected Values Model (Anshel, 2010a). It requires the athlete to reflect on his/her actual behaviour and how it correlates with his/her values. If the behaviour is in contrast with what the athlete values in life and sport, a disconnect exists between actual behaviour and valued behaviour. It is then when the athlete makes a decision to either continue with the behaviour that is creating a disconnect or to change the behaviour to be reflective of his/her value system. The elite athletes who were aware of counterproductive behaviour and habits to their value system successfully changed and adapted to behaviour that was more productive and representative of what they believed and found important in life.

#### **5.4.3 Identifying values**

Gutierrez, 1995, as cited in Delgado and Gomez (2011, p. 580-581) identified two types of values that an athlete can acquire through participation in sport. He differentiated between the two types and suggested values that are seen as the most favourable to attain:

*“Social values: Everyone’s participation, respect to each others, cooperation, social relationships, friendship, being from a group, competitiveness, teamwork, expression of feelings, social responsibility, cohabitation, fight for equality, fellowship, justice, concern for each others, group cohesion.*

*Personal values: Ability (physical and mental), creativity, fun, personal challenge, self-discipline, self-knowledge, maintaining or improving health, achievement (success-win), rewards, adventure and risk, sportsmanship and fair play (honesty), sacrifice’s spirit, perseverance, self control, recognition and respect (social image), leisure participation, humility, obedience, fairness, self-realization, self-expression.”*

Some of the values have either been directly or indirectly identified by the elite athletes as values that they strive to uphold and have developed through their years of participation: social relationships, social responsibility (by being good role models), concern for others, creativity, ability, fun, personal challenge, self-discipline, self-knowledge, maintaining or

improving health, adventure, sportsmanship and fair play, perseverance, self-control, fairness, self-realisation and self-expression. These values have guided them in developing habits that contributed to them incorporating these values in their lives. Being aware of these values assisted them in directing behaviour to be consistent with these values.

It is important to note that Gutierrez, 1995, as cited in Delgado and Gomez (2011), distinguished between social and personal values that he understood an athlete to "achieve through participation in sport." The values identified by the elite athletes are those that they felt are part of their character and not necessarily required through their sport participation. Their values (not already mentioned above) included: commitment, hard work, vision, passion, staying grounded, sincerity, trustworthiness, balance in life, contentment with oneself, gratitude, authentic living and embracement of change. Delgado and Gomez (2011) indicated that values shape principles of behaviour and thus guide a person in his/her choice of behavioural actions. The values identified by the athletes do just this, they guide the athletes in their conduct on and off the sport field in the way that they engage with people, their performances and themselves.

#### **5.4.4 Awareness of values**

Anshel's (2010a) model draws attention to the importance of mindfulness in that a key element to the model lies in creating awareness in the athlete of his/her values and the correlation between everyday behavioural patterns and the upholding of personal values.

One athlete explained that a firm value base is important especially as performance level increases. This is due to the increase in exposure to ways of winning which might not be in the best interest of the sport or the individual. If an athlete is mindful of his/her values, it is easier for the athlete to choose behaviour and ways of responding to demanding situations easier and in a more compatible manner with an already solid value base that is congruent with the athlete's view of the world and him/herself. Anshel (2007a) explained that behaviour is motivated by our values, which we need to be aware of so we can direct our lives according to these values and hold ourselves responsible to live a life consistent with these values. This process will be impossible if an individual is not aware of existing values, let alone the core values he/she wishes to live according to.

The Disconnected Values Model relies on the individual's awareness of core personal values and becoming aware of how the manner in which he/she lives relates with these core values (Anshel, 2010a). This is consistent with the views and experiences of the elite athletes. Their awareness of their values determines the manner in which they participate in their sport and how they relate to their competitors. It guides their habits such as commitment to training

and constant striving for improvement whilst functioning within the rules of the sport and their own personal beliefs about the ethics and moral standings of participation. It also guides their personal lives and their striving towards balance and consistency in the way they function in sport and the context away from sport.

Orlick (1998) stated that the time spent away from the performance zone will directly impact the quality and level of performance. He also indicated that performance can also influence the other parts of one's life. The elite athletes indicated that they strive to create balance in their lives in order for them to shift with ease between the different parts of their lives (sport and non-sport). Being aware of the different parts of their lives is crucial in order for them to manage their behavioural tendencies appropriately.

## 5.5 Summary

Chapter 5 discussed the results of Chapter 4 and related the themes, as they emerged in the study, to the existing body of knowledge. Athletes indicated the importance of habits in their sport careers and identified visualisation, simulation training and pre-performance routines as crucial habits in their respective sports. The identification of the same important concepts for performance, regardless of the sport code is consistent with the views of Van Yperen (2009), Gould et al. (2002) and Fourie and Potgieter (2001) who stated that elite athletes seem to have similar psychological traits regardless of the sport code that they are involved in. Interesting to note however, is that the elite athletes referred to these psychological traits as habits which is a novel perspective that can be influential in the mental and psychical preparations of future elite athletes, since habits and traits are distinct in their nature and acquisition.

Mindfulness was identified as a key element in the maintenance of a successful long-term sport career. This cannot be linked with existing knowledge as the link between mindfulness and long-term sport careers has not been researched before. The athletes recognised the value of mindfulness in assisting them to be aware of their physical preparation and health as well as their emotional reactions to events and during competition. This correlates with the work done by Kabat-Zinn (2011), Kabat-Zinn (2009), Silverton (2012), as well as Langley (2011). Athletes linked mindfulness and visualisation with the understanding that the two concepts are interconnected and that mindfulness might be aided by the practice of visualisation.

The influence of visualisation on the mind state of athletes have been identified by Cooper and Goodenough (2007), Lazarus (2006), Noble and Watkins (2003) and Orlick (2008). The

elite athletes did however make the proactive link between visualisation and mindfulness which could not be found in the available field of knowledge

Elite athletes indicated the importance of behavioural consistency and that one should live according to one's value system and that a disconnect between values and behaviour causes discomfort. This is directly in line with Anshel's Disconnected Values Model (Anshel, 2010a). The tendency for elite athletes to have altered their behaviour to be in sync with their value systems corresponds with Anshel (2005), Anshel (2007a), as well as Anshel (2010a), in that the individual is likely to change behaviour to resemble the his/her core values and to hold him/herself accountable to those values.

The elite athletes indicated a clear understanding of the interplay between their habits, mindfulness and values. Through their years of experience in their respective sport codes they came to realise the importance of these concepts and that they needed to achieve a balance between their behaviour, emotional states and what they valued in life. They indicated that through awareness and knowledge of their values, they were able to direct their behaviour and habits to be compatible with their value systems. Mindfulness served the purpose of sensing when their behaviour was not consistent with what they valued and their perspective on life in general. Through this awareness they were able to effectively alter habits and behaviour that were not conducive to living according to what they believed to be important standards of moral behaviour. This is indicative of them reflecting on their experiences of the world and specifically their sport environments.

It is this understanding that can possibly pave the way for the long-term development of junior sportsmen and sportswomen. The elite athletes have indicated the importance of developing the three concepts of habits, mindfulness and values in accordance with each other and to not focus on just one of the concepts as research studies and sport psychology programmes have tended to do thus far.

If one is to learn one lesson from these elite athletes it will be that to develop to the best of one's ability as a sportsperson, it is vital to develop holistically by combining the acquisition of crucial and specific habits, mindfulness levels and values. This requires an athlete to actively engage in setting a moral standard by identifying core values and to learn how to direct behaviour and develop habits that can be enhanced and supported by the identified values and vice versa. This area of development cannot be accomplished successfully without the athlete having and/or creating a level of mindfulness whereby the athlete is fully aware of his/her values and the interplay between his/her values and habits.

Just as the various physical and technical skills development of an athlete do not take place in isolation from one another, neither should the concepts of habits, mindfulness and values. Preparing athletes for long-term sport careers and assisting them in reaching their full potential require that habits, mindfulness and values find their rightful intertwined place in the development of a well rounded athlete.

## CHAPTER 6

### Results: Phase 2 qualitative data

The results obtained from the data in Phase 1 were used to formulate questions by which to ascertain the prevalence of the themes with a bigger group of athletes. These athletes were selected to represent three different levels of sport participation namely: national-, provincial- and club level. For athletes to be classified as national athletes they needed to have represented South Africa internationally. Athletes on provincial level have represented their provinces at least once and athletes on club level are playing local leagues or purely at their club and have never represented their province or country.

Nine questions were formulated based on the elite athletes' experiences of habits in their sport careers as well as their lives away from the sport context. The responses of 82 athletes have been collated to identify key themes, habits and ideas and will be explored under each question. Statements from athletes who managed to explain a concept or their experiences clearly are quoted to provide relevance and insight to how these athletes view and experience the concept or theme in question. For practical reasons not all 82 responses to each question is provided, but merely those that are clear, concise and most relevant.

#### 6.1 Which behaviour do you generally tend to repeat? How does this impact your life?

This question pertains to the athletes' general experience of habits. It was not aimed directly at their experience of it in their sport but rather asked to ascertain their experience of habits in general and how they feel it influences their lives. The answers to this question are divided according to sport code in order to clarify the context and create an understanding of the sport context in which the participating athletes of this study function.

##### 6.1.1 Hockey

###### a. Social media

Eight of the 18 male hockey players indicated that their use of social media is a habit. All of them indicated that this habit of using their phone to check social media was a negative habit due to it being a time waster and thus affecting their lives in a negative manner. Athlete 18 summed it up very clearly:

**Athlete 18:** *"Checking social media. Takes time away from other constructive things I could be doing."*

This was echoed by the comments of Athletes 12, 14 and 15 who indicated that social media seems to be a time waster. It was also noted that it negatively impacts sleeping patterns and that no real benefit is gained from spending so much time on social media:

**Athlete 12:** *"Scanning through social media. It wastes a lot of my planning time."*

**Athlete 14:** *"Looking at my phone, sometimes makes it harder to sleep."*

**Athlete 15:** *"Checking social media. No real benefit gained and lots of time wasted. Same as watching a lot of TV to unwind."*

Within the women hockey group it is interesting to note that only two athletes indicated their use of social media as a habit without indicating it as negative in their lives as can be derived from the comment made by Athlete 26. She sees it as a source of useful information:

**Athlete 26:** *"Read social media first thing in the morning when I wake up. Impacts my life by giving me a heads up about what's happening in the world."*

Her positive use of social media links with Athlete 1's positive view on his use of social media:

**Athlete 1:** *"I also read the news on my phone every night before I go to sleep. I like to go to bed knowing what has happened in the world that day."*

## **b. Visualisation**

Although not a general behavioural tendency among the hockey group, the habit of visualisation was touched upon by two athletes when answering this question. Athlete 6 indicated that he has a habit pertaining to his game preparation. He has a habit of visualising. He related this habit consciously to his daily life away from hockey by noting that this habit assists him to deal with other people because seeing matters from someone else's viewpoint helps him to relate and avoid conflict:

**Athlete 6:** *"The main behaviour I tend to repeat is my preparation before games, specifically the way I warm up and mentally get ready for the game. Picturing myself in situation and what I would do before the game. The impact that has on my life is that I can put myself in other peoples shoes and see how they would react to different situations and thus avoid unnecessary conflict of interest."*

Athlete 10 also touched on the concept of visualisation by mentioning that he tends to replay events in his mind. He would replay incidences for the purpose of learning from the experience and to ascertain if any of the events could be beneficial for him:

**Athlete 10:** *"Tend to repeat - trying to understand, process and conceptualize events that took place and see how I can benefit from it."*

The referral to visualisation is noteworthy because it was indicated as a dominant habit by the elite athletes during phase one of this study.

### **c. Relaxation**

Three athletes indicated the use of habits for the purpose of relaxation. They identified watching TV, listening to music and reading at night as behavioural activities they engage in consistently to help them relax. Athlete 7's response provides a clear indication:

**Athlete 7:** *"Listening to music. It calms me down and allows me to relax."*

### **d. Procrastination**

The women hockey players identified marked different habits from those of the male hockey players. Procrastination is a central theme that emerged in many of the replies as is evident from the following texts:

**Athlete 23:** *"I tend to procrastinate when it comes to academics. It has a big impact on my life, as it puts lots of stress and pressure on me when I do procrastinate."*

**Athlete 29:** *"Procrastination - I become less efficient as it takes me longer to do activities. Also decreases my time I have to do other things."*

**Athlete 36:** *"Procrastination - adds stress."*

**Athlete 37:** *"I tend to procrastinate often because I always feel too lazy or tired. It creates stress in my life when I'm always late, or I have to rush my assignments to complete on time, etc."*

**Athlete 42:** *"I procrastinate, I tend to leave everything for last minute."*

Athletes 23, 36 and 37 realised that their habit of procrastination has a negative impact on their lives as it creates stress. It is a habit that is seen as negative and counterproductive to their functioning. Athlete 29 indicated that her habit of procrastination limits the time she has for activities in her life.

### **e. Negative thinking**

Cited alongside procrastination and more prevalent is negative thinking. Aside from identifying it directly, it also occurs in the form of over-thinking and analysing. Athlete 19 has



a positive connotation to this habit of thinking and analysing since she uses it to improve her life and find solutions to problems she encounters:

**Athlete 19:** *"Constant thinking and analyzing. Constant thinking and analyzing allows for me to better the situation and make constant improvements. Search for solutions and ways around problems."*

The use of constant thinking is also identified as a positive habit by Athletes 32 and 33. Athlete 32 indicated that it makes her life easier and Athlete 33 identified positive thinking as a source of motivation:

**Athlete 33:** *"Always thinking positively - the best out of a situation. Builds me up to continue working hard and motivates me in life."*

Quite a few of the athletes indicated that negative thinking and over-thinking tended to be a negative habit in their lives. Athletes 36 and 41 noted that their negative and over-thinking affect them in the performance zone of their lives. Athlete 38's negative thinking has an impact on how people behave around her. Athlete 39 recognised the limitation that over-thinking places on her life and also indicated that the positive to it entails that it provides her with the clarity needed to improve whatever is determined by her thinking:

**Athlete 36:** *"I over-think everything and worry about what people think which influences my performance especially on the hockey field."*

**Athlete 39:** *"Over-thinking - It tends to slow down things in general, disturbing a 'natural flow', but as well helps to identify whatever needs to be improved."*

**Athlete 41:** *"Negative thinking. It impacts my life as I don't push myself to my full potential."*

**Athlete 38:** *"I tend to see the negative in something first before the positive. My family hesitates to do some things because of my first reaction."*

Athlete 35 echoed the comment made by Athlete 38 by indicating that she is also inclined to first think negatively. She then finds it difficult to change her thoughts into positive thoughts:

**Athlete 35:** *"First negative thought and I struggle to redeem my positive thoughts in match situations."*

### 6.1.2 Chess

Interestingly, the chess players identified a variety of different habits, but mostly the habits were included in their lives for the same purpose which is to combat stress and to relax.

### **a. Relaxation**

Reading, listening to music, daydreaming, watching TV and staying in touch with friends served the purpose of alleviating stress. This is evident from the following selection of responses:

**Athlete 49:** *"Reading in bed before going to sleep - helps me de-stress and unwind."*

**Athlete 50:** *"Listening to music. Put me at ease."*

Athlete 53 pointed out that these habitual behaviour was emotionally stimulating to him. He feels comforted by engaging in certain habits because it creates a feeling of emotional satisfaction for him:

**Athlete 53:** *"Switching the television on, finding out what friends are doing, what's for supper. It impacts my life as an emotional self stimulating factor contributing to inner satisfaction and comfort. It's an emotional impact and not a physical impact on my life."*

### **b. Procrastination**

Among the chess group, procrastination received mainly attention from the women players. The link with stress and pressure is evident. Irritation is mentioned as a secondary symptom experienced as result of procrastination:

**Athlete 56:** *"Procrastination, when it comes to the deadline I'm often under a lot of pressure."*

**Athlete 57:** *"I tend to procrastinate with almost everything I do. When it comes down to the last minute, I'd do everything while feeling stressed and irritable because of the pressure."*

**Athlete 58:** *"The habits that I constantly repeat is generally during the week. Procrastination being the biggest one."*

Athlete 43 acknowledged just as Athlete 29, that procrastination influences his level of effectiveness which naturally will impact his performance zone. He viewed procrastination as a problem:

**Athlete 43:** *"I think I have a problem procrastinating. I don't feel that I am being effective as I should be."*

### c. Negative thinking

Negative thinking was mentioned by one athlete who indicated that it plays a definite role in his life. He pointed out that the effect of his negative thinking is negative behaviour. His habitual thinking therefore influences his behaviour:

**Athlete 52:** *"Negative thought would definitely be number one. It has a huge impact in my life in terms of it creates more negative behaviour."*

#### 6.1.3 Soccer

##### a. Procrastination

Among the soccer players, procrastination surfaced again with three athletes indicating it being very prevalent in their lives. Instead of just seeing the negative result of procrastinating, Athlete 66 indicated the benefit of procrastination in her own life by realising that she performs well when she is under pressure. She notes however, that by procrastinating she sometimes run out of time to do things:

**Athlete 66:** *"Procrastination. I work better when I'm under pressure although I sometimes end up not doing other things because of time."*

##### b. Negative thinking

Athlete 59 identified negative thinking as one of his habits and linked it with other aspects of his life and how it impacts his experience of life:

**Athlete 59:** *"Constant negative thinking. Hinders me from realizing all the positive, and good things in life/happening around me."*

#### 6.1.4 Basketball

##### a. Procrastination

In basketball another athlete mentioned procrastination as a habit that influences his life negatively. He realised that it adds pressure in his life and prevents him from reaching his full potential:

**Athlete 79:** *"When it comes to my studies at varsity I do tend to procrastinate with regards to completing assignments and studying for examinations. This usually tends to put pressure on me to finish things last minute and sometimes never reach my full potential."*

## **b. Negative thinking**

Athlete 80 mentioned negative thinking and the role it plays in his life and how he combats it by re-focusing and leaning on his faith to assist him in becoming more positive:

**Athlete 80:** *"Negative thinking - It impacts me in that I constantly have to re-focus myself and be positive. I then seek strength and guidance through faith."*

### **6.1.5 Golf**

#### **a. Procrastination**

The golf players were no different from the other codes and also identified procrastination and negative thinking as habits they found to be active in their lives. Athlete 81 discussed the role of procrastination in his life and how it prevents him from finishing tasks.

**Athlete 81:** *"Procrastination is certainly one - you never get things done and always having things overhanging."*

#### **b. Negative thinking**

Athlete 82 identified negative thinking and the result of it in his life, indicating that it becomes a constant entity by developing into a pattern in his life by making him doubt himself:

**Athlete 82:** *"Constant negative thinking - it creates a pattern of self doubt."*

### **6.1.6 Summary**

Procrastination is the dominant habit identified throughout the group of respondents. It does not seem to be sport code specific.

9/14 athletes identifying procrastination as a habit were team sport athletes whereby the remaining five were from individual codes of which 4/5 were chess players.

9/14 were women athletes. From the nine women athletes, three were chess players, one was a soccer player and the remaining five were hockey players.

The following table indicates the habits most frequently identified by the athletes in answering question one. Prevalence of the top habits identified among the different levels of participation, across sporting codes, is indicated in this table. Miscellaneous includes the responses that either had no relevance to the question or included a once-off mentioned theme:

Table 6.1 Overview of habits identified

Level of participation	Question answered	Procrastination	Negative thinking	Habits used to induce relaxation	Miscellaneous
National	37	6	4	7	20
Provincial	25	3	4	2	16
Club	19	5	3	0	11
<b>Total</b>	<b>81</b>	<b>14</b>	<b>11</b>	<b>9</b>	<b>47</b>

Negative thinking was the second most prevalent habit identified by the athletes. It was identified by eleven athletes. Only three of these athletes participate in individual codes which means the remaining eight athletes are team athletes. Of these eight athletes, seven are women.

Thirdly, it was noted that nine athletes used various habits for the purpose of relaxation. 6/9 of these athletes were from individual sporting codes of which five were men. The remaining three athletes from the team codes were men.

The habit of using social media was mostly mentioned by the male hockey players and it was viewed mainly as a negative habit.

## **6.2 More specifically, do you have any habits that influence your sport either positively or negatively? What are these habits and how do they influence your sport positively or negatively?**

This question received a variety of different responses. This can be expected as this was a very open ended question that relied on the athletes' awareness of their habits and how it impacts their sport. Though the responses were quite varied, there were specific habits that were mentioned by more than just one athlete. The positive habits are visualisation, hard work and healthy eating. The negative habit that was identified is negative thinking.

### **a. Hard work**

The habit of working hard and putting more effort into training than fellow athletes were the dominant habit identified by nine athletes from different codes. The athletes were aware that working hard improves their skills and gives them the edge ahead of other athletes:

**Athlete 79:** *"Positively, I am a very hard worker and I am able to spend hours, consistently working on my craft which has helped me improve over the years."*

**Athlete 62:** *"I have the habit of going the extra mile..."*

**Athlete 11:** *"Always arrive on time and put in more hours of practice than most and this is in a positive manner."*

## **b. Negative thinking**

Negative thinking received a mention from seven of the athletes. This seems to be a habit that athletes find quite counterproductive to their performance and ability to keep focussed when competing. It can create anxiety:

**Athlete 34:** *"Negative thinking before a match makes me anxious and affects my focus."*

**Athlete 35:** *"Negatively - to start a game by making a mistake early on. Doubt and negative thinking became a habit."*

Athlete 41 pointed out that her negative thinking places a limitation on her performance and prevents her from developing into a better athlete:

**Athlete 41:** *"Negative thinking. I don't push myself to explore new heights of my potential. I think that I won't be able to complete the steps needed to be taken in order to reach full potential."*

Athlete 81 shared the thoughts of Athlete 41. He is very aware that his negative thinking stopped him from becoming the athlete he could have been:

**Athlete 81:** *"Negative thinking - always seeing what can go wrong and this lack of backing yourself meant I never got where I should have."*

## **c. Visualisation**

Visualisation was also noted as an important habit to have as an athlete. The athletes indicated that visualisation is mainly used for the improvement of their skills and to assist in mental game preparation to reduce the feeling of pressure:

**Athlete 6:** *"The visualisation before games helps me positively. They prepare me for specific high pressure situations in the game which allows me to better control or handle the situation."*

**Athlete 77:** *"I do a lot of visualisation before performing skills, imagining how they should look and feel which has a positive effect."*

#### d. Healthy eating

Another habit identified by the athletes is that of eating healthy. This does not just include eating the correct foods but also being particular about the most effective time of eating:

**Athlete 5:** *"Making sure I eat at the right time and what I eat influence me positively."*

Athlete 20 noted the impact of healthy eating as an athlete:

**Athlete 20:** *"Healthy eating = good physique and strong immune system - fit and strong."*

#### 6.2.1 Summary

Four main habits were identified by athletes in this question. The distribution among the different levels of participation relates as follows. Miscellaneous includes the responses that either had no relevance to the question or included a once-off mentioned theme:

Table 6.2 Overview of sport specific habits

Level of participation	Question answered	Hard work	Negative thinking	Visualisation	Healthy eating	Miscellaneous
National	36	2	1	3	5	25
Provincial	24	3	4	1	0	16
Club	16	4	2	1	0	9
<b>Total</b>	<b>76</b>	<b>9</b>	<b>7</b>	<b>5</b>	<b>5</b>	<b>50</b>

It must be noted that there would probably be a difference in the habits and their prevalence identified in questions one and two. This can be due to the athletes thinking more generally about habits in question one and tailoring their answers to be more sport specific in question two as was requested by the question.

#### 6.3 How do you think the habit of "focusing" impact your sport performance?

This question was included in the questionnaire because it was a habit that was present among the elite athletes. Introducing this concept for athletes to ponder on and formulate their ideas and experiences about, created an opportunity for the athletes to become more aware of this concept and hopefully reflect on its presence in their sport experiences.

All the athletes commented positively on the impact of focus in an athlete's performance. It seems to be a mental skill that the athletes were well aware of and they also seemed to have understood the value of it in their performances.

Eleven athletes specifically identified 'distraction control' quite prominently with the concept of focusing. The following two athletes explained it well:

**Athlete 1:** *"I think it has a big impact. There are a lot of distractions and you can easily get caught up with the opposition, umpire, weather, crowd, family etc. Unless you are focused on what you can control and what you are currently busy with you can't apply yourself fully."*

**Athlete 68:** *"When you are focused, you avoid getting distractions that will affect your performance."*

Fourteen athletes made a connection with being focused and mindfulness, indicating that when they are focused they are also more present in the moment. They referred to this awareness as being in the zone, having their mindset ready and being present and aware during competition time. A reference to the state of mind and role that focusing plays in it was prominent:

**Athlete 20:** *"Focusing is extremely important in hockey games/training - block out all distractions and be 'all-present' in the moment."*

**Athlete 34:** *"Focusing enables me to be present and aware during a match and I am able to then grab advantageous opportunities when they present themselves on the field."*

**Athlete 42:** *"It helps with being present, mentally. Knowing what's going on during the match and being able to play to your full potential."*

**Athlete 11:** *"Huge impact. I find when my mind wanders I tend to perform worse."*

Athletes also indicated that focusing improves their concentration and it assists them in channelling their energy to the task at hand:

**Athlete 53:** *"To be focused helps to block out negative influential elements and to concentrate on the rational matters."*

**Athlete 65:** *"It helps me keep my concentration on the field and forget about the things that happen off the field."*

**Athlete 69:** *"It allows me to concentrate only on my sport and block out other aspects of life..."*



**Athlete 44:** *"It is a key point in staying focused especially in a mind game like chess but also in other sports not to have a lapse in concentration."*

Four athletes noted that they experienced a link between focusing and pressure in their sports. There was a realisation that too much focus can lead to feeling pressured during competitive times:

**Athlete 8:** *"Sometimes if 'too' focused it can create undue self-pressure."*

**Athlete 13:** *"If I focus too hard, I put too much pressure on myself and don't play well. I play better when I'm relaxed and not over thinking it."*

Athlete 26 remarked that it is important to know how to use focusing techniques correctly in order for it to be valuable. She pointed out that one can over-focus and that it is not ideal:

**Athlete 26:** *"I think it will have a positive impact if the technique is learnt correctly. Over focusing can be detrimental to my performance."*

In contrast with the above, Athlete 36 pointed out that focusing can in fact also help to deal with pressure situations. This can be achieved by directing thoughts and attention to basic aspects in one's sport:

**Athlete 36:** *"Focusing on the basics help a lot under stressful situations."*

### **6.3.1 Summary**

The role that focusing plays in an athlete's sport experience was valued by the athletes. They indicated what they understood about the concept of focusing and that it means to channel one's thoughts to the task at hand. They referred to this as directing their mindsets, thoughts and experiencing a feeling of being in the zone. The athletes also mentioned the benefits of being focused in their sport. Emphasis was put on distraction control and that they found the technique of focusing to be very useful in dealing with external demands. Another benefit raised is that focusing assisted them in concentration. The athletes also understood that focusing as a technique, should be applied correctly in order to limit feeling pressure to perform when 'over-focusing'.

## **6.4 Do you tend to stick to what worked in the past or do you constantly try to find new ways of staying ahead of your competitors? How do you try to stay ahead of the rest?**

This question yielded interesting and surprising results. The question has four distinct components to it. The first three distinguish between sticking to what worked in the past,

constantly trying to find new ways of staying ahead and thirdly a mixture of the two. Fourthly, it asks the athlete how he/she, through experience of the first three, tries to maintain an edge over the competition. Athletes chose to give attention to the first three components of this question.

Athlete 59's answer encapsulates the responses from the other club athletes:

**Athlete 59:** *"What worked in the past (if it's not broken, why fix it?)."*

Three athletes indicated that they tend to stick with what worked in the past until it does not work anymore. Then only will they start to look for other new ways of training or techniques that can be used for improvement. The following excerpts explain this approach:

**Athlete 54:** *"Stick with what works until it no longer works then find ways to try catch up!!!"*

**Athlete 79:** *"I tend to stick to what has worked in the past until I get to a point where I feel I am no longer improving to my satisfaction. I then try and find new ways to improve. I do a lot of research, and follow many elite athletes in this regards."*

Athletes also tended to incorporate both approaches in their sport careers. The tendency is to keep what is working and continue to build on it. The athletes also indicated that they will change the aspect that is not working and keep the ones that have yielded results in the past. Whilst doing this, they are consistently on the lookout for new ideas to improve and are open to expanding their training and performance repertoires:

**Athlete 1:** *"Stick to what I know on competition days but at training I like to try and push myself. In between seasons I like to set goals for the coming season and plan what I am going to do."*

**Athlete 12:** *"A mixture of both. I try to adapt and develop simple concepts or techniques to better my performance or understanding."*

**Athlete 22:** *"Yes and no. I do like to stick to what works for me. But I do believe in trying new things, after all change is what keeps you ahead. I always try to find out what is upcoming/new and give it a go."*

**Athlete 82:** *"Both. In sport being repetitive is good, however one should always look for new methods to improve."*

**Athlete 76:** *"Both. It's important to stick to the plan and not go so creative that you mess around with what really works. It's important to find new and interesting ways to train and improve and reduce boredom."*

Constantly trying to find new ways of staying ahead of competitors and improving was also indicated by the athletes. For these athletes it is important to keep improving and to be on the lookout for ways to improve and enhance their performances:

**Athlete 11:** *"I tend to find new training techniques and execute more advanced techniques in order to give me an edge."*

**Athlete 14:** *"I try and find new ways of staying ahead - by doing things differently and unexpected."*

**Athlete 74:** *"To always try to something different every time to keep them guessing."*

**Athlete 52:** *"I try different things each time I compete, I don't want to be predictable and thus easy to play against. I would play different openings, play different styles against different players to try get them out of their comfort zone."*

**Athlete 77:** *"I am constantly trying to improve myself and often watch others who are doing well and try their techniques out to see if they will work for me too."*

#### 6.4.1 Summary

This table summarises the responses of the athletes who answered the question. Miscellaneous includes the responses that either had no relevance to the question or included a once-off mentioned theme:

Table 6.3 Overview of athletes' views on being innovative

Level of participation	Question answered	Sticking to what works	Constantly trying to find new ways to improve	Combination of sticking to what works and trying new ways	Miscellaneous
National	38	9	13	11	5
Provincial	25	6	10	6	3
Club	19	19	0	0	0
<b>Total</b>	<b>82</b>	<b>34</b>	<b>23</b>	<b>17</b>	<b>8</b>

## **6.5 Do you have certain behaviour in your training sessions that you try to repeat during competition time? What are these habits and why do you try to make them part of training and competition?**

Significantly, of the 82 athletes, 76 indicated that they repeat training behaviour during competition times. Only eight athletes indicated that they do not have behaviour in training that they tend to repeat in competition situations.

Quite a number of athletes indicated that they repeat everything they do in training during competition. This serves to include the execution of technique, skill, mental state, warm-up exercises and manner of communication with other team members. Some of the more specific behaviour identified by the athletes include the following:

### **a. Effort executed in training sessions**

There were 23 athletes who indicated that they train at the same pace and intensity as in a match situation. The level of intensity has been identified as one in which the athletes push themselves beyond their comfort zones. They understood the implication of maintaining the intensity levels throughout and that it will ensure a better performance:

**Athlete 79:** *"One behaviour I try to emulate in both training and competition is the level of intensity at which I do things/perform. I do this because I believe that you play the way you practice. So if am not intense at training, I can't expect to be intense in competition."*

**Athlete 10:** *"Keep reminding myself to push and train at a high intensity."*

**Athlete 19:** *"Giving 100% during both training and competition is important. Allows your body to feel how much more it can give during competition because it's been through it in training. Practice makes perfect."*

**Athlete 3:** *"I try train at match pace so it is familiar come game time."*

**Athlete 23:** *"I firmly believe in how you practice/train is how you play. I try to focus more when I'm tired in trainings, so in the matches when it occurs I am still alert and technically sound. Just everything from pre-scanning and receive and to the execution of a specific skill I try to train well and repeatedly so when it comes to matches I don't have to think about it."*

### **b. Warm-up routines**

The repetition of warming up routines was mentioned by seventeen of the athletes. This will exclude the chess players since they do not engage in physical warm-up sessions due to the nature of their sport. Athletes 1, 29 and 78 illustrated their use of the same warm-up

routines, with Athletes 29 and 78 specifying the benefit of keeping their warming-up similar to that of training. The routine it provides ensures a relaxed state and less anxiety. The warming-up is part of readying the mind and body for competition:

**Athlete 1:** *"I also like to start preparing myself for training during the warm up similarly to how I would in a game."*

**Athletes 29:** *"Warm up without shin pads on. Routine helps my mind relax and then it is easier to focus."*

**Athlete 78:** *"The way I warm up in training is the way I warm up when I compete. It is important to do the same things you do in training when you compete because you are already physically, mentally and emotionally prepared for what you have to do. The only thing you have to adjust to is the new equipment - but that doesn't take long when your body and mind already know what to do. It also prevents injury."*

### **c. Mental skills training**

There were 15 athletes who focused on the importance of their mental skills training. They understood that the consistency of the same mental skills usage during training and competition assists them to perform better:

**Athlete 82:** *"Visualisation. In golf it doesn't help to merely hit lots of balls in practice. It helps to visualise a particular hole or shot and then try and play the required shot. During the round it also helps to then go back to how you played the shot on the range."*

**Athlete 51:** *"I try to stay very focused while training. My training needs to be as close to the competition scenario as possible in order for there to be a carry-over from training to competition."*

**Athlete 12:** *"I try to clear my mind and put myself in emotional states that I might experience in the game. I believe that if I feel good, I'll play better."*

### **d. Communication**

It was noted that six athletes competing in team sport (hockey and soccer) indicated that they tend to maintain the same level and type of communication with their team members during training and matches:

**Athlete 38:** *"I try to encourage and motivate. Training habits become competition habits."*

**Athlete 41:** *"Talking and communicating to my team mates. I try to make them a part of training and competition as it motivates the team."*

**Athlete 63:** *"Communicating with my teammates. Whatever you do at training, it automatically happens during a competition. I believe its key to any team sport, the more you communicate, the better."*

**Athlete 16:** *"Always stay positive and try and encourage my team mates to keep pushing their own limits so when game time comes we all know what we are capable of."*

#### e. Absence of habits

On the other end of the spectrum, eight athletes indicated that they do not have certain behaviour or habits they tend to repeat in training and competition:

**Athlete 77:** *"My training techniques are very different from competition. In training I will push myself harder physically and in competition I focus more on mental preparation and visualisation."*

**Athlete 43:** *"I separate the two. Training sessions I work intensely and during tournament games I try to apply my training."*

#### 6.5.1 Summary

The following table summarises the behaviour that athletes identified as behaviour they consistently repeat in training and competition. Miscellaneous includes the responses that either had no relevance to the question or included a once-off mentioned theme.

Table 6.4 Overview of behaviour being repeated in training and competition

Level of participation	Question answered	Effort executed in training sessions	Warm-up routines	Mental skills training	Communication	Absence of habits	Miscellaneous
National	38	13	7	9	0	5	9
Provincial	25	6	9	4	0	0	6
Club	19	4	1	3	6	3	2
<b>Total</b>	<b>82</b>	<b>23</b>	<b>17</b>	<b>16</b>	<b>6</b>	<b>8</b>	<b>17</b>

## **6.6 Leading up to competition, do you find yourself repeating behaviour or thoughts that you engaged in before the start of other competitions? What are they and why do you think you tend to repeat them?**

These questions pertain to specific habits that athletes consistently engage in because they feel/think that it assists them in their performance. Not only did the athletes identify their habits, but they also indicated the reasons for these habits. The habits were mainly identified to be various mental preparation techniques with the frequent mention of physical habits such as warming-up routines and eating habits as identified and discussed in the previous question.

### **a. Visualisation**

The habit mostly mentioned was visualisation. There were 17 athletes of which 11 national and six provincial, identified this habit to be consistent in their behaviour. Interestingly none of the club athletes referred to this mental preparation technique. The athletes noted that visualisation improves their confidence, concentration, helps them to feel comfortable in new environments, assists in entering a mindset conducive to performing well and it also enables a state of mindfulness by being in the moment:

**Athlete 1:** *"Before competitions I visualise myself scoring penalty corners, a important area of my game..."*

**Athlete 3:** *"Visualisation and instant removal of negative thoughts. They enable me to play out a potential positive scene. Clearing my headspace ensures I'm concentrating on the 'now'."*

**Athlete 15:** *"I like visualising the venue/environment so it's not a shock of new when arriving to play the competition."*

**Athlete 29:** *"I like to visualise doing certain skills well which positively influences my emotions. It is also good for my confidence."*

**Athlete 31:** *"Visualisation - helps me focus for the particular game/practice at hand and gets me into the right mindset and headspace beforehand."*

**Athlete 51:** *"I try to visualise myself at the board before the game begins. This means that before I play the game I have already played it out in my head."*

## **b. Negative emotional states**

Athletes indicated that they also experience consistent negative emotions before a competition. Since these emotions are consistent they related to it as a habitual way of how they feel before competition. Athlete 79 indicated how he deals with these emotions by listening to music. There were 13 athletes who indicated that they need to combat nervousness, anxiety and stress before a competition:

**Athlete 35:** *"Nervous/nerves - same feeling repeats itself at every match."*

**Athlete 42:** *"I get very nervous... and often doubt playing. I do this because I'm scared to play."*

**Athlete 78:** *"Yes I do. I tend to go through a stage where training goes very badly and close to competition season I start training well again. I think that it's because my mind tells me that I'm scared and nervous, so my body feels like it can't do anything."*

**Athlete 74:** *"In the beginning I tend to get nervous closer to competition times. I think it's because I'm anxious."*

**Athlete 79:** *"One particular behaviour I repeat leading up to competition is listening to music, especially right before the game on game day. I tend to repeat this because I believe the process helps to calm my nerves before competition. As I can get very nervous."*

## **c. Positive thinking**

The importance of creating and/or maintaining positive thoughts before competition was highlighted by thirteen athletes. They consistently engage in this habit of controlling the nature of their thoughts. These athletes ensure that their thoughts are managed positively before competition:

**Athlete36:** *"I remind myself of what I've achieved and the highlights of my career. It calms down the insecurities and helps me believe in myself again."*

**Athlete 80:** *"Before the game I have thoughts of success and achieving. I repeat this because I've had dreams of greatness throughout my life and always live for those great moments. It keeps me in a positive frame of mind."*

**Athlete 67:** *"Staying positive, this is what I always do before each competition so that I can focus more, and bring the best out of me."*

**Athlete 25:** *"Remembering past experiences that brought me joy, happiness and success, how they occurred and what I can do to make them happen again, or improve on them."*



#### d. Positive self-talk

Linking with creating positive thoughts is the concept of positive self-talk. This is something that five athletes identified as something they tend to repeat before competition. It assists them in regulating a calm mindset, being focused during the game as well as building and maintaining self-confidence.

**Athlete 12:** *"I do a lot of self-talk to calm me down."*

**Athlete 40:** *"I stay positive before competitions and I always give myself pep talks to get my head in the game."*

**Athlete 42:** *"I tell myself to calm down, I get very nervous."*

**Athlete 57:** *"I'd find myself pep-talking a lot to get the confidence to where it needs to be."*

**Athlete 71:** *"Yes. I often tell myself 'this is mine' against each difficult competitor."*

#### 6.6.1 Summary

The following table summarises the thoughts and behaviour identified by the athletes as thoughts and behaviour that they regularly engage in before competition. Miscellaneous includes the responses that either had no relevance to the question or included a once-off mentioned theme.

Table 6.5 Overview of habits engaged in before competition

Level of participation	Question answered	Visualisation	Negative emotional states	Positive thinking	Positive self-talk	Miscellaneous
National	38	11	6	6	2	13
Provincial	25	6	5	5	1	8
Club	19	0	2	2	2	13
<b>Total</b>	<b>82</b>	<b>17</b>	<b>13</b>	<b>13</b>	<b>5</b>	<b>34</b>

## 6.7 Have people ever told you that you have a certain habit? Why did they say so and did you agree? What was this habit(s)?

There were 44 athletes who indicated that other people have created awareness about their habits by pointing it out to them. They agreed with what was identified as their habits. These people mainly represented coaches, who referred to certain technical habits of athletes they tend to engage in during competitions, and family members who made them aware of personal habits such as biting of nails when nervous. No specific habit trends could be identified due to the nature of the habits being widely varied. Some of the athletes mentioned specific habits that occurs in sport for example:

**Athlete 37:** *"I tend to have a habit of being very hard on myself during a game which almost always affects my game negatively because I'm over thinking and not allowing myself to enjoy the game. I also tend to find a reason for everything if someone tries to tell me that I didn't do something properly."*

Whilst other athletes identified more general habits occurring in their everyday lives away from the sport context:

**Athlete 72:** *"Yes and I do agree, I have a habit of wanting to watch something/movie on the laptop while I'm eating."*

The importance of this question's answers lies in the athletes' awareness of their habits and the fact that other people tend to notice them and then choose to create awareness for the athlete by sharing this awareness with the athlete. By doing so it provides an opportunity for the athlete to reflect on his/her repetitive behaviour and possibly think about engaging in the said behaviour next time round.

There were 35 athletes who indicated that no one has ever spoken to them about their habits or pointed out to them that they tend to repeat or engage in certain repetitive behaviour.

Three athletes abstained from answering the question.

### 6.7.1 Summary

This table summarises the responses to question seven:

Table 6.6 Overview of creation of habit awareness

Level of participation	Question answered	Made aware of habits	Not been made aware of habits
National	38	22	16
Provincial	22	13	9
Club	19	9	10
<b>Total</b>	<b>79</b>	<b>44</b>	<b>35</b>

## 6.8 How has participating in sport changed any of your good/bad habits you had before you became an athlete?

Answering this question required the athletes to think about their behaviour prior to their sport careers and to then reflect on the behaviour they currently tend to engage in and to distinguish when and how their behaviour changed or stayed the same.

Three key habits were identified by the athletes which they indicated were developed through their participation in sport. These habits include the habit of a maintaining a healthy lifestyle, the habit of being disciplined and the habit of working hard.

### a. Maintaining a healthy lifestyle

Living a healthy lifestyle was noted by 13 athletes. This entails eating healthy, exercising and living a balanced lifestyle. Having a habit of maintaining a healthy lifestyle assists them in performing better and it is something they chose to include in their way of living:

**Athlete 14:** *"It has made my good habits in health better and only to improve on the bad ones."*

**Athlete 15:** *"I now have a habit of trying to stay fit so I can always participate in sports."*

**Athlete 42:** *"Helped me with time management and balancing everything. I often ate anything and everything, but sport changed that. I now eat better and less."*

**Athlete 66:** *"I stopped eating unhealthy foods so that I can keep in shape."*

## **b. Discipline**

The habit of discipline was identified by 11 athletes. For them sport has been a vehicle through which they learned to be disciplined and they mentioned how important it has been in their lives:

**Athlete 12:** *"It has definitely made me more responsible and disciplined."*

**Athlete 51:** *"It has allowed me to become more disciplined and helped me appreciate the value of hard work."*

## **c. Working hard**

Working hard was identified as a habit by six athletes. Sport has been complimented by Athlete 22 to have assisted her in becoming a harder worker. Athlete 52 indicated that he understood the implication of being a hard worker because it allows him to achieve what he sets out to do and he is managing to also be a hard worker in other areas of his life. The habit he learned in sport thus carried over to being a habit in his life away from the sport context:

**Athlete 22:** *"I think sport has definitely helped me be more hard working and dedicated."*

**Athlete 52:** *"My habits were quite small or I had different things to attend to, and I did not focus or take my sport seriously then. One good habit I learnt from my sport was the habit to know and use hard work, or if you work hard at something anything is possible. By me working hard I improve certain areas in my life."*

**Athlete 79:** *"Participating in sport has helped me gain good habits such as commitment, hard work and leadership skills and team work since I've become an athlete."*

## **d. Avoidance of negative habits**

Participating in sport also assists the athletes in avoiding negative habits. This is either done by establishing better and more positive habits, limiting the bad habits or by avoiding the bad habits. Seventeen athletes noted that they attempt to limit or eliminate their negative habits.

**Athlete 6:** *"I use to be very undisciplined, not focused, it helped me focus my sport and life so I could better use my time."*

**Athlete 4:** *"I'm more committed to my good habits and cut down on the bad."*

**Athlete 20:** *"Limiting bad habits - lack of sleep/alcohol etc."*

**Athlete 24:** *"I think it has made me more conscious of my diet and what I need to eat in order to perform well. Before partaking in sports I didn't eat very well at all!"*

**Athlete 46:** *"I tended to make rash decisions. Now I want to think carefully before making decisions."*

**Athlete 58:** *"I had, and still kind of have, a habit of procrastinating, but it has lessened, because I have learned the hard way how that affects my mental thinking. If I'm not properly prepared, my game is poor. Preparation a while before the time is what I am currently doing now."*

**Athlete 75:** *"I've been in sport my whole life, but it has taught me how to recognize bad habits quickly and getting rid or replacing them."*

### 6.8.1 Summary

This table summarises the responses from the athletes for question eight. It indicates the habits that they feel they learned to incorporate into their lives through their participation in sport. Miscellaneous includes the responses that either had no relevance to the question or included a once-off mentioned theme:

Table 6.7 Overview of habits that changed through involvement in sport

Level of participation	Question answered	Maintaining healthy lifestyle	Discipline	Working hard	Avoidance of negative habits	Miscellaneous
National	36	4	5	5	10	12
Provincial	23	5	4	1	5	8
Club	18	4	2	0	2	10
<b>Total</b>	<b>77</b>	<b>13</b>	<b>11</b>	<b>6</b>	<b>17</b>	<b>30</b>

### 6.9 Which habits do you think athletes in your sport code should have and why are they necessary?

This question was divided according to the different sport codes due to the nature of the question being sport specific. It is indicated where there was a marked difference between the habits identified by athletes from different levels of participation. If there was no big margin of difference, the focus remained on the habit that was identified.

## 6.9.1 Hockey

### a. Health habits

The hockey players identified the habit of living a healthy, balanced life most prominently. There were 13 athletes who viewed this as important of which only three were male:

**Athlete 14:** *"Habits of eating healthy."*

**Athlete 23:** *"Athletes in my sport should have good eating habits."*

**Athlete 35:** *"Balance: habit of eating correct, habit of training and be committed, enough sleep at night, enough rest to recover."*

### b. Commitment and dedication

There were nine athletes who identified being committed as a key habit:

**Athlete 20:** *"Discipline and commitment is definitely a habit that is needed."*

**Athlete 25:** *"Commitment - as sport evolves, need to put in more effort emotionally and physically."*

**Athlete 30:** *"Habits like focus, commitment and determination."*

**Athlete 42:** *"Commitment and dedication, so that everyone puts in same amount of effort and time and you don't just join half heartedly."*

### c. Hard work

There were seven athletes who identified the habit of working hard as a crucial habit for a hockey player to have:

**Athlete 4:** *"Habit of hard work and pushing your limits."*

**Athlete 12:** *"Disciplined and hard work. Hockey is a high intensity game that requires everyone to work hard."*

### d. Discipline

Discipline was noted by five athletes as an important habit to have as a hockey player. None of the club members acknowledged this habit:

**Athlete 1:** *"Discipline!!! Hockey is not a professional sport so if you want to make it you have to train on your own a lot of the time."*

**Athlete 10:** *"Commitment, discipline, time management."*

### **e. Visualisation**

The habit of visualisation was identified by five athletes:

**Athlete 20:** *"Visualisation before games and mental prep becomes more important as level increases."*

**Athlete 19:** *"Visualisation and mental aspects."*

**Athlete 14:** *"Habits of visualisation."*

### **f. Training and warm-up, warm-down routines**

Routines in training and those they engaged in before and after a game was identified by five athletes:

**Athlete 39:** *"Have a training routine, includes warm-up and recovery."*

**Athlete 13:** *"Find a warm-up routine that works for you. Get your head in the right space. Some people like to be relaxed, others get pumped up. Find your routine and try to make it a habit."*

**Athlete 8:** *"Warming up, eating correctly, warming down."*

### **6.9.2 Chess**

Some of the top habits identified by the chess players differed from that of the other sport codes due to the nature of the sport. It is an individual sport code where athletes are not allowed to talk whilst competing:

#### **a. Focus**

This habit was identified by five national athletes (three male and two female).

**Athlete 47:** *"Good concentration, focus, commitment."*

**Athlete 56:** *"Focus, because if you lose focus you end up losing the game."*

**Athlete 58:** *"Habit of focusing."*

#### **b. Commitment and dedication**

As in hockey, this habit was also identified by the chess players:

**Athlete 53:** *"Habit of striving, commitment, self-improvement, dedication."*

**Athlete 49:** *"Dedication, gets athletes used to hard work."*

### c. Concentration

The habit of concentration was identified by three male national athletes:

**Athlete 46:** *"Concentration, commitment and dedication. One must get in the habit of concentrating long hours, being committed and dedicated."*

**Athlete 49:** *"Concentration - critical to good performance."*

### d. Habit of being physically active

There were four chess players who noted that being physical fit is a requirement to be a good chess player:

**Athlete 48:** *"Physical fitness."*

**Athlete 54:** *"Players should be more physically active as chess doesn't get blood flowing and most players are in poor physical shape."*

**Athlete 57:** *"I'd say getting into the habit of regular physical exercise along with chess training. Healthy body, healthy mind."*

### e. Hard work

Hard work, as an important habit in chess, was mentioned by three male national players:

**Athlete 51:** *"Work ethic. The fact is you will not achieve anything without work ethic."*

## 6.9.3 Soccer

### a. Team orientated

There were five athletes who noted that for a team sport, it is important for an athlete to be inclined towards teamwork, rather than being individually inclined and not holding the team as more important than the individual. In order to create a working team environment, the soccer players mentioned habits such as good communication and showing respect as important habits contributing to the habit of being team orientated:

**Athlete 63:** *"Respect and good communication. This is because football is all about working for each other and not looking down on someone and having good communicating skills."*

**Athlete 68:** *"We should communicate more so that we can give each other information in the field of play."*

### b. Hard work

There were four athletes who identified with this habit as being critical:



**Athlete 59:** *"Working hard and being self-disciplined. Because the coach is with you on the pitch for two hours, what you do off it will play a major role in your performance."*

**Athlete 62:** *"Working hard all the time."*

**Athlete 64:** *"Working hard should be a habit."*

### **c. Discipline**

The habit of being disciplined was mentioned by three athletes:

**Athlete 67:** *"The habits should be positive and focused, mostly discipline."*

### **6.9.4 Basketball**

Hard work was identified by one of the basketball players:

**Athlete 79:** *"Players really need to understand that they will need to outwork the opposition to succeed. Talent is not enough."*

### **6.9.5 Possible important habits for individual sport codes**

A number of individual codes will be explored here due to the limited number of athletes representing these codes. In most of these codes there was only one athlete. The codes are karate, golf, table tennis, cycling, swimming and gymnastics and all represented in this study by national athletes, except for golf that was represented by two provincial players.

#### **a. Visualisation**

Visualisation seemed an important habit for three of these athletes:

**Athlete 74:** *"Also to use more pre-match visualisation."*

**Athlete 76:** *"Visualisation - to see yourself at your best."*

**Athlete 69:** *"Visualising their match before it occurs as I believe 90% of the performance is in the brain."*

#### **b. Commitment and dedication**

The habit of being committed and dedicated was indicated by a number of athletes. Their responses link commitment with hard work and relates it to achieving success in sport:

**Athlete 70:** *"Being committed, thus staying on par with training, diet etc."*

**Athlete 76:** *"Commitment - training volume is high... its hard work."*

**Athlete 78:** *"Discipline, commitment, perseverance, honesty - you have to train many hours to achieve greatness and you have to be disciplined enough to go every day."*

**Athlete 82:** *"Commitment and continues improvement - in order to improve, one needs the commitment to practice and train."*

**Athlete 81:** *"Focus, dedication and integrity. If you are not dedicated you will not win. If you don't have focus you can't compete. And the sport is built on integrity."*

### **c. Focus**

The habit of being focused was mentioned by three athletes. Athlete 75 related this habit with being mindful of the situation one finds oneself in whilst Athlete 81 referred to it as being a prerequisite for competition. Athlete 77 indicated that focusing can assist in combating negative thinking:

**Athlete 75:** *"... being able to keep focus on the present and not to dwell off to future or past thoughts."*

**Athlete 81:** *"If you don't have focus, you can't compete."*

**Athlete 77:** *"... and allow yourself to focus on what is up next without letting that negative experience affect what still needs to be done."*

From the 11 athletes in this subgroup, it can be ascertained that they value three distinct habits: Visualisation, commitment and dedication and thirdly, the habit of focusing. In total, three athletes identified visualisation, four athletes identified commitment and dedication and three athletes identified focus as a key habit.

### **6.9.6 General**

Athlete 43 pointed out that habits will differ from person to person:

**Athlete 43:** *"I think this differs from person to person, everyone has their habits."*

While this might be true, it was still possible to identify habit trends among the athletes and even more importantly identify trends across the various sport codes. A few habits were identified by athletes that did not get a mention by any of the other athletes. They are however habits that could and possibly should be incorporated into the repertoire of aspiring athletes. Athlete 76 pointed out the importance of having patience as an athlete. She remarked that it takes time for an athlete to show improvement. A habit of being patient will thus assist an athlete to continue working and practicing until the desired results are achieved:

**Athlete 76:** *"Patience. Results don't come overnight."*

Athlete 74 indicated that athletes should review their matches/competition after the completion of it. Having this as a habit will likely assist athletes in identifying mistakes or areas where they can improve and also indicate their areas of strength to them. This will assist with preparation for future events:

**Athlete 74:** *"Post-match evaluation."*

Athlete 80 mentioned that it is important for athletes to instil the habit of pushing their own limits, setting and pursuing goals that are unique to themselves. He noted that this habit will assist an athlete to develop to his/her best ability instead of being limited by the potential of those he/she pursues to overtake in achievements:

**Athlete 80:** *"The habit of not training or pushing to the level of the competition but towards discovery of your full potential and ability. We currently settle to be just better than our direct competitors."*

Athlete 53 identified a unique habit. This habit has the purpose of eliminating habits that might stand in the way of achievement and growth. By it being a habit, it means that an athlete can be on the constant lookout for unwanted or limiting habits and then to eliminate them by not engaging in them any further:

**Athlete 53:** *"Habit of sacrificing other habits."*

### **6.9.7 Summary**

Concluding question nine, it will be insightful to calculate the general occurrence of the various top habits as identified per code to establish the prevalence of these habits across the other codes by level of participation. The habits that were identified mostly in this question were as follows (the number indicates number of times it was identified by athletes as key habits):

Table 6.8 Overview of habits identified most frequently

Level of participation	Question answered	Commitment and dedication	Health habits	Hard work	Discipline	Team orientated	Focus	Visualisation
National	38	8	9	6	3	1	7	5
Provincial	25	8	5	6	4	1	1	1
Club	18	2	3	3	3	7	0	2
<b>Total</b>	<b>81</b>	<b>18</b>	<b>17</b>	<b>15</b>	<b>10</b>	<b>9</b>	<b>8</b>	<b>8</b>

The results provided in Chapter 6 will be discussed and synthesised with relevant literature in Chapter 7.

## CHAPTER 7

### Discussion: Phase 2 qualitative data

#### 7.1 Introduction

One of the aims of this study was to explore the psychological dynamics in the formation and maintenance of performance facilitating habits among athletes. This was identified and explored in Phase 1 of this study. The results were provided and discussed in Chapters 4 and 5. Based on the habits and themes that were identified and discussed, a set of questions was developed to explore the identified habits and themes among athletes participating on three different levels of performance, namely national-, provincial- and club level. Their experiences of these habits and themes are discussed in this chapter. The chapter will address part of the aims of this study by focusing on how habits relate to the success of athletes participating on different levels of performance.

Chapter 7 discusses and synthesises the results of Chapter 6 and relates the results with relevant literature.

#### 7.2 Psychological dynamics in the formation and maintenance of performance facilitating habits

##### 7.2.1 Habits identified

This section is organised according to themes of psychological aspects relating to habits. Clarity is provided by contextualizing habits and exploring themes identified by the athletes. The section then continues to incorporate habits that the athletes found to be relevant to their success and this is linked with their experiences and understanding of habits. Emphasis is put on habits that were mostly identified by athletes from all three levels of performance and also those that tend to be prevalent across sport code. The habits discussed here are those that given the above, also had the highest prevalence rate as mentioned by the athletes during the qualitative stage of Phase 2. The following table indicates the number of times that these habits were mentioned:

Table 7.1 Habit frequency

Habit	Number of times the habit was identified
Hard work (incorporating discipline and commitment)	51
Negative thinking	31
Visualisation	22
Health habits	18
Positive thinking / self-talk	18
Warm-up routines	17
Avoidance of negative habits	17
Mental skills training	16
Procrastination	14

#### a. Work ethic, discipline and commitment

Having a strong work ethic and being disciplined as an athlete complement the habit of being committed. A strong work ethic has been identified as a skill needed to become a successful athlete by Cooper and Goodenough (2007) in their research with some of South Africa's elite athletes. They identified a strong work ethic as: *"The ability to put in regular, systematic effort to reach one's chosen goals, the ability to set goals, and to then follow through by executing them in regular daily activity; the ability to be consistent and organised"* (Cooper & Goodenough, 2007, p. 225). Some of the athletes in Phase 2 indicated that they value hard work and discipline. They tend to work hard consistently and remain constant in attending to training times and adhering to structure in maintaining healthy eating habits and good sleep hygiene. This relates with the description of work ethic provided by Cooper and Goodenough (2007) pertaining to the lifestyle of an athlete with a strong work ethic. They found that athletes with a strong work ethic will take responsibility for their lifestyles and guide it to be conducive to them achieving success in sport.

When asked about his mental preparation for big challenges, the successful golfer, Gary Player, was quoted saying: *"I dedicated myself to working harder than anyone else and it was one of the factors that led to my success. I knew that whatever shot I had to hit. I had*

*already hit it hundreds, if not thousands, of times on the practice range"* (Marnewick, 2010, p. 23).

Though Cooper and Goodenough (2007) identified work ethic and discipline as skills, the athletes in this study identified the concepts as habits.

Phase 2 athletes indicated the importance of commitment and dedication to sport as a habit necessary for the attainment of success in sport. Commitment in sport is defined as "*desire and resolve to continue participation in sport*" (Scanlan et al., 1993b, p. 6 as cited in Choosakul, Vongjaturapat, Li, & Harmer, 2009).

In a study conducted by Choosakul et al. (2009), it was indicated that athletes are more likely to commit to participation in sport if certain aspects/needs are met. Among these are the athletes' enjoyment of the sport experience, social support, feeling that they can achieve and receive recognition and dedicate themselves to their sport. Their study was conducted among youth athletes in Thailand and though the study was limited to this distinct group, it is an indication of factors that will possibly enhance and promote the commitment levels of sport participation among youth athletes on a more general scale. It provides a detailed description of aspects that comprises the concept of being committed to sport and the factors needed to be addressed to promote and possibly establish commitment in sport.

The Phase 2 athletes who indicated that commitment is a pivotal habit in their sport careers, might have their needs, as proposed by Choosakul et al. (2009) met. These national- and provincial athletes who, due to their level of participation, might enjoy more social support, invest more time and effort, receive more recognition for their involvement and also perceive their own abilities to be high, in comparison with the small number of club athletes who mentioned commitment as a vital habit in their specific sport. It was only when club athletes were presented with a list of values that included commitment, that they strongly indicated it as a very important value an athlete should have in order to be successful in their specific sport codes.

#### **b. Negative/Positive thinking and related self-talk**

The nature of an athlete's thinking impacts his/her performance (Kremer & Moran, 2008). There are four known types of positive thinking in the sport context. These are the thoughts related to an athlete psyching him/herself up, controlling anxiety, thoughts related to the enhancement of self-confidence and thoughts that are instructional in nature for example, instructions to guide actions whilst performing (Hardy & Oliver, 2014). Kremer and Moran (2008) indicated that negative thinking originates from negative self-talk which is often a

result of making mistakes. Self-talk refers to the *"internal or covert dialogue which people engage in when they 'talk' to themselves inside their heads"* (Moran, 2012, p. 352).

Phase 2 athletes made constant reference to the nature of their thinking. Negative thinking was mentioned often and as a concern by quite a few athletes. They indicated an awareness that their negative thinking was habitual and counterproductive to their performances. In contrast, some athletes also mentioned that they have a habit of thinking positively about events in their lives. Some athletes also indicated that they attempt to create positivity in their lives by reminding themselves about positive aspects of their situations or their abilities.

The manner in which individuals think about themselves and what they say about themselves are also linked to an individual's level of self confidence (Hardy & Oliver, 2014; Orlick, 1998). Confidence can be strengthened when an athlete remains positive with him/herself. Orlick (1998) also noted that confidence is strengthened when an individual's thoughts and actions result in positive feelings about him/herself. Kremer and Moran (2008) reiterated Orlick's view by explaining that confidence levels can be lowered as a result of mistakes and accompanied negative self-talk.

There seems to be link between the quality of focus and nature of thoughts. Maintaining a positive attitude in sport by managing thoughts and feelings promotes effective focusing (Potgieter, 1997). It has been found that athletes perform better when they can take negative experiences and view them in a positive light (Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999). Hardy and Oliver (2014) noted that there is limited research available on the effects of self-talk on athletes within an actual competitive situation due to most studies involving unskilled university athletes who do not function as professional athletes and studies aiming at the perceived benefits of self-talk in practice sessions.

### **c. Visualisation**

Orlick and Partington (1988) found that mental imagery was one of the most important skills that was directly related to success at the 1984 Olympic level. Murphy (2005) explained that mental imagery and visual perception should not be confused, though both processes use many of the same brain pathways and has to do with 'seeing' something that is not happening at the specific point in time. Visualisation is different because through visualisation the individual has the opportunity to construct in his/her mind how future events play out and rehearse events that have not happened yet. It is a more intense form of visual perception. Visualisation is also different from dreams, because an individual can control the visuals when visualising, while when dreaming, an individual cannot control the visual images (Murphy, 2005).



Visualisation assists an athlete to simulate experiences (Moran, 2012). It is therefore very useful as a pre-performance routine. It was also indicated in this study that the Phase 2 athletes used visualisation to also replay performances in order to learn from it. It can therefore also serve as a post-performance routine to analyse performance for the purpose of future training and improvement. It was also indicated that visualisation assists in managing interpersonal skills in a team environment by using visualisation to enhance empathy among team members.

#### **d. Health habits**

The findings in this study indicating that athletes tend to include health habits in their sport careers, correspond with the findings of Van Biervliet, Van Biervliet, De Neve, Watteyne and D'Hooghe (2011). In their study with footballers, they found that competitive footballers are able to adapt their nutritional habits positively in order to enhance their performance. Incorporation of health habits in an athlete's management of his/her sport career was also found in a Flemish study conducted by Aerenhouts, Hebbelinck, Poortmans and Clarys (2008). They indicated that sprint athletes tended to include nutritional health habits and showed that they are able to maintain these habits. The ability of an athlete to adopt habits that promote health was viewed as an important habit by the athletes and they felt that it impacted their performances negatively if they neglected their health and did not include health habits. These habits included healthy eating, managing meal times to optimise training and competition performance as well as good sleep habits and managing their health in general.

#### **e. Warm-up routines**

The Phase 2 athletes described the importance of having warm-up routines leading up to competition and they prefer to keep these routines constant and without change. These athletes indicated that sticking to certain routines assists them in dealing with anxiety and tension on the day of competition. The sense of familiarity provided by the repetition of routines contributes to a sense of confidence and being at ease with their level of readiness for participation. This is consistent with Potgieter (1997) who indicated that routines serve the function of providing the participant with a feeling of control over his/her experience and a feeling of familiarity. Having routines also assists in dealing with distractions (Greenleaf, Gould, & Weinberg, 2001). Potgieter (1997) explained that routines also assist an athlete with dealing with pressure and is effective when an athlete is functioning under pressure. This is consistent with the experiences of the Phase 2 athletes who indicated that the habit of engaging in warming-up routines assists them in maintaining a state of calm.

Performance routines and plans have been indicated in studies of Olympic athletes to be an important aspect of successful competing (Gould, Greenleaf, Chung, & Guinan, 2002; Gould et al., 1999; Orlick & Partington, 1988). These routines would include planning to include certain behaviours on the day of competition which are aimed at pre-competition routines that include imagery, quality warm-up routines, positive thinking and ways to deal with distractions (Orlick & Partington, 1988). Routines on the day of competition were seen as a flexible way of adapting to the competitive environment by five elite gold medallist swimmers at the 2008 Beijing Olympics (Grant & Schempp, 2014). Instead of viewing routines as a fixed set of behaviours, they experienced routine behaviour as something that is flexible and adaptable to their presenting situations.

There were Phase 2 athletes who indicated that they did not have any routines or habits and it might be due to their understanding of the rigidness of habits and routines. Grant and Schempp (2014) found that the participants in their study indicated that they too, did not have competition-day routines but it was found that they indeed did have routines once they documented their daily activities on the day of competition. It might be that athletes shy away from what they think the implications may be of having habits and routines, denying the very fact that routines and habits do form part of their behavioural patterns in the competitive setting.

#### **f. Mental skills training**

Phase 2 athletes indicated that the habit of general mental preparation for events is important as part of their preparations for competition. This is consistent with the findings of Orlick and Partington (1988) who in their research among Olympians, found that an athlete's mental preparation and readiness was a distinguishing factor for Olympic success. In their study, it outranked physical and technical factors linked with final Olympic rankings. An athlete's ability to be mentally ready at crucial competitions can therefore be a determining factor when competitors are physically and technically well prepared. In order to be mentally well prepared for an event, an athlete is required to learn mental skills and consistently and routinely incorporate those mental skills in training and practice it as often as possible (Orlick & Partington, 1988).

Athletes often find themselves in unfamiliar terrain on the day of competition. This can be due to unforeseen distractions such as the weather, behaviour of opponents and last minute change of competition venue. These types of variables can be quite extensive permitting the type of sport and level of participation. Being mentally prepared for distractions and having had the opportunity to practice techniques to deal with factors that can impact performance

is vital for successful performance (Gould et al., 1999). A number of Phase 2 athletes indicated that they realised the importance of mental preparation and attempted to include their mental preparation as a habit in their lives.

#### **g. The habit of avoiding bad habits**

A number of athletes indicated that they view their attempts to avoid detrimental behaviour to their sport success as a habit. They have developed a habit of identifying and avoiding any behaviour that can negatively impact their sport performance. If one looks at the nature of the type of behaviour they consistently attempt to avoid, it becomes clear that it reflects behavioural patterns of athletes who have not yet developed adequate mental skills in their sporting careers. Mental skills refer to concepts such as being focused, disciplined and maintaining healthy lifestyle habits conducive to successful performance (Moran, 2012; Orlick & Partington, 1988). The experiences of Phase 2 athletes have made them aware of the requirements for good performances as well as those factors that will be detrimental to their careers. It therefore seems that they have learnt to identify the positive habits and thereby avoid the negative habits that might influence their sport careers negatively.

#### **h. Procrastination**

Procrastination is defined as an individual's failure to regulate his/her own behaviour, thoughts and emotions (Steel, 2007, as cited in Sirois & Tosti, 2012, p. 238). According to Ferrari and Tice, 2000, as cited in Mann (2016, p. 47), procrastination is *"characterised by self-regulation difficulties in the form of delaying the start and/or completion of necessary and important tasks."* Linking with these definitions is the one provided by Van Eerde, 2003, as cited in Mann (2016, p. 47), defining procrastination as *"postponing or delaying the performance of a task or decision."* All three these definitions point to procrastination as a behaviour, a manner in which an individual approaches the execution of tasks or the way he/she manages and act upon thoughts and emotions. The athletes in this study identified procrastination as a habit. They identified procrastination as a negative habit and thus a behaviour in their lives that are not constructively contributing to their success. Procrastination creates stress in their lives and a feeling of being under pressure to execute tasks. This is consistent with Sirois (2004) who refers to procrastination as a behavioural tendency, relating stress as an associated consequence to procrastination.

Sirois and Tosti (2012) found that there was a strong link between procrastination and level of mindfulness. Their study indicated that individuals who procrastinate, also experience stress and have low levels of mindfulness. These individuals tend to have negative perceptions of their own health status. Although this current study did not assess athletes'

perceptions of health status, it did indicate that athletes felt that they were stressed as a consequence of their procrastination habits. A number of the athletes who indicated that they procrastinate, also identified negative thinking as a habit and this correlates with the findings of Sirois and Tosti (2012) and Evans et al., 2009, as cited in Mann (2016) who found that individuals who procrastinate tend to approach demanding situations critically and judgmentally. They have pointed out that this critical stance can then cause an individual to think negatively.

### **i. Focus**

Focusing is a habit that was identified by Phase 1 athletes and presented to Phase 2 athletes to explore their views on the importance of this habit. Athletes who have the ability to give their attention to the task at hand and thereby avoiding distractions are known to be prone to achieving success (Perry, 2005; Moran, 2012). Athletes in Phase 2 agreed with the Phase 1 athletes that focusing is necessary to perform well. The elite athletes in Phase 1 identified focusing as a critical habit to have as an elite athlete and this viewpoint was assessed among the Phase 2 athletes. Orlick (2008) refers to the importance of focusing as a skill needed to combat distractions during the critical time of performance. The athletes from both phases were in agreement with Orlick's view.

The concept of giving attention includes three different dimensions as discussed by Moran (2012). The first dimension involves concentration which refers to an individual's ability to "*exert deliberate mental effort on what is most important in any given situation*" (Moran, 2012, p. 132). The second dimension refers to the athlete's ability to give selective attention to specific, relevant information and ignoring distractions. The third dimension entails an athlete to be able to give attention to more than one action at the same time without being distracted by either of the actions. The athletes were questioned about their views on the role of focusing in their sport careers and it was understood that the athletes' understanding of the concept of focusing will include at least one of the above dimensions since focusing is a term used widely by athletes, coaches and administrators and generally accepted to have something to do with what an individual gives attention to in a given moment.

The Phase 2 athletes pointed out that they find the habit of focusing useful in dealing with distractions. It assists them in controlling the impact of possible distractions. This is consistent with the findings of Orlick and Partington (1988) and Gould et al. (1999), who indicated the importance of focusing on relevant information during times of competition as a factor in successful sport participation among elite athletes at Olympic level.

The athletes also identified a link between focusing and mindfulness, indicating that focusing assists them in heightening their awareness levels in situations. This links with the work of Aherne, Moran and Lonsdale (2011). Their research results indicated a possibility that mindfulness training can have positive effects on the flow experiences of athletes and thus their quality of focusing.

### **7.2.2 Experiences of habits**

Phase 1 athletes indicated that they tend to continuously seek new ways to improve their performances. They have realised that their competitors will train hard in an attempt to beat them and they are therefore focused on staying ahead of their rivals by broadening their techniques and approaches to obtain their goals. They also strive to improve their own performances by seeking new methods and techniques.

What is interesting to note here is that all the club athletes that chose to answer the question on their approach to improvement, opted to choose that they tend to stick with what worked well in the past. None of the club athletes indicated that they try to incorporate new ideas or methods into their training or competitions. Another point to note is that all the soccer players chose this option of maintaining the status quo of their preparation regimes. Also, within the study sample there are only three male club hockey players and all three of them chose this option of sticking to what works as well.

The findings of Phase 1 of this study project indicated that the elite athletes all tried to continuously find new ways of improvement. They were actively searching to develop and become better athletes and for them it involved always being on the lookout for change and incorporating new methods, techniques and ways of doing and thinking. This was absent among the club athletes in this study.

It is generally accepted that competitive athletes will try to improve and attempt new ideas and techniques to stay abreast of the competitive field. It is also generally accepted that athletes will try to continuously improve their own performances for their own personal reasons and to this extent be open to suggestions that might be different from what they have always done. This openness to new information and improvement links with the growth mindset from Dweck (2006).

The club athletes' reaction to innovation and growth in their sport is in direct contrast to that of the Phase 1 athletes and the national- and provincial athletes in Phase 2. The Phase 1 athletes especially, acknowledged that they know that their performances are not fixed, that they can improve, they challenge themselves by trying to find ways of improvement and they do this by being mindful of their bodies' needs, emotional needs and adjusting themselves

accordingly. These are all concepts identified to improve quality of experiences and performance (Dweck, 2006; Kabat-Zinn, 2011; Orlick, 1999; Visser, 2006). It might be a worthwhile exercise to assess this theme among a larger group of club athletes and across a bigger variety of sporting codes in order to establish if this is indeed a general trend among club level athletes.

### **7.3 Summary**

Chapter 7 discussed the results of Chapter 6 and related it to the existing body of knowledge. From the athletes' responses and reflections on the habits in their lives one can ascertain that habits play a role in their sporting careers and that they are quite aware of these habits. Although the Phase 2 athletes participate in sport codes that are uniquely different from each other, there seemed to be repetitive behaviour across the board that they chose to include in their arsenal of improving performance and training. The identification of the same important concepts for performance, regardless of the sport code, is consistent with the views of Van Yperen (2009), Gould et al. (2002) and Fourie and Potgieter (2001), which stated that elite athletes seem to have similar psychological traits regardless of the sport code that they are involved in.

Chapter 7 explored the habits that the national-, provincial- and club athletes had in common. It also illustrated some of the differences among the three levels in how strong some of these habits seem to appear in the athletes' lives. Comparisons were also made to the data collected from the Phase 1 athletes. For example, a distinguishing habit among high level performers have been identified as the habit of innovation, looking for new methods and techniques to stay abreast of competitors. This habit was not present among the club level athletes who chose to rather continue doing and behaving in a manner that have yielded successful results for them in the past.

What is worrisome and also surprising, is the athletes' constant experience of negative thinking and procrastination. These two habits were largely identified among the national athletes. These athletes indicated an awareness of the presence of these habits in their lives. They understood the implications and the detrimental affects thereof, though, the behaviour persists in their lives.

Phase 2 athletes also identified visualisation as an important habit in their sport performances. This is consistent with the experiences of Phase 1 athletes who also identified it as a critical habit for success in sport.

An important finding in Phase 2 that correlates with a similar finding in Phase 1, is that athletes referred to mental skills concepts as habits. Athletes from both phases distinguished between behavioural habits as well as mental skills habits. This is instructive as mental skills and psychological traits are the constructs that are known to influence successful sport participation (Gould et al., 2002; Fourie & Potgieter, 2001; Van Yperen, 2009). The results obtained from the Phase 1 and Phase 2 athletes' views on habits, may very well indicate the role of certain habits, that if learned and applied correctly, can be critical in attaining and maintaining success in sport.

## CHAPTER 8

### Results: Phase 2 quantitative data

#### 8.1 Aims and objectives

Chapter 8 addresses all the aims and objectives of this study. This study had five main objectives. These objectives addressed the aims of the study which were to:

- explore the psychological dynamics in the formation and maintenance of performance facilitating habits among athletes.
- identify and determine the effect or impact of values and disconnected values on the formation and maintenance of performance facilitating habits among athletes.
- determine the relationship between mindfulness and habits of athletes.
- determine if there are significant differences between the levels of participation relating to these psychological dynamics, habits, values and mindfulness. This aim is integrated into the first three aims.

The objectives were:

- To explore the psychological dynamics related to habits of the selected subjects in Phase 1 by making use of semi-structured open-ended questions.
- To explore the psychological dynamics related to habits of the selected subjects in Phase 2 by making use of a structured questionnaire.
- To determine the nature and strength of habits of the selected subjects by employing the Shadowmatch™ Worksheet in Phase 2.
- To ascertain the values of the subjects as formulated and measured in the ten human values assessed by the Portrait Values Questionnaire (PVQ) in Phase 2.
- To assess the most important values as experienced by the subjects in Phase 2 by using the Value Checklist based on and adapted from the Disconnected Values Checklist of Anshel.
- To determine the mindfulness levels of the subjects in Phase 2 by employing the Five Facet Mindfulness Questionnaire (FFMQ).



- To determine according to the different psychological measurements if there are any differences between the different levels of participation.

Chapter 8 provides insight into how these objectives were met during Phase 2 of this study. The measuring instruments were used as was envisaged in Chapter 1. The results of these measurements are set out in this chapter and the analysis are presented in the following order:

8.2 Description of the sample

8.3 Athletes' reflections/opinions on concepts derived from Phase 1 data

8.4 List of measuring instruments

8.5 Statistical analysis

8.6 Habits - Results of the Shadowmatch™ Worksheet

8.7 Values - Results of the Value Checklist and PVQ

8.8 Mindfulness - Results of the FFMQ

8.9 Correlations between three different measuring instruments (FFMQ, PVQ and Shadowmatch™ Worksheet)

8.10 Conclusion

8.11 Summary

## **8.2 Description of the sample**

### **8.2.1 Biographical data**

#### **a. Age**

The average age of the participants is 27 years. With 18 years being the youngest and 58 years the oldest participants, this study is inclusive of a wide range of age groups.

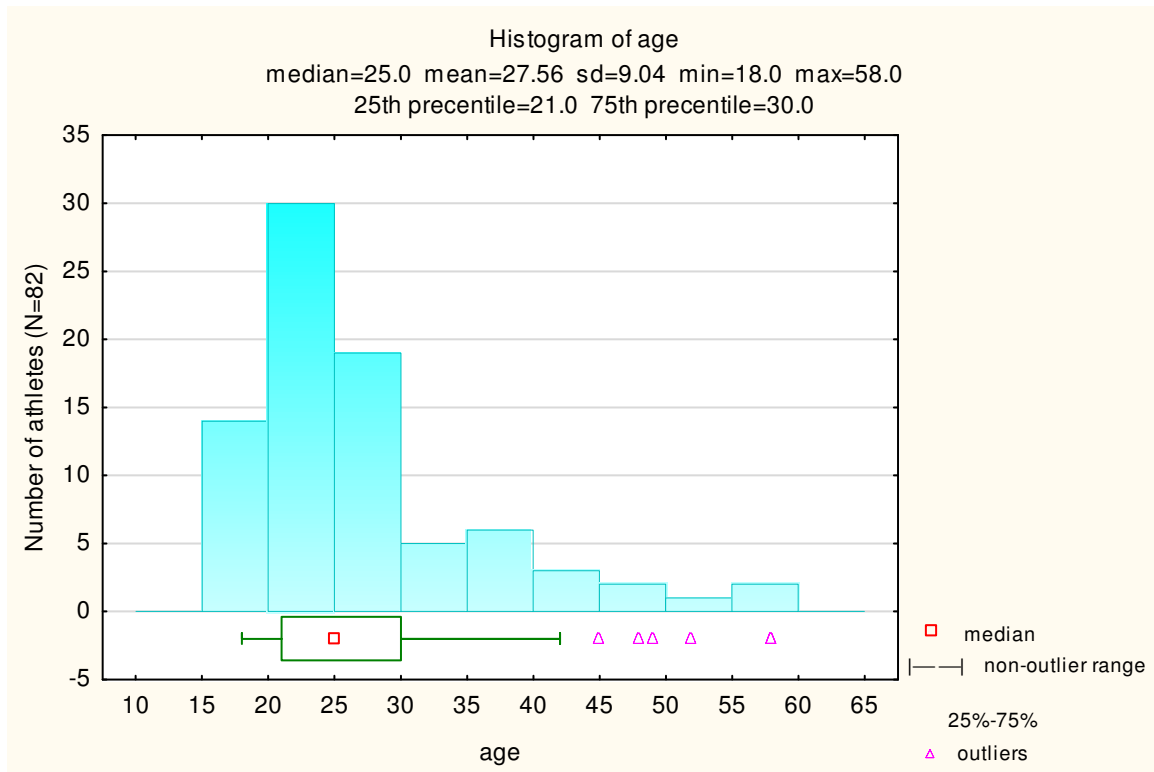


Figure 8.1 Histogram of age

**b. Gender**

The study aimed at being representative of both genders. An adequate sample was reached with 46 athletes being male and 36 athletes being female.

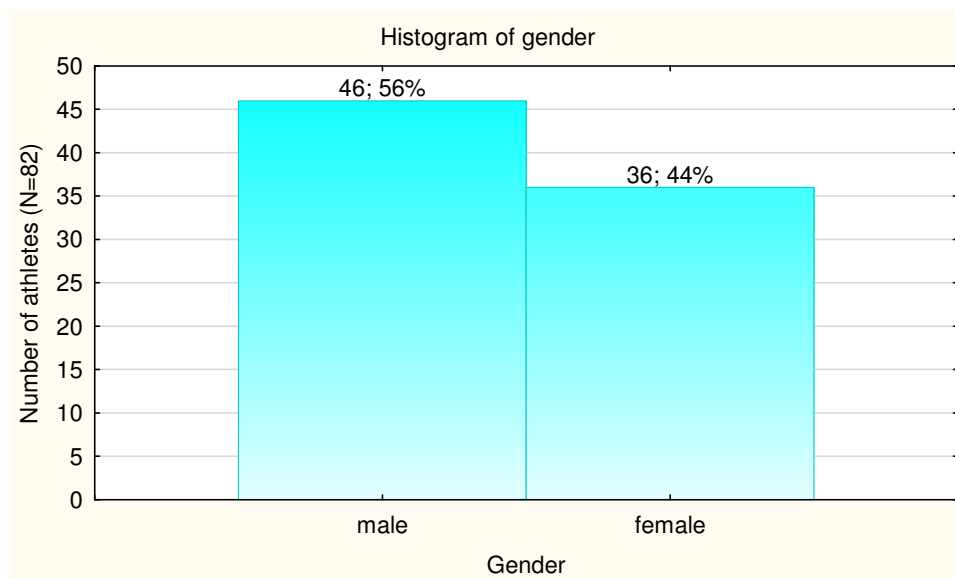


Figure 8.2 Histogram of gender

**c. Race**

Four main racial groups in South Africa are represented in this study. The largest sample being White and the smallest sample being Indian.

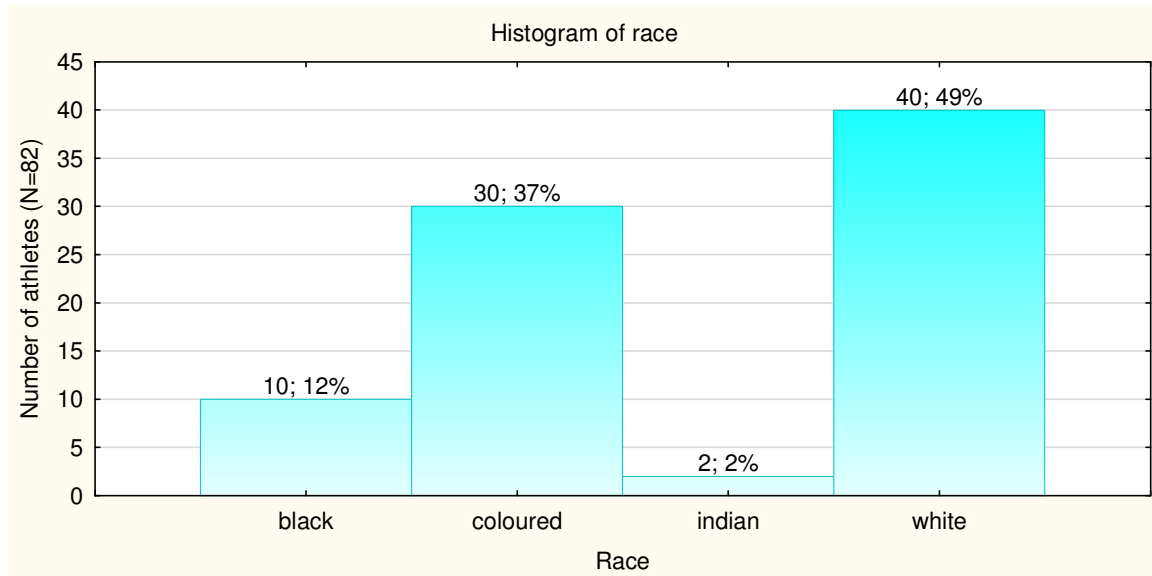


Figure 8.3 Histogram of race

**d. Sport code**

This study aimed at gathering data from both team and individual sport codes. A large sample of hockey players, 51%, participated in this study. The smaller, individual codes such as triathlon and table tennis were represented by one athlete respectively as indicated by the 1% value. Larger groups of athletes within some of the smaller codes in this graph were included in the data gathering phase but their data was discarded due to incomplete questionnaires.

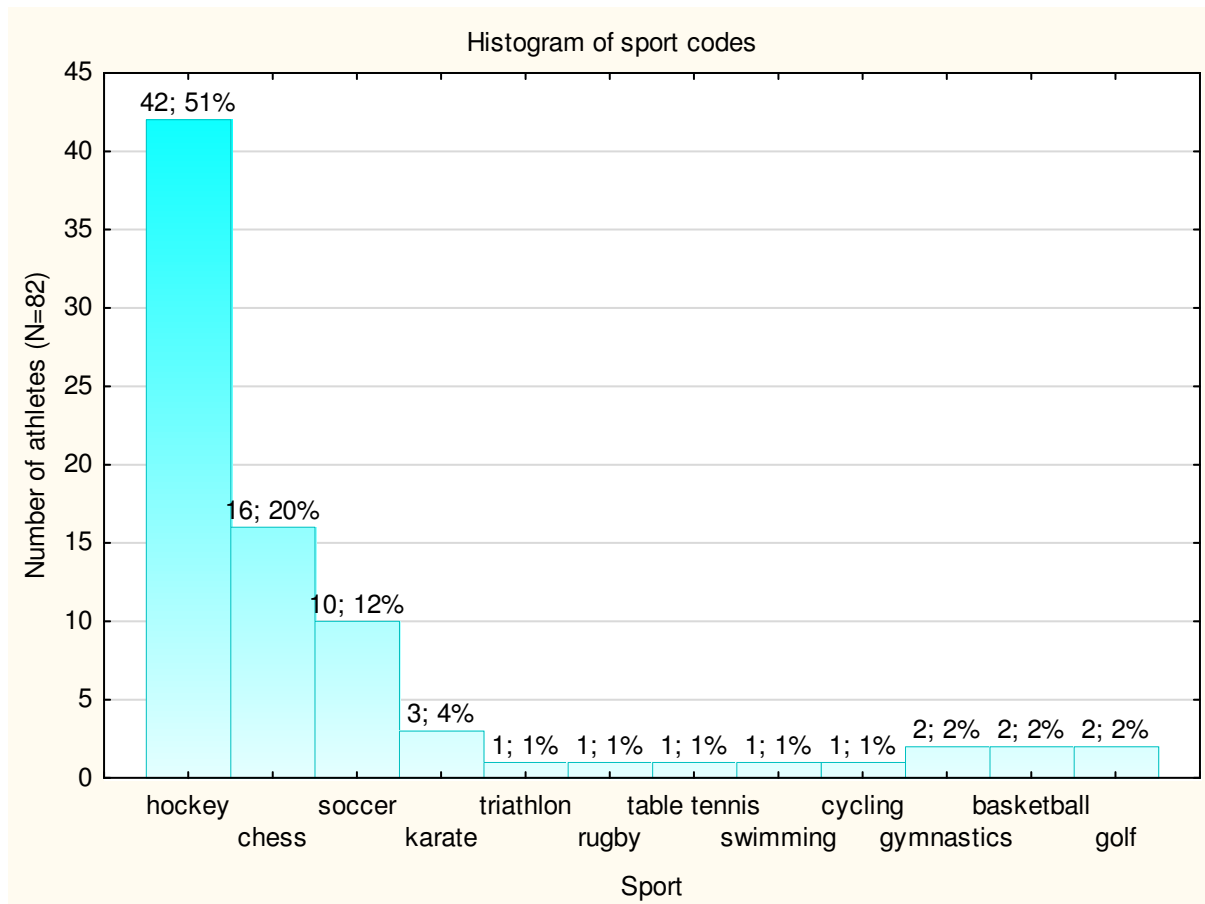


Figure 8.4 Histogram of sport codes

**e. Level of participation**

One of the main focuses of this study was to establish if athletes within different levels of sport participation experience habits, mindfulness and values differently. The study gathered data from 38 national athletes, 25 provincial athletes and 19 athletes participating on club level.

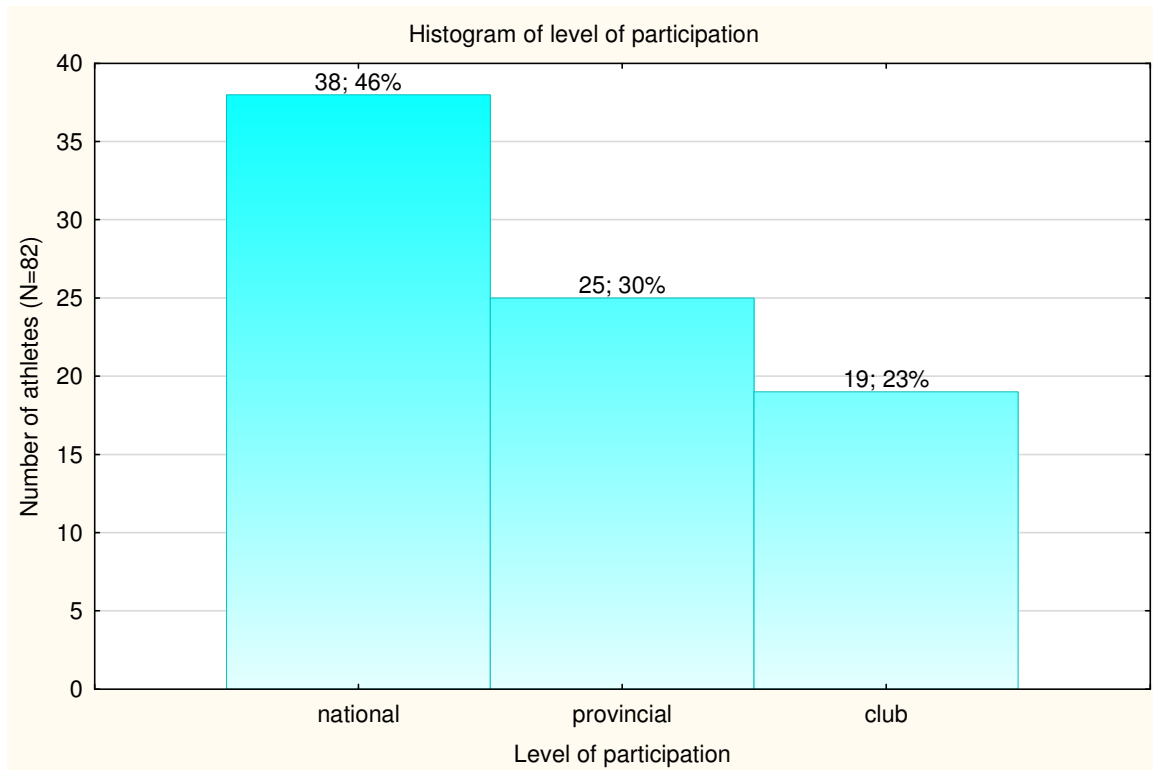


Figure 8.5 Level of participation

**f. Years participating in current sport**

The athletes have, on average, been actively participating in their sport for 16,8 years. With a mean age of 27 years, it indicates that most of these athletes have started their sport code specific participation in their early childhood years.

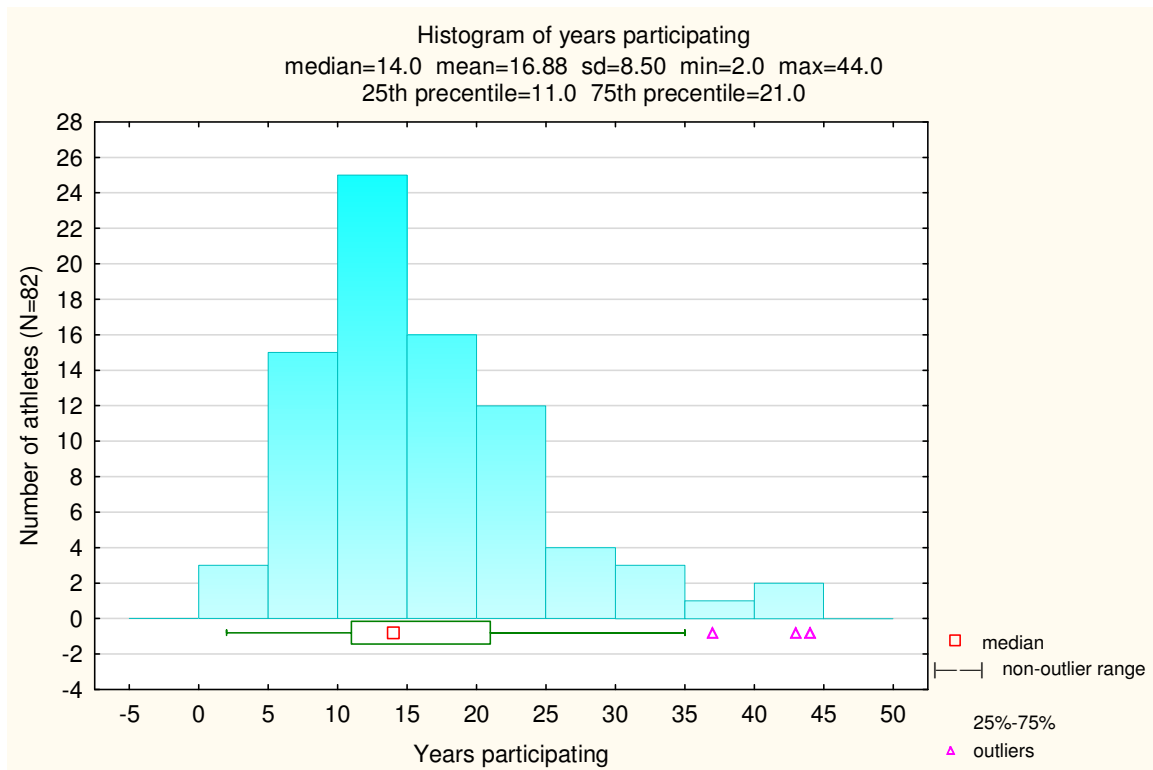


Figure 8.6 Years participating in sport

**g. Projected involvement in sport**

The question was posed as to how the athletes viewed their sport participation in future. This could involve participation as athlete, coach or administrator. Forty nine percent of the athletes indicated that they intend to be involved in their sport for at least 11 years from the date of competitive retirement. Twenty three percent indicated that they are not sure for how long they will still be involved. Twenty seven percent indicated that they might be involved for a maximum of five years after their competitive retirement.

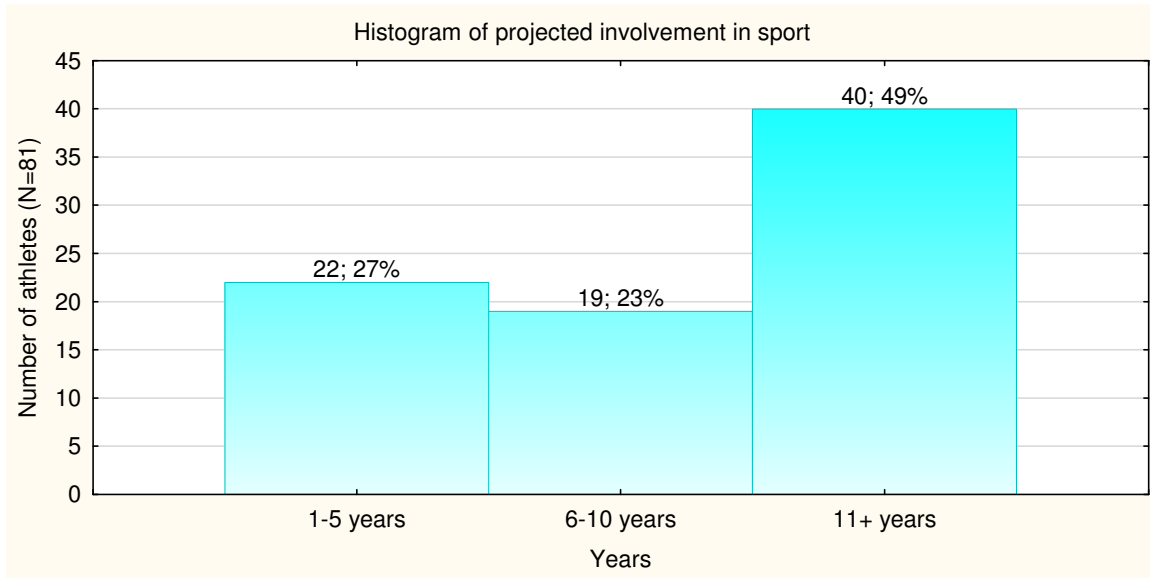


Figure 8.7 Projected involvement in sport

#### h. Amount of training hours per week

The majority of the Phase 2 athletes indicated that they trained less than 10 hours per week. The elite athletes all averaged 20-25 hours of training per week. Only 14% of the Phase 2 athletes indicated that they train more than 20 hours per week.

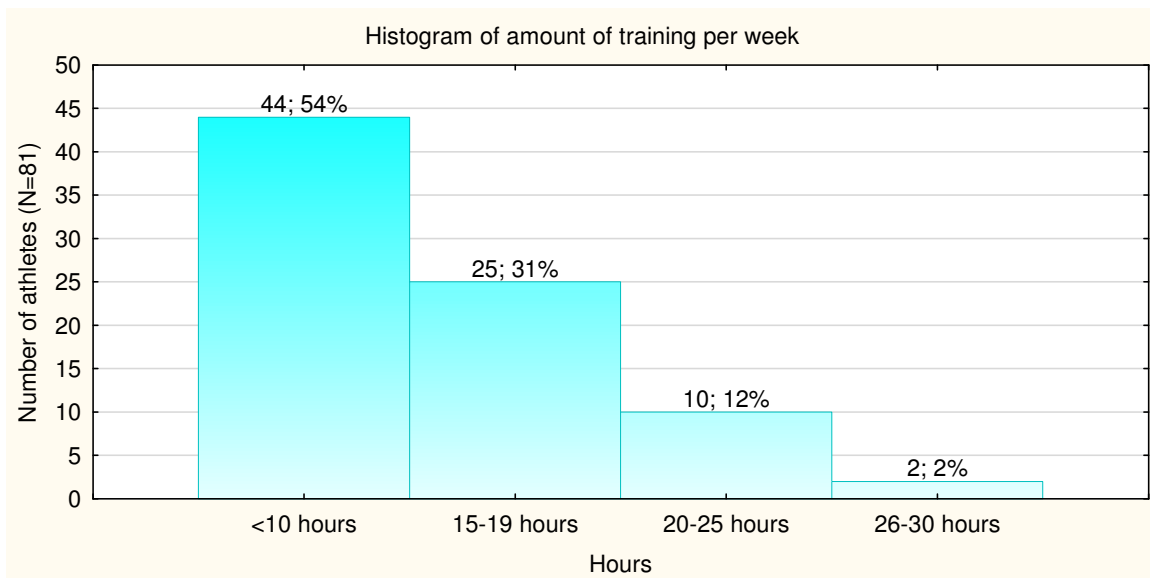


Figure 8.8 Amount of training per week

## 8.3 Athletes' reflections/opinions on concepts derived from Phase 1 data

### 8.3.1 Parent involvement in sport

During the interviews with the Phase 1 elite athletes, the theme of their parents' involvement in sport was identified as a central theme. At least one of their parents was actively involved in sport. Seventy one percent of Phase 2 athletes indicated that they grew up in a family where at least one of their parents participated actively in sport. Two percent of the athletes were not sure about their parents' involvement in sport and 27% indicated that their parents were not active involved in sport.

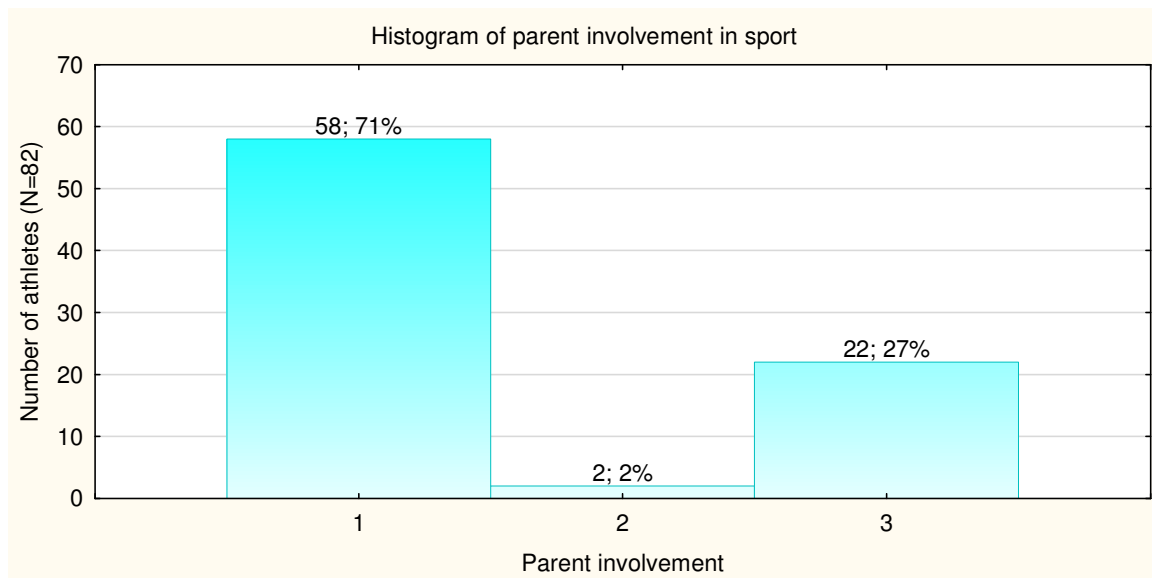


Figure 8.9 Parent involvement in sport

### 8.3.2 Inspiration acquired by the performance of another athlete

Most of the elite athletes indicated that they were inspired by the performance of another athlete when they first started out in their sport. This was the same for most of the Phase 2 athletes who indicated that 58% of them were inspired by the performance of another athlete. Sixteen percent of the athletes were not sure if they were inspired and 26% of the athletes noted that they were not inspired by another athlete when they first started out in their sport careers.



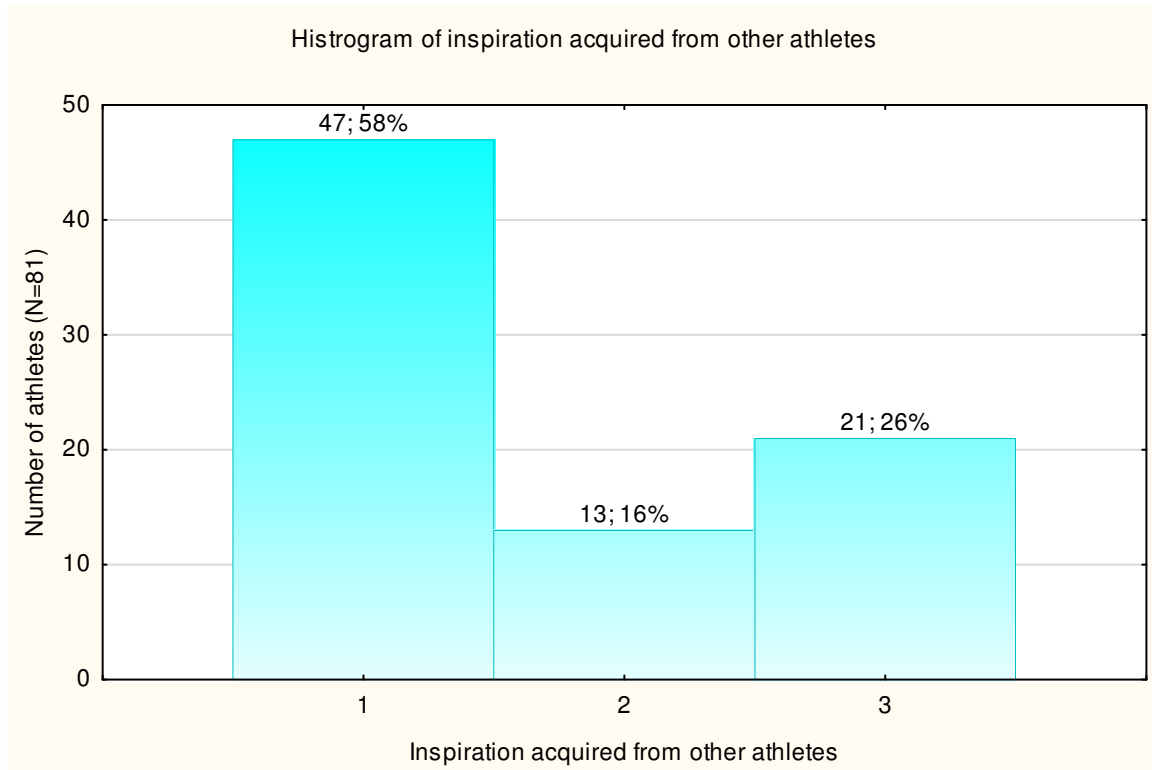


Figure 8.10 Inspiration acquired from other athletes

### 8.3.3 Opinions related to talent as main predictor of success in sport

Phase 2 athletes were asked how they would rate the importance of talent as the main predictor of success in sport. Forty eight percent indicated that talent is not the main predictor of success. Thirty three percent were unsure about the importance of talent and 20% indicated that talent is the main predictor of success in sport.

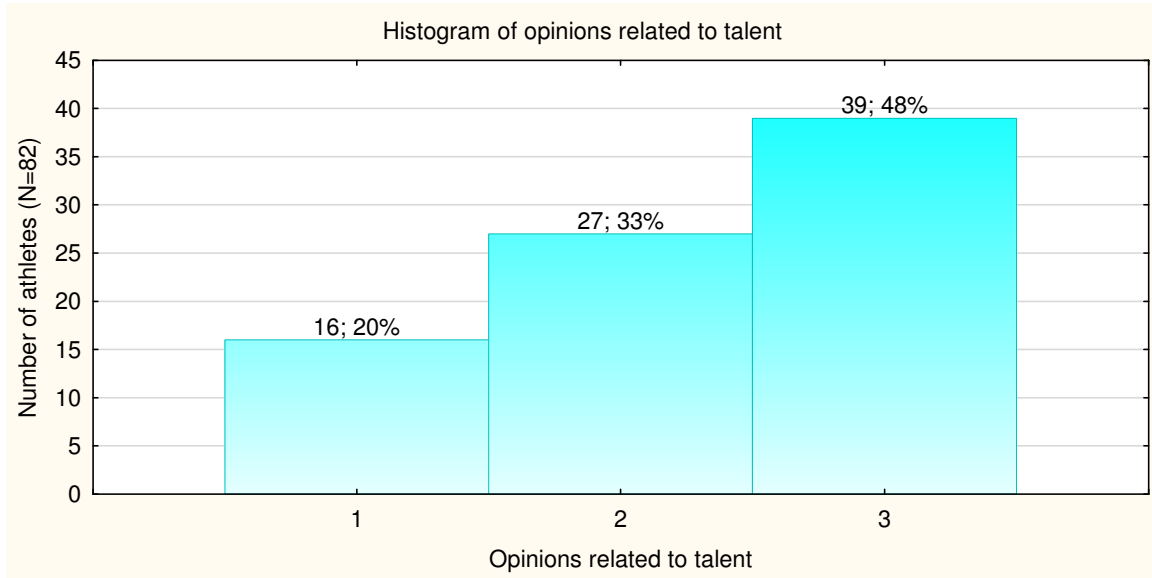


Figure 8.11 Opinions related to talent

### 8.3.4 Opinions on hard work as main predictor of success in sport

Phase 2 athletes mostly agreed that the effort that an athlete puts into his/her sport is the main predictor of success. Seventy seven percent valued hard work as the main predictor of success, with 19% feeling unsure about the importance of hard work, and 5% indicating that hard work is not the main predictor of success in sport.

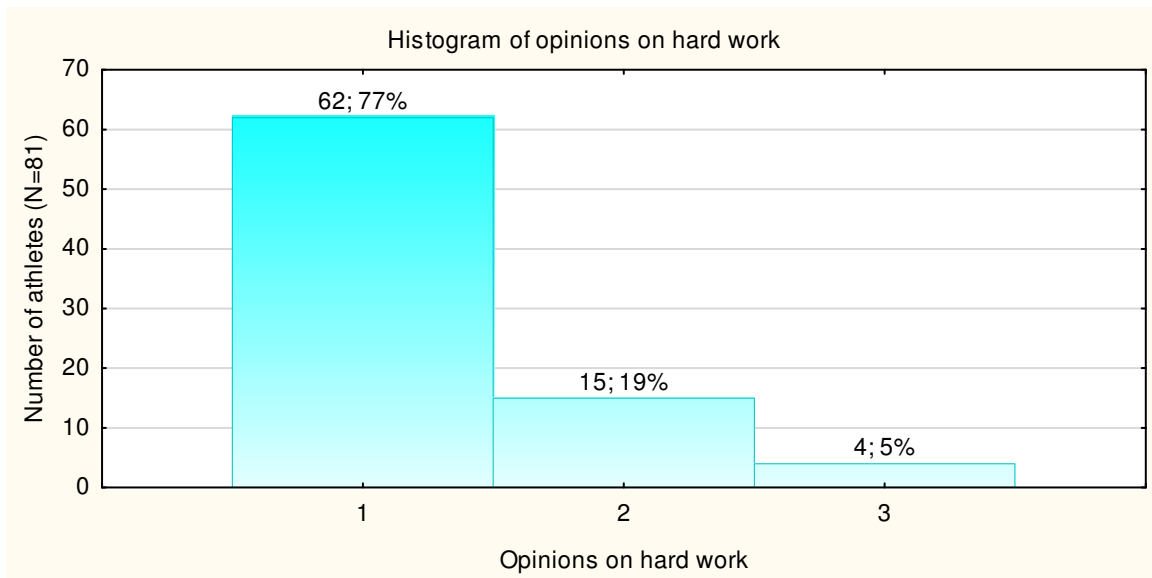


Figure 8.12 Opinions on hard work

### 8.3.5 Awareness of habits

The majority of Phase 2 athletes noted that they are aware of their habits. These habits include habits in the sport context and those in other areas of the athletes' lives. Seventy nine percent indicated awareness of their own habits, 20% were not sure and 1% noted that they did not experience an awareness of their own habits.

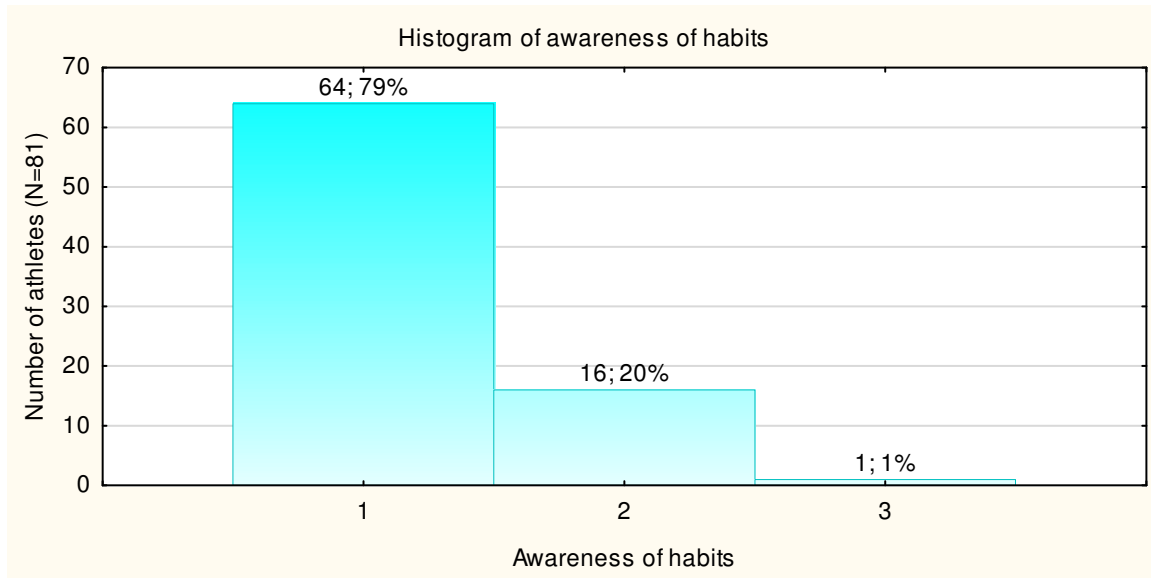


Figure 8.13 Awareness of habits

### 8.3.6 Relationship between level of participation and specific habits

Phase 2 athletes indicated if they thought that certain habits increase in strength as the level or participation increased/intensified. Eighty seven percent of the athletes noted that the importance of certain habits increased as their level of participation increased/intensified. Only 9% were not sure and a mere 5% indicated that the importance of certain habits do not increase as the level of participation increases. The majority thus indicated, for example, that athletes participating on national level will require different habit strengths than the athletes on club level.

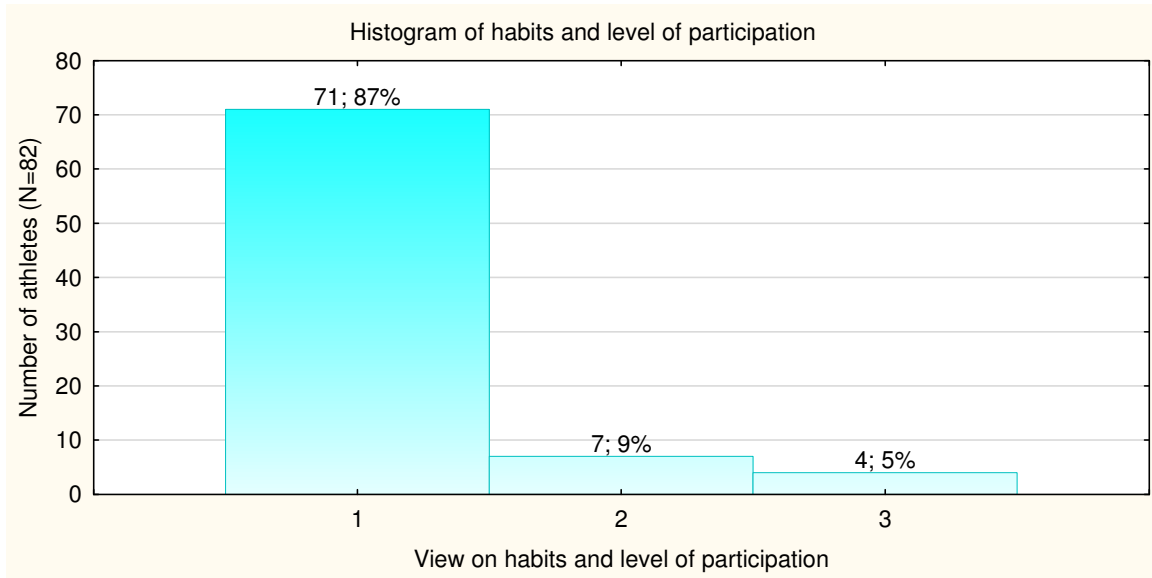


Figure 8.14 Habits and level of participation

### 8.3.7 Importance of mental preparation for competition

The majority of Phase 2 athletes indicated that mental preparation is an important component of their preparation for an event. Eighty three percent acknowledged the presence of mental preparation in their preparations, 13% were unsure and 4% indicated that mental preparation is not a big component of their preparation for an event.

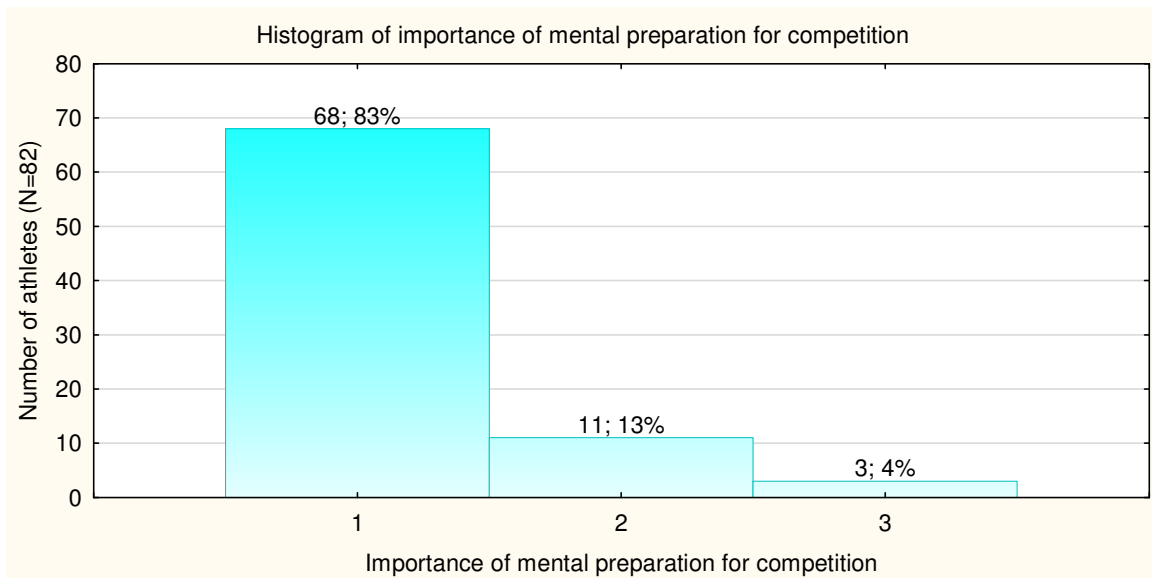


Figure 8.15 Importance of mental preparation for competition

### 8.3.8 Relationship of performing well and awareness of surroundings

Athletes were questioned on the importance of a deep awareness of their surroundings and how important this awareness is to perform on a high level. Sixty one percent indicated that for them to perform well, it is important to have a deep awareness of their surroundings, 27% were unsure about the importance of awareness of surroundings and 13% said that it is not important for success.

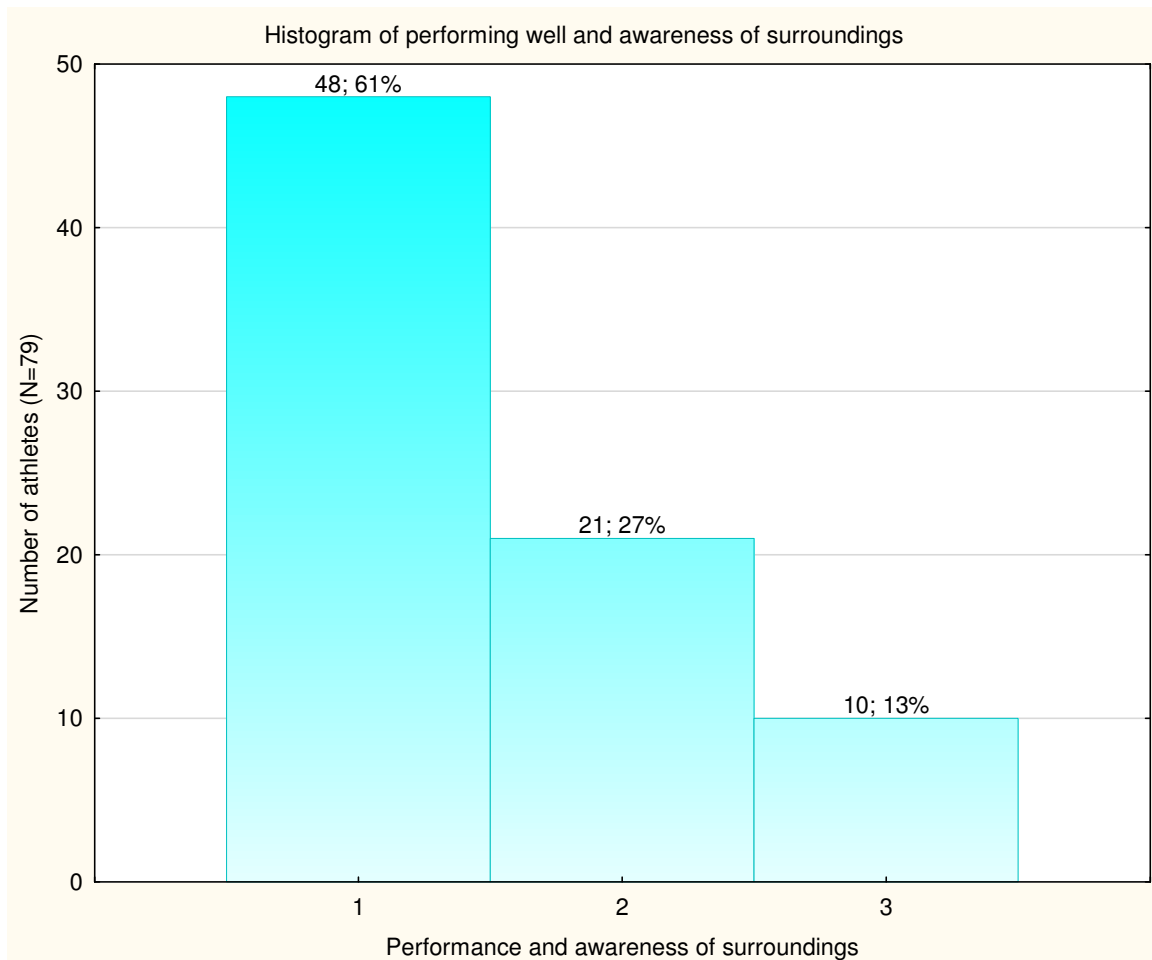


Figure 8.16 Performing well and awareness of surroundings

### 8.3.9 Awareness of own behaviour on others

The Phase 2 athletes were questioned about how aware they are about the impact of their actions on the people around them. Most of the athletes, 73%, indicated that they are aware of the impact of their actions on others. Twenty five percent were not sure and 3% noted that they are unaware of the implications of their actions on those around them.

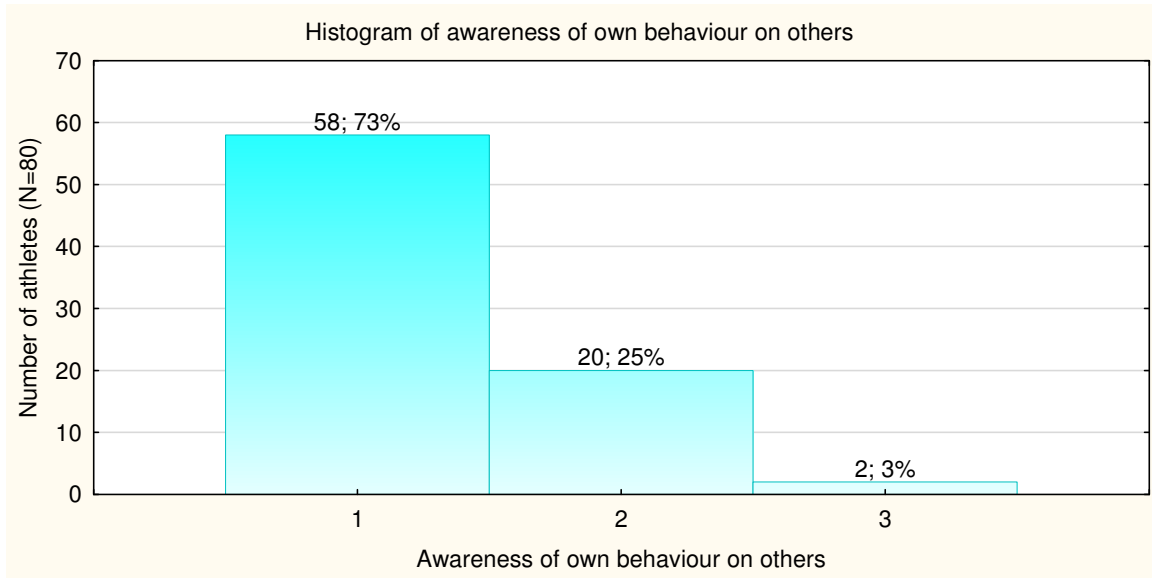


Figure 8.17 Awareness of own behaviour on others

### 8.3.10 Awareness of other people's behaviour on own sport performance

Athletes were asked how much they are aware of the influences that the behaviour of other people have on them. Seventy two percent of the athletes indicated that they are aware of the impact of other people on them in the sport context. Twenty five percent noted that they are not sure how much they are influenced by others and 3% indicated that they are unaware of the impact that other people have on them in the sport context.

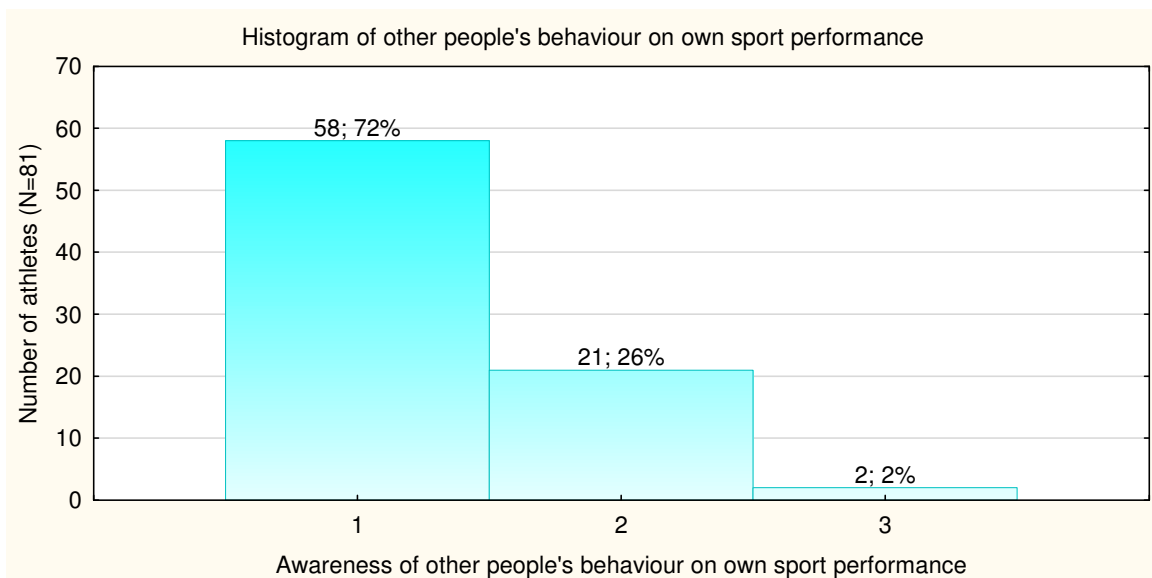


Figure 8.18 Awareness of other people's behaviour on own sport performance

### 8.3.11 Awareness of impact people have on each other

The Phase 2 athletes' awareness of how other people influence each other was put into question. This awareness is focused on interpersonal relationships. With 63%, most of the athletes indicated that they are aware of how other people influence and impact each other, 32% of the athletes were unsure about the impact that people generally have on each other. Five percent indicated that they are unaware of the impact people generally have on each other.

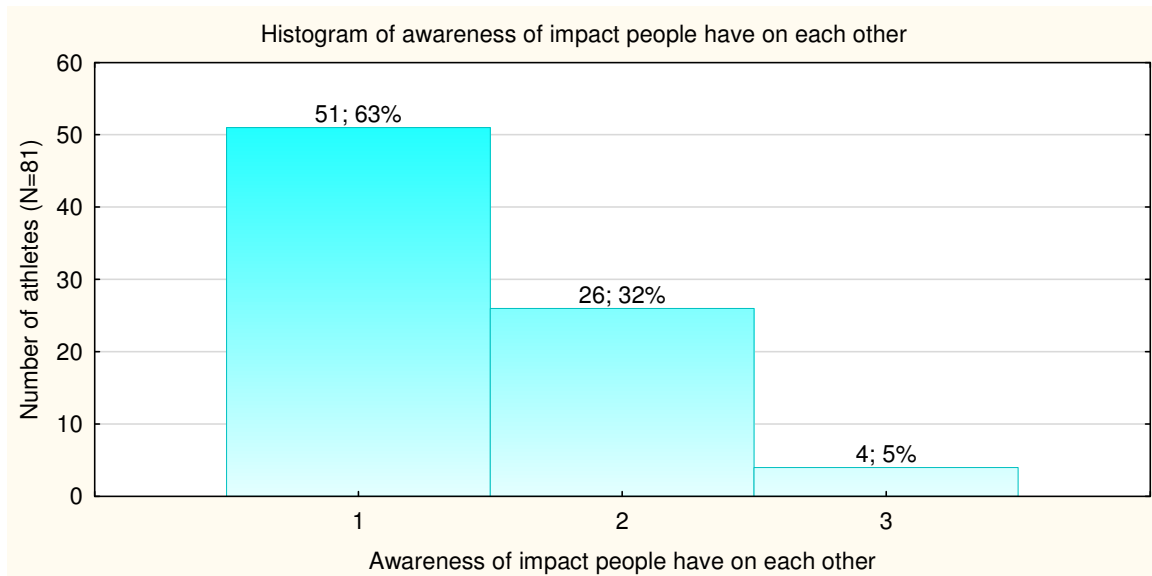


Figure 8.19 Awareness of impact people have on each other

### 8.3.12 Visualisation used to prepare mentally for events

Phase 1 athletes identified visualisation as a key habit for success in sport. Phase 2 athletes were asked if they use visualisation to help them prepare for events. Seventy one percent indicated that they do, 18% were unsure and 11% noted that they do not include visualisation in their preparation for events.

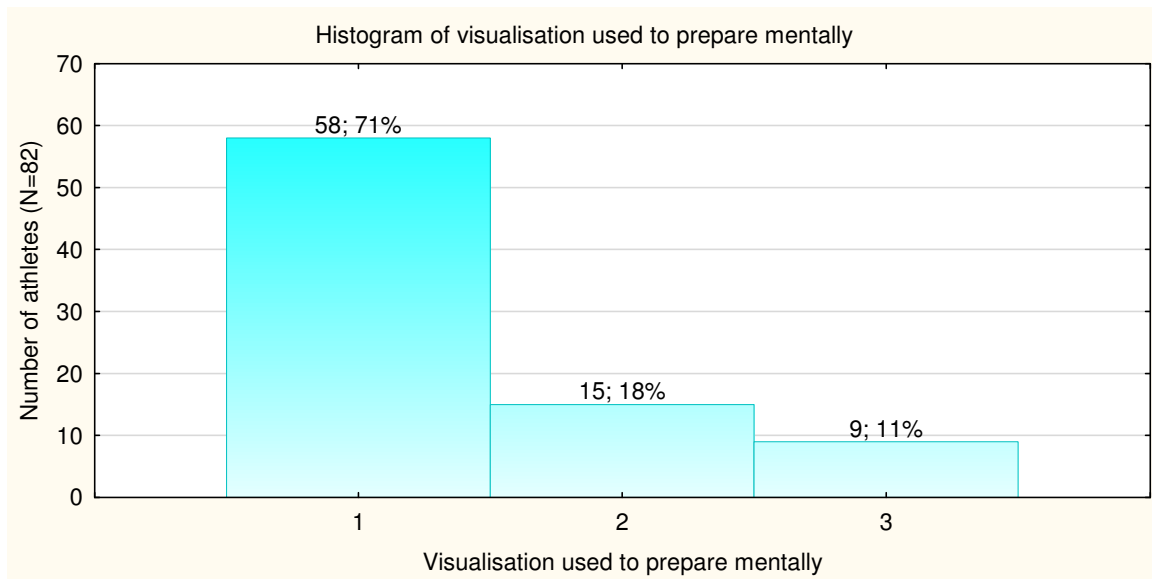


Figure 8.20 Visualisation used to prepare mentally

### 8.3.13 Values that are vital to being an elite athlete

The elite athletes in Phase 1 identified values they felt were/are important in their sport careers. They felt that these values are the most important values to have as an elite athlete. The values are commitment, honesty, balance and integrity. The athletes in Phase 2 were provided with a list of values that contained these four critical values as well as a few random values. The random values were identified by the researcher as possible important values to athletes with some not conducive to improvement of performance, such as the value of friendliness. By including random values in this list ensured that the Phase 2 athletes had the option to choose from a variety of values and could therefore have the option of choosing the critical values from among other values as identified by the elite athletes.

#### a. Values - National athletes

The national athletes ranked the values in order of what they felt were most to least important for an elite athlete to have. The value of commitment ranked by far the most important. Continuous improvement was ranked second, third was balance, and integrity was ranked fourth. A critical value, honesty, was ranked fifth.



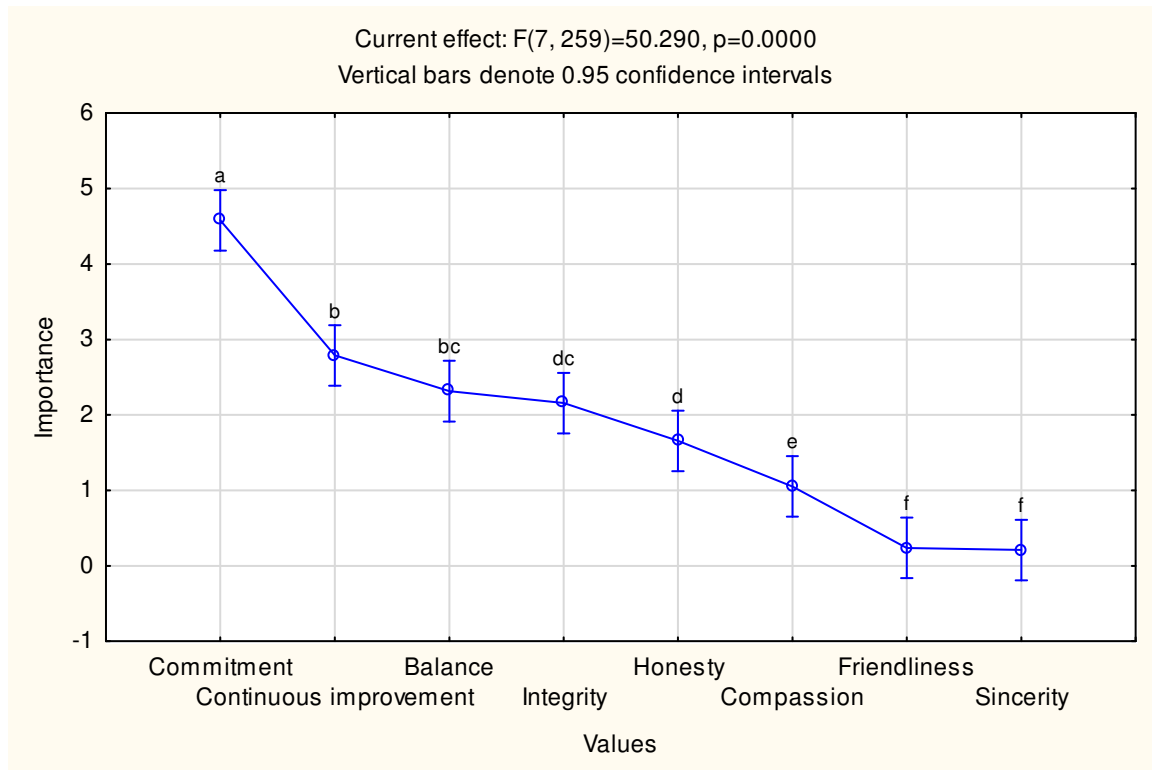


Figure 8.21 Values ranked by national athletes

Table 8.1 Descriptive statistics: Values ranked by national athletes

Value	N	Mean	Std. Deviation
Total	304	1.88	1.84
Balance	38	2.32	1.47
Commitment	38	4.58	0.83
Compassion	38	1.05	1.56
Continuous improvement	38	2.79	1.44
Friendliness	38	0.24	0.59
Honesty	38	1.66	1.46
Integrity	38	2.16	1.52
Sincerity	38	0.21	0.70

**b. Values: Provincial athletes**

The provincial athletes ranked the values in order of what they felt were most to least important for an elite athlete to have. Commitment also ranked as the most important value. The provincial athletes differed slightly in the ranking order to that of the national athletes by ranking balance as more important than continuous improvement, though the statistical difference between the second placed balance, third placed continuous improvement and fourth placed integrity is not significant. Honesty was ranked fifth.

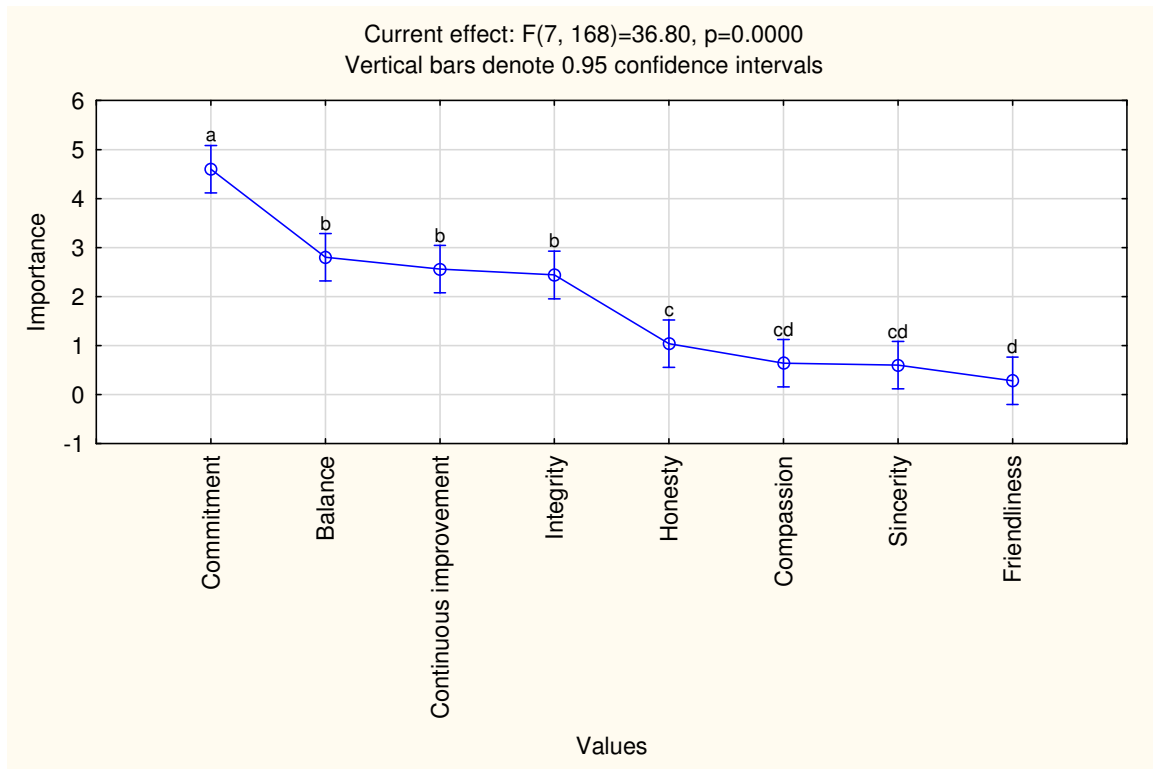


Figure 8.22 Values ranked by provincial athletes

Table 8.2 Descriptive statistics: Values ranked by provincial athletes

Value	N	Mean	Std. Deviation
Total	200	1.87	1.84
Balance	25	2.80	1.22
Commitment	25	4.60	0.91
Compassion	25	0.64	0.99
Continuous improvement	25	2.56	1.66

Value	N	Mean	Std. Deviation
Friendliness	25	0.28	0.54
Honesty	25	1.04	1.40
Integrity	25	2.44	1.61
Sincerity	25	0.60	1.04

**c. Values: Club athletes**

The club athletes also ranked commitment as an essential and most important value to have as an elite athlete. Continuous improvement was ranked second highest followed by integrity in third place and balance in fourth place. Honesty was ranked sixth.

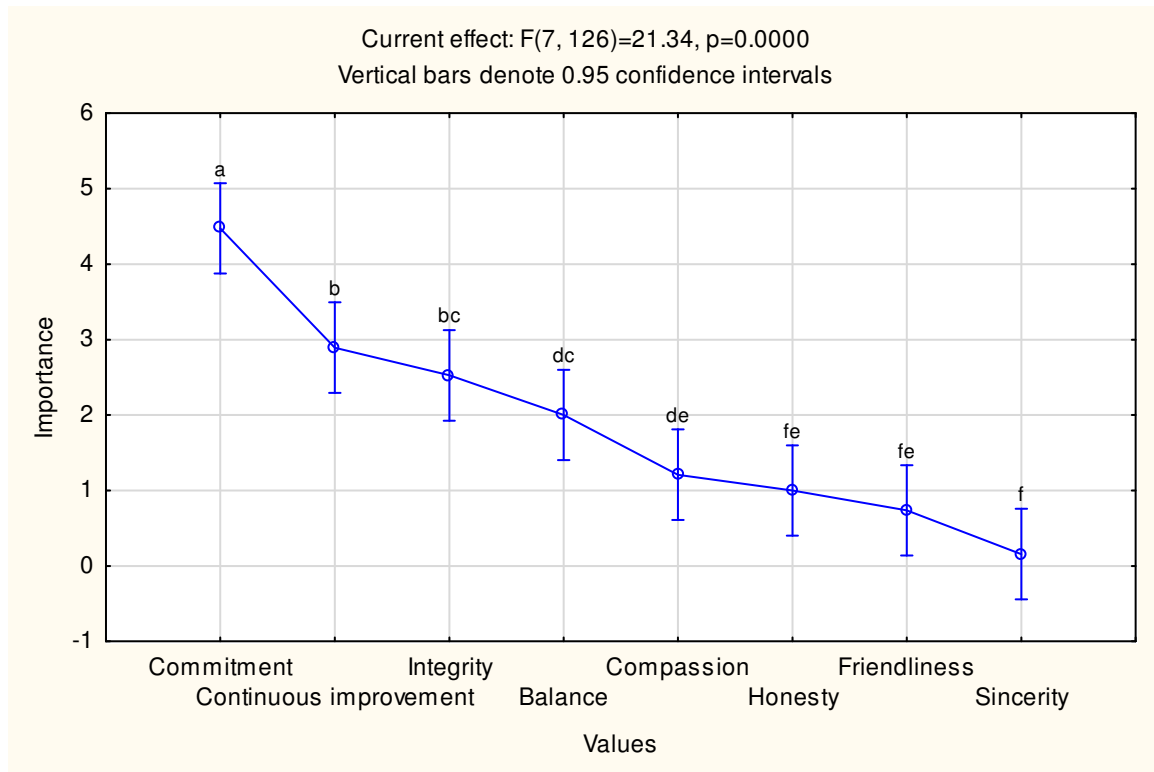


Figure 8.23 Values ranked by club athletes

Table 8.3 Descriptive statistics: Values ranked by club athletes

Value	N	Mean	Std. Deviation
Total	152	1.88	1.84
Balance	19	2.00	1.56
Commitment	19	4.47	0.96
Compassion	19	1.21	1.47
Continuous improvement	19	2.89	1.24
Friendliness	19	0.74	1.15
Honesty	19	1.00	1.56
Integrity	19	2.53	1.68
Sincerity	19	0.16	0.50

#### 8.3.14 Discussion

The biographical data and opinions and reflections of the Phase 2 athletes on the data obtained from Phase 1, provides the reader with an overview of the athletes that took part in Phase 2. Reviewing their biographical data provides information on the lifestyles and context of the Phase 2 athletes. These athletes vary in their hours of training. Some of them are training in excess of 20 hours per week whilst the majority of 85% trains less than 20 hours per week. Phase 1 athletes all trained in surplus of 20 hours per week. Phase 2 athletes indicated mixed results about their future participation in sport with a marginal 49% indicating that they will remain active in sport for more than 11 years after retirement from active play. Their subjective opinions and reflections on crucial concepts such as their habits, values and how and if they are aware of these, assist the reader to become partially acquainted with the mental make-up of the Phase 2 athletes and it provides a good background that can be kept in mind when studying the rest of the data.

Though the focus of the study was not about the frequency of parent involvement, it was noteworthy to enquire about the parental sport involvement of the Phase 2 athletes since the Phase 1 athletes mentioned that their parents' understanding and support, due to their own involvement in sport, contributed to their attainment of success. The Phase 2 athletes predominantly indicated that at least one of their parents were actively involved in sport as athletes, and this relates with the data obtained from the Phase 1 athletes of which the

majority indicated a prevalence of parental sport involvement. It is therefore possible that active parental involvement in a sport is not a key factor for sport success but that a parent's understanding through his/her own sport participation can play a significant and crucial supportive role in an athlete's life.

Some of the Phase 1 athletes reminisced about an athlete who they found to have inspired them to become successful athletes. Whilst exploring this and the concept of being a role model with Phase 1 athletes, the researcher became curious about the impact and value that a role model or excelling athlete might have on aspirant athletes. Only a slight majority of Phase 2 athletes indicated that they were inspired by another athlete to participate in and excel in their sport. This is interesting since the researcher expected the percentage of athletes being inspired by the performance of another athlete to be higher due to the experience of the Phase 1 athletes. The lower end percentage majority of athletes being inspired by another athlete correlates with Adriaanse and Crosswhite (2008), who in their gender specific study with 'sporty' and 'non-sporty' adolescent girls, found that predominantly (41%) of them chose family members as role models and only 8.4% of girls had role models in the sport domain.

The majority of Phase 2 athletes were of the opinion that hard work is the main predictor of success. This corresponds with the view of the Phase 1 athletes that hard work is a crucial habit for success in sport. The Phase 1 athletes incorporated hard work as a habit, emphasising effort and consistent preparations. They did not necessarily believe that they were/are the most talented in their sport but they believed that they had the capacity to work very hard on improving their skills and techniques. The Phase 2 athletes, to a large extent, agreed that talent is not the main predictor of success which indicates that they believe that their success is related to their work ethic and ability to improve their skills and techniques. This accords with Visser (2006) who noted that talent and ability is not fixed and can be developed.

Phase 2 athletes indicated a high presence of awareness of their habits, their surroundings, impact on others and others' impact on them. They indicated that they are mindful of how they behave and about the impact that people's behaviour have on each other. This heightened sense of awareness was present among the Phase 1 athletes as well. Being mindful in the sport context is important due to the interaction between team members and the athlete's incorporation of his/her own feelings to that of other people. Being mindful of own feelings and thoughts and having a non-judgmental mindset about that and the context the athlete finds him/herself in, will contribute to the athlete having more clarity about the demands of the situation and the manner in which he/she is going to react to it.

This notion is supported by Chong, Kee and Chaturvedi (2015) who explained that an individual experiences more clarity about what is happening internally (thoughts and emotions) and externally (surroundings) with the presence of a higher state of mindfulness. Instead of the athlete basing his/her reaction on how he/she always reacts, the mindful athlete will experience the situation in a non-judgmental manner and decide upon his/her course of action based on the demands of the situation. An individual is less likely to react in a habitual pattern of reactivity if the individual is in a state of mindfulness (Bishop et al., 2004). Wenk-Sormaz (2005) supports these findings and also suggests that through practicing meditation, an individual becomes aware that he/she has options as to how to behave in situations. Meditation thus gives the individual the opportunity to behave in a non-habitual way if that will be the best option in the situation.

The data obtained from the Phase 1 and 2 athletes regarding their awareness levels is encouraging, because it indicates that the athletes have incorporated a sense of awareness about a variety of aspects relating to their sport experiences. These athletes are aware of the importance of their mental preparation, their tendencies to behave in certain ways and how they influence others and how others influence them. The athletes are therefore not oblivious to their surroundings, their internal processes and their behaviour. Their awareness of their experiences is important for if they or their coaches need to alter behavioural or cognitive patterns. The findings of Chong et al. (2015) indicated that this awareness is important to weaken unwanted habits and the findings of Wenk-Sormaz (2005) proved that mindfulness can alter and provide flexibility to the decisions that athletes make on the sports field.

The majority of the Phase 2 athletes indicated the importance of visualisation in their preparations. This coincides with the views of the Phase 1 athletes who also noted that visualisation has become a habit to them. The importance of visualisation in the training regimes of the Phase 1 athletes is supported by Kremer and Moran (2008) and Murphy (2005) who indicated that visualisation is an important tool that can be used by athletes.

Another important finding among the Phase 1 and 2 athletes is the importance of certain core values. Athletes from both phases identified commitment as a core value for the attainment of success. For them it is important to be orientated towards achieving the best results that they can and that implies having the value of being committed to work towards their goals. This value relates to competency and reflects the athletes valuing personal improvements and their dedication to achieve the desired results (Sukys & Jansoniene, 2012).

The differences in acquired values among athletes from different levels of participation has not been researched before and it is interesting to note that this study was presented with similarities among the three levels of participation. All three levels ranked the values of commitment, balance, continuous improvement, and integrity as the most important. What is interesting to note is that the critical value of honesty, as identified by the Phase 1 athletes, was ranked among the bottom four values by the Phase 2 athletes. Phase 2 athletes also ranked social values such as being friendly, sincere and compassionate among the less important values.

It is important to note though, that the athletes were asked to rate the values in order of importance relating to the attainment of success. Their responses therefore did not indicate that they do not value social values as is evident from their data obtained in the Portrait Values Questionnaire and Value Checklist that are discussed later in this study. Kavussanu (2008) stated that an athlete's behaviour in the sport context reflects an athlete's character and that an athlete's behaviour can in return have positive or negative influences on opponents. This refers to the pro-social behaviour of athletes as suggested by Stupuris et al. (2013) and is likely to be influenced by the athletes' values.

## 8.4 List of measuring instruments

- The Shadowmatch™ Worksheet is an internet based worksheet that is used to identify and help understand the habits of individuals and groups. The 19 habits that the worksheet assesses include the following: propensity to own, propensity to hand-off, discipline, to simplify, routine, problem solving, innovation, people positive behaviour, habit of using conceptual abilities, responsiveness, resilience, individual inclination, team inclination, propensity to handle frustration, propensity to change, conflict handling, altruism, self-confidence, leadership and self-motivation.

The point values on the Shadowmatch™ Worksheet are as follows (De Villiers, 2009):

- Below 30: The type of behaviour is not established well enough to be considered a habit.
- 30 - 50: The type of behaviour is relatively well established and is considered a habit, though the type of behaviour might function selectively, depending on the situation an individual finds him/herself in.
- 50-70: The type of behaviour is well established as a habit.
- 70+: The type of behaviour is a strong habit.

The Five Facet Mindfulness Questionnaire (FFMQ) is a 39-item self-report mindfulness questionnaire that assesses an individual's tendency towards mindful living. A five-point Likert scale ranging from one (never or rarely) to five (very often or always true) is used to measure the following themes: observe, describe, act with awareness, non-judging of inner experience and non-reactivity to inner experience. The maximum score that can be obtained is 40, with the exception of the non-reactivity to inner experience construct where the maximum score is 35.

- The Portrait Values Questionnaire (PVQ) exists of 40 short verbal portraits that describe the goals, aspirations and wishes of an individual. The PVQ scores 10 different value scales that consist of three to six items. The 10 basic human values assessed in the PVQ are: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity and security.
- The Value Checklist assists an individual to identify his/her values. Athletes are required to identify their values from a list and thereafter to identify their top five values. The values included in the Value Checklist are:

Accountability, balance, beauty, concern for others, character, commitment, compassion, comradeship, conformity, courage, creativity, dedication, excellence, faith, fairness, family, freedom, generosity, genuineness, family health, friendship, fun, happiness, harmony, health, honesty, honor, humor, humility, individuality, integrity, kindness, knowledge, loyalty, perfection, perseverance, professionalism, respect for others, responsibility, security, self-awareness, self-respect, serenity, service to others, sportsmanship, tolerance and wealth.

- The structured questionnaire consisted of questions developed and compiled after the analysis of the data obtained in the qualitative Phase 1. Questions were drafted and presented in normal question format as well as a Likert scale. The questionnaire was a self-completion questionnaire whereby the athletes completed the questionnaire by themselves.

## 8.5 Statistical analysis

Cronbach alpha scores were calculated to evaluate the internal consistency of the Five Facet Mindfulness Questionnaire (FFMQ). A Cronbach alpha of 0.7 indicates an acceptable level of internal consistency (Nunnally, 1978, as cited in Finchilescu, 2009). This study was interested in the athletes' scores on the individual subscales of the FFMQ and therefore the Cronbach alpha scores of the five subscale items have been calculated separately. All the



subscales received a Cronbach alpha score of over 0.7, which illustrates that the subscales were very reliable:

1. Observing - This subscale consisted of eight items ( $\alpha = 0.763$ ;  $n = 82$ ).
2. Describing - This subscale consisted of eight items ( $\alpha = 0.874$ ;  $n = 82$ ).
3. Non-judging of inner experience - This subscale consisted of eight items ( $\alpha = 0.820$ ;  $n = 82$ ).
4. Non-reactivity to inner experience - This subscale consisted of seven items ( $\alpha = 0.708$ ;  $n = 82$ ).
5. Acting with awareness - This subscale consisted of eight items ( $\alpha = 0.871$ ;  $n = 82$ ).

Cronbach alpha scores were calculated to evaluate the internal consistency of the Portrait Values Questionnaire (PVQ). This study was interested in the athletes' scores on the individual subscales of the PVQ. The Cronbach alpha scores of the 10 subscale items have been calculated separately and it must be noted that these Cronbach scores are not based on the centered scores:

1. Self-direction - This subscale consisted of four items ( $\alpha = 0.509$ ;  $n = 82$ ).
2. Power - This subscale consisted of three items ( $\alpha = 0.577$ ;  $n = 82$ ).
3. Universalism - This subscale consisted of six items ( $\alpha = 0.680$ ;  $n = 82$ ).
4. Achievement - This subscale consisted of four items ( $\alpha = 0.778$ ;  $n = 82$ ).
5. Security - This subscale consisted of five items ( $\alpha = 0.660$ ;  $n = 82$ ).
6. Stimulation - This subscale consisted of three items ( $\alpha = 0.700$ ;  $n = 82$ ).
7. Conformity - This subscale consisted of four items ( $\alpha = 0.573$ ;  $n = 82$ ).
8. Tradition - This subscale consisted of four items ( $\alpha = 0.472$ ;  $n = 82$ ).
9. Hedonism - This subscale consisted of three items ( $\alpha = 0.717$ ;  $n = 82$ ).
10. Benevolence - This subscale consisted of four items ( $\alpha = 0.657$ ;  $n = 82$ ).

Compensating for the low Cronbach scores, was the centering process of the PVQ. The scores of the PVQ were computed by computing every athlete's mean score across all 40 value items. This was called MRAT (mean centered score). The scores of each of the 10 values were then centered around that athlete's MRAT. Reliability testing is not conducted on centered scores due to the centered scores already being computed to validate and

prioritise each athlete's value scores. There are substantial individual differences in tendencies to use value scales. Many people, to varying degrees, tend to say that almost all values are important. What influences attitudes and behaviour is not the importance score of the value but the relative importance of the set of relevant values -i.e., a person's value priorities. Centering converts absolute scores into value priorities S. Schwartz (personal communication, May 30, 2016). P-values were computed and used to make statistical inferences of the data retrieved from each value subscale.

The validation of the Shadowmatch™ Worksheet has been tested in an experimental design in South Africa (De Villiers, 2009). This validation study found that Shadowmatch™ discriminates the presence of habits embedded in an individual's behaviour with a significance of 0.01. The importance of this is that Shadowmatch™ thus provides a 99% probability of discriminating between the different habits within an individual's behavioural framework. It is also significant that the full set of possible results for the worksheet has a perfect normal distribution curve. Descriptive statistics were used to illustrate the strength of habits among the national-, provincial- and club athletes.

The results of the Value Checklist and structured questionnaire were not validated or checked for reliability since the athletes subjectively identified values that they thought to be important in their lives and gave their opinions on questions posed to them in the questionnaire. The purpose of the checklist and structured questionnaire was to establish opinions and awareness of values, habits and mindfulness in the athletes' lives.

Summary statistics were reported as frequencies (with percentages) in histograms for categorical data, and means, medians and standard deviations for ordinal/continuous measurements. Reliability of the measurement instruments used in this study was evaluated by calculating and reporting Cronbach's alphas. Value importance scores and habit strengths were compared using mixed model repeated measures, ANOVA and Fisher least significant difference (LSD) post hoc testing. Comparisons between national-, provincial- and club level were done using one-way ANOVA and Fisher LSD post hoc testing. Normality assumptions were checked by inspecting residual normal probability plots. Homogeneity of variance was tested using Levene's test. The assumptions were found to be acceptable throughout. Relationships between scale scores were tested using Pearson correlation analysis.

## 8.6 Habits - Results of the Shadowmatch™ Worksheet

The Shadowmatch™ Worksheet was used to identify and plot the significance and occurrence of habits in the athletes' lives. This section of the study will illustrate the strength of various habits among athletes participating on different levels of competitiveness.

### 8.6.1 The habit profile of Phase 2 athletes

The habit profile of Phase 2 athletes indicates that the five strongest habits among the group were: Responsiveness, discipline, resilience, self-confidence and propensity to own. Among these five habits, only responsiveness is embedded as a well established habit with a score of 52,4. The athletes will generally find it easy to engage with life in this manner and incorporate being responsive as a way of life. The other four habits scored in the high end of the 40's indicating that those habits are relatively well established.

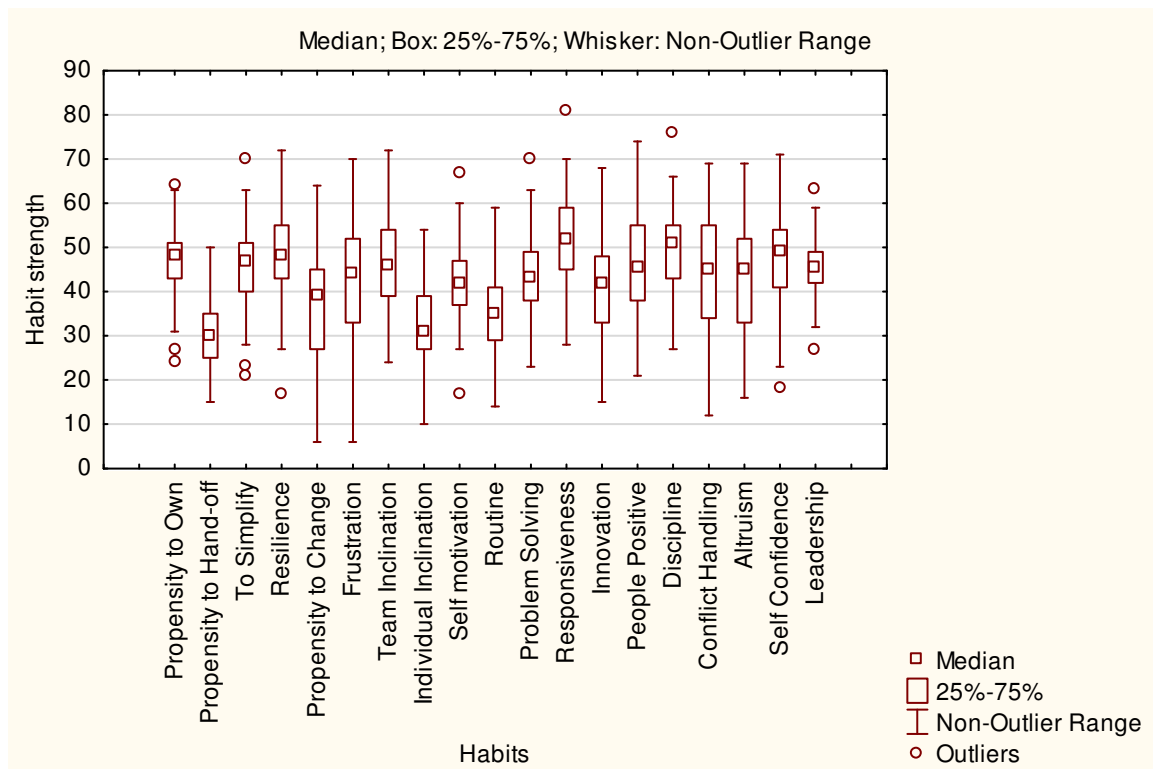


Figure 8.24 Box Plot of habits of Phase 2 athletes

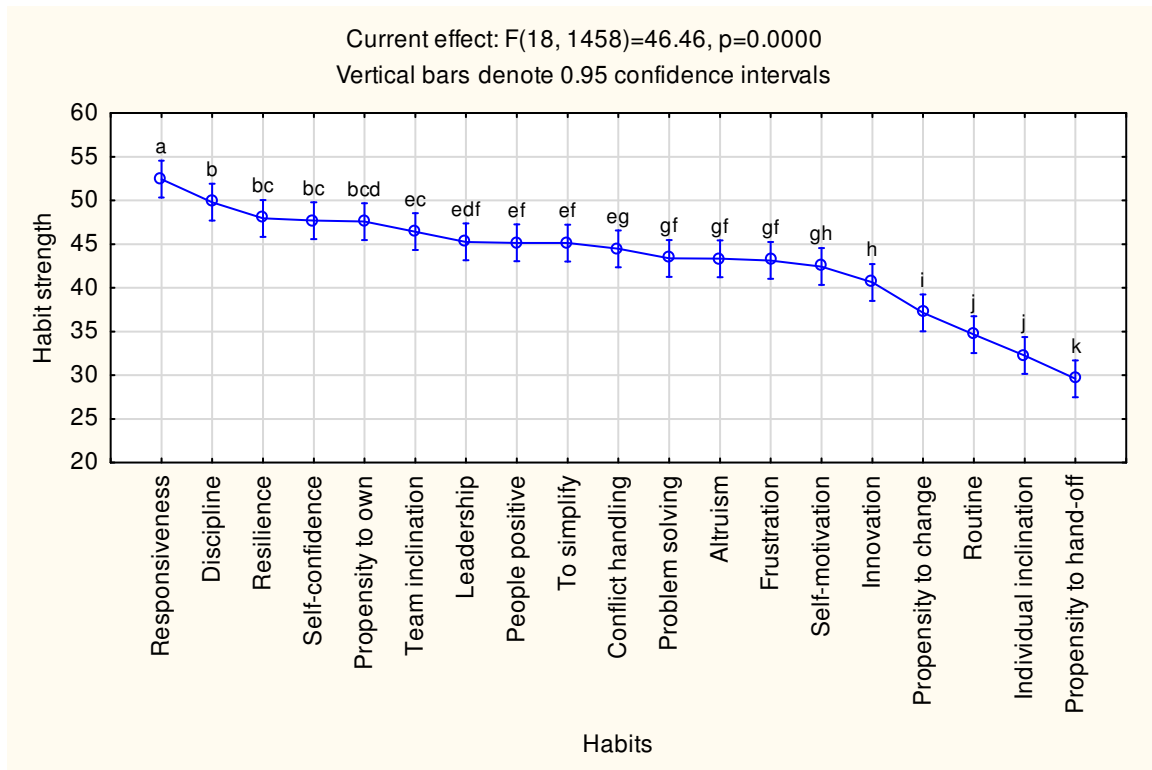


Figure 8.25 Habit profile of all Phase 2 athletes

Table 8.4 Descriptive statistics: Shadowmatch™ Worksheet - All athletes

Habit	N	Mean	Std. Deviation
Total	1558	43.07	11.28
Responsiveness	82	52.44	9.52
Discipline	82	49.80	8.96
Resilience	82	47.94	9.96
Self-confidence	82	47.70	9.98
Propensity to own	82	47.57	7.77
Team inclination	82	46.43	9.96
Leadership	82	45.27	6.28
People positive	82	45.15	11.46
To simplify	82	45.13	9.08
Conflict handling	82	44.46	12.25
Problem solving	82	43.37	8.37

Habit	N	Mean	Std. Deviation
Altruism	82	43.33	12.14
Propensity to handle frustration	82	43.12	11.49
Self-motivation	82	42.44	8.17
Innovation	82	40.63	10.56
Propensity to change	82	37.15	12.15
Routine	82	34.65	8.86
Individual inclination	82	32.24	7.93
Propensity to hand-off	82	29.60	7.23

## 8.6.2 The habit profiles of Phase 2 athletes according to level of participation

### a. National athletes

As can be seen from figure 8.26, there are four habits that were identified as well established habits with scores above 50. These are responsiveness (55), discipline (51), resilience (51) and self-confidence (51). Propensity to hand-off was the weakest type of identified behaviour (28).

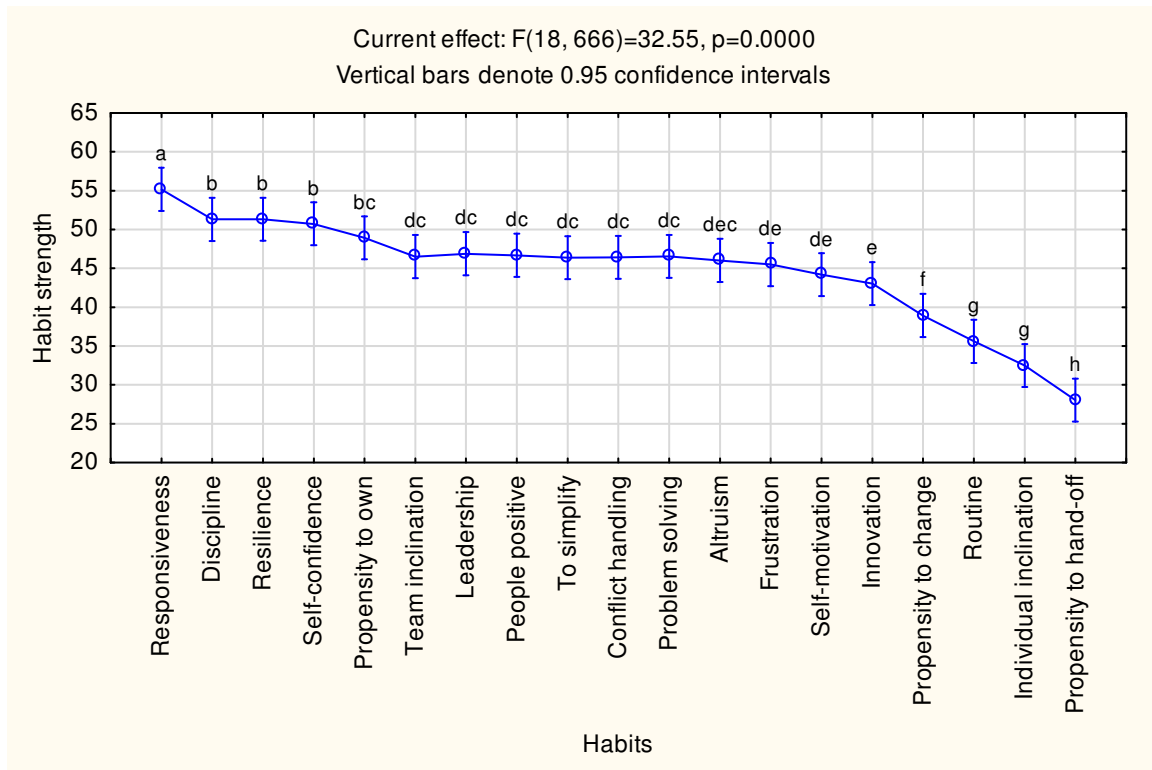


Figure 8.26 Habit profile of national athletes

Table 8.5 Descriptive statistics: Shadowmatch™ Worksheet scores - National athletes

Habit	N	Mean	Std. Deviation
Total	722	44.78	10.81
Responsiveness	38	55.18	7.77
Discipline	38	51.32	8.69
Resilience	38	51.34	8.72
Self-confidence	38	50.74	9.36
Propensity to own	38	48.95	6.53
Team inclination	38	46.53	9.75
Leadership	38	46.89	5.76
People positive	38	46.68	9.76
To simplify	38	46.39	8.47
Conflict handling	38	46.42	9.76
Problem solving	38	46.55	7.45



Habit	N	Mean	Std. Deviation
Altruism	38	46.03	10.77
Propensity to handle frustration	38	45.50	9.55
Self-motivation	38	44.21	8.12
Innovation	38	43.05	8.41
Propensity to change	38	38.95	10.83
Routine	38	35.61	9.71
Individual inclination	38	32.50	7.59
Propensity to hand-off	38	28.05	5.77

**b. Provincial athletes**

The provincial athletes identified two values that are well established in their lives. Responsiveness being their strongest habit (53) and discipline the second strongest (51). Propensity to hand-off was also their weakest type of behavioural pattern (30).

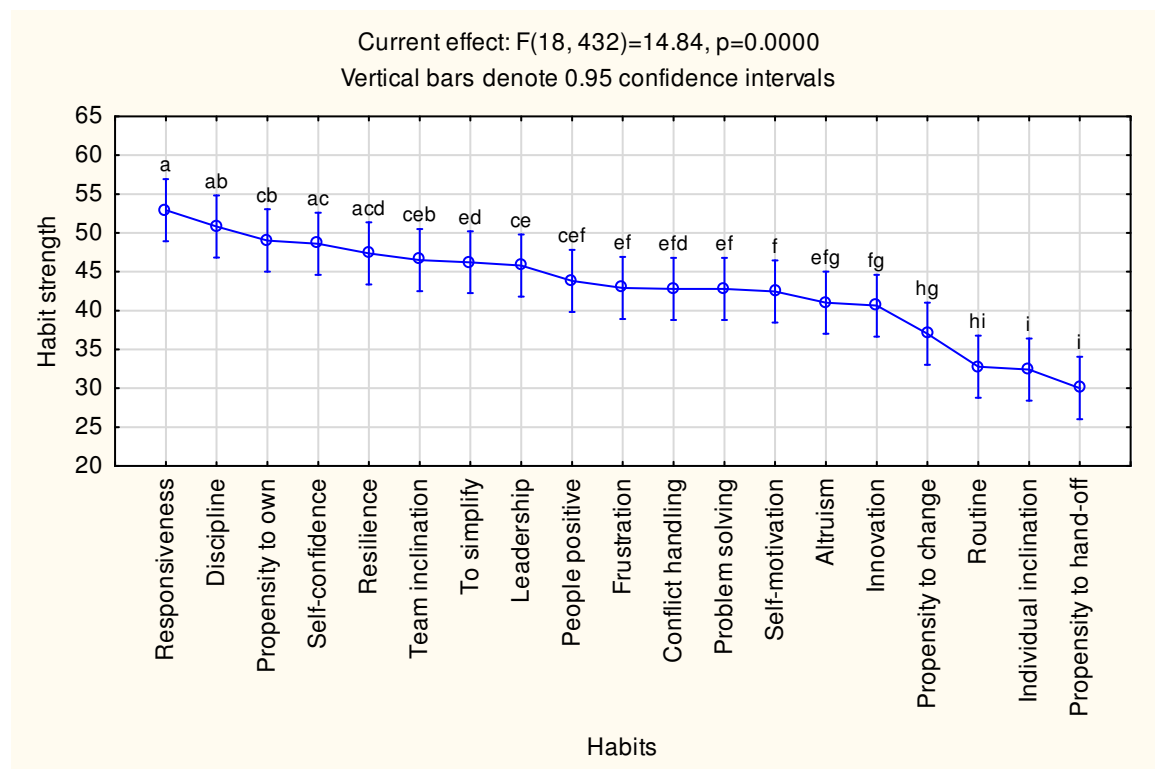


Figure 8.27 Habit profile of provincial athletes

Table 8.6 Descriptive statistics: Shadowmatch™ Worksheet scores - Provincial athletes

Habit	N	Mean	Std. Deviation
Total	475	42.95	11.70
Responsiveness	25	52.92	10.95
Discipline	25	50.84	8.47
Resilience	25	47.36	9.12
Self-confidence	25	48.60	8.41
Propensity to own	25	49.04	8.09
Team inclination	25	46.52	9.81
Leadership	25	45.80	5.80
People positive	25	43.84	12.75
To simplify	25	46.24	10.00
Conflict handling	25	42.80	11.90
Problem solving	25	42.80	7.54
Altruism	25	41.04	12.95
Propensity to handle frustration	25	42.92	11.86
Self-motivation	25	42.48	8.38
Innovation	25	40.64	13.44
Propensity to change	25	37.04	14.73
Routine	25	32.80	7.82
Individual inclination	25	32.40	7.95
Propensity to hand-off	25	30.04	7.89

### c. Club athletes

The club athletes did not identify any habits that are well established in their lives. All their habits scored less than 40 in strength. Their profile indicates that they have a large variety of behaviour types that are relatively well established and function as habits, though these habits function rather selectively. This means that the athletes will tend to engage in these habits depending on the situational context. Responsiveness was identified as their



strongest habit (46) and their weakest habit was identified as individual inclination (31). The order of their habit strengths differed considerably from the national- and provincial athletes.

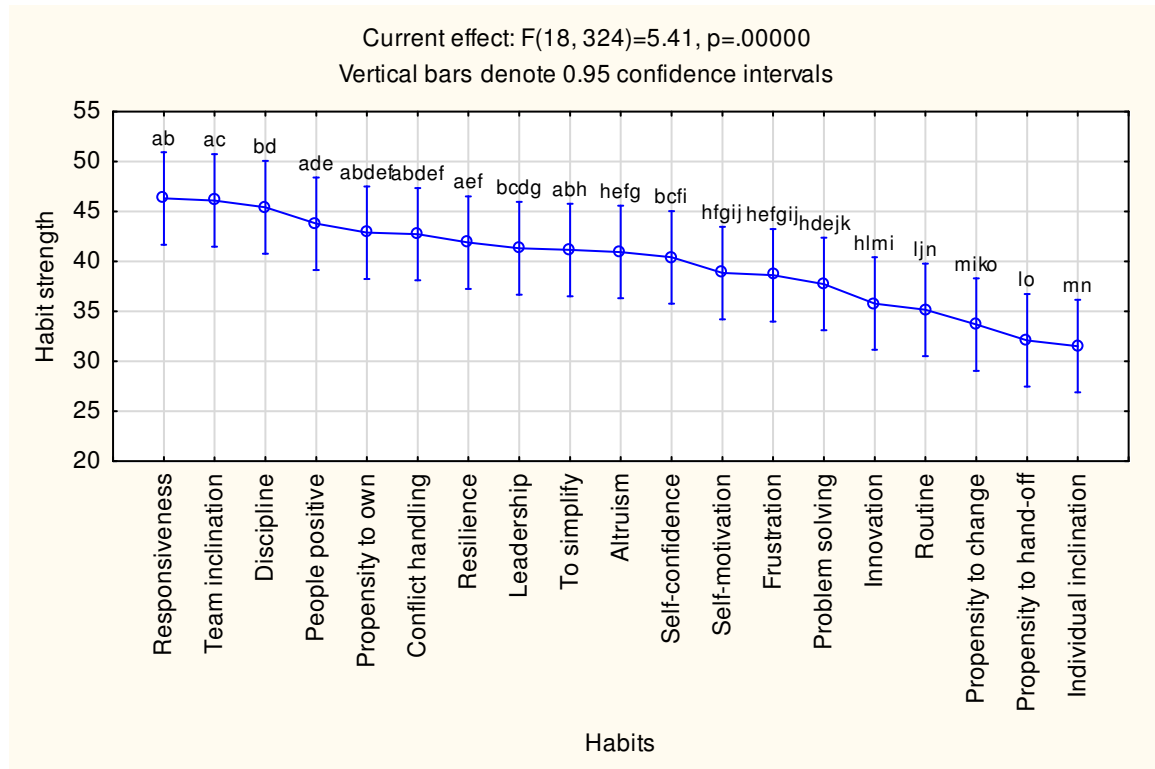


Figure 8.28 Habit profile of club athletes

Table 8.7 Descriptive statistics: Shadowmatch™ Worksheet scores - Club athletes

Habit	N	Mean	Std. Deviation
Total	361	39.81	10.93
Responsiveness	19	46.32	8.23
Discipline	19	45.42	9.14
Resilience	19	41.89	10.74
Self-confidence	19	40.42	9.84
Propensity to own	19	42.89	8.16
Team inclination	19	46.11	11.06
Leadership	19	41.32	6.48
People positive	19	43.79	13.01
To simplify	19	41.16	8.26

Habit	N	Mean	Std. Deviation
Conflict handling	19	42.74	16.60
Problem solving	19	37.74	8.39
Altruism	19	40.95	13.13
Propensity to handle frustration	19	38.63	13.61
Self-motivation	19	38.84	7.15
Innovation	19	35.79	8.86
Propensity to change	19	33.68	10.72
Routine	19	35.16	8.42
Individual inclination	19	31.53	8.92
Propensity to hand-off	19	32.11	8.46

### 8.6.2.1 Discussion

The responses of the athletes indicated preferences for habits of which the habit strengths measured distinctly different across the level of participation. Overall, the habit of responsiveness was the strongest habit for all three performance levels. A case study conducted with a provincial team of junior golfers who became national champions, showed that responsiveness, self-confidence, resilience, discipline and simplification were identified as the top five habits among that specific team of golfers (Bezuidenhout, 2009). This correlates with the findings in this study where the strongest habits among the national athletes were the habits of responsiveness, discipline, resilience and self-confidence. These habits are well developed habits among the national athletes. Responsiveness and discipline were indicated as well developed habits among the provincial athletes and this concurs with those of the national athletes. The club athletes had no habits that were established as strong and well developed habits, though their strongest habit was identified as the habit of responsiveness.

An extensive academic search has shown that there are no existing studies where the habits of athletes performing on different levels have been identified and measured. The data pertaining to the habits of athletes functioning on different levels of participation that was obtained from this study can therefore not be compared to relevant existing research or available literature.

### 8.6.3 Habit difference among level of participation

There were 12 habits where a significant difference among the athletes from the three levels of participation occurred. These habits are propensity to own, propensity to hand-off, to simplify, resilience, frustration, self-motivation, problem solving, responsiveness, innovation, self-confidence and leadership. The differences are illustrated in Figures 8.29-8.39 and discussed.

#### a. Propensity to own

The habit of propensity to own seems to be established relatively well among the national- and provincial athletes. There is a marked difference between these two levels of participation and the club athletes who scored less in habit strength. Although the strengths of all three groups fall within the 40's, the difference in the habit strength is statistically significant with  $p < 0.01$  (Figure 8.29).

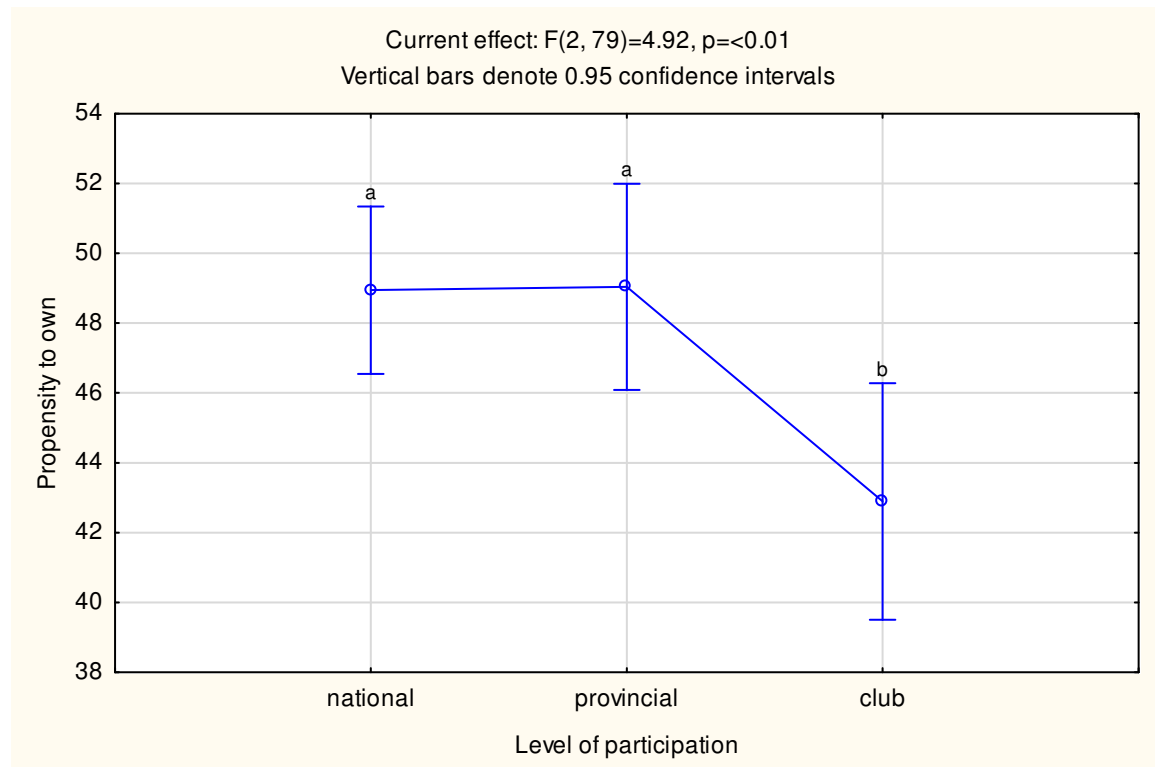


Figure 8.29 Propensity to own

The Fisher Least Significant Difference Test (LSD) was performed as a Post Hoc test to assess for probabilities. The habit of propensity to own was stronger among the national athletes compared to the club athletes with  $p < 0.0$ . This habit also measured stronger between the provincial athletes compared to the club athletes with  $p < 0.01$ . There was no statistically significant difference between the national- and provincial athletes:

Table 8.8 LSD test: Propensity to own

Level of participation	National M=48.95	Provincial M=49.04	Club M=42.90
National		0.96	0.00
Provincial	0.96		0.01
Club	0.00	0.01	

**b. To simplify**

The habit of simplification measured as a relatively well established habit among all three different levels of participation with habits strength scores in the 40's. Though there does not seem to be a strong statistically difference among the three levels, there does seem to be a tendency with the national athletes scoring slightly higher than the club athletes on the strength of this habit with  $p < 0.10$ .

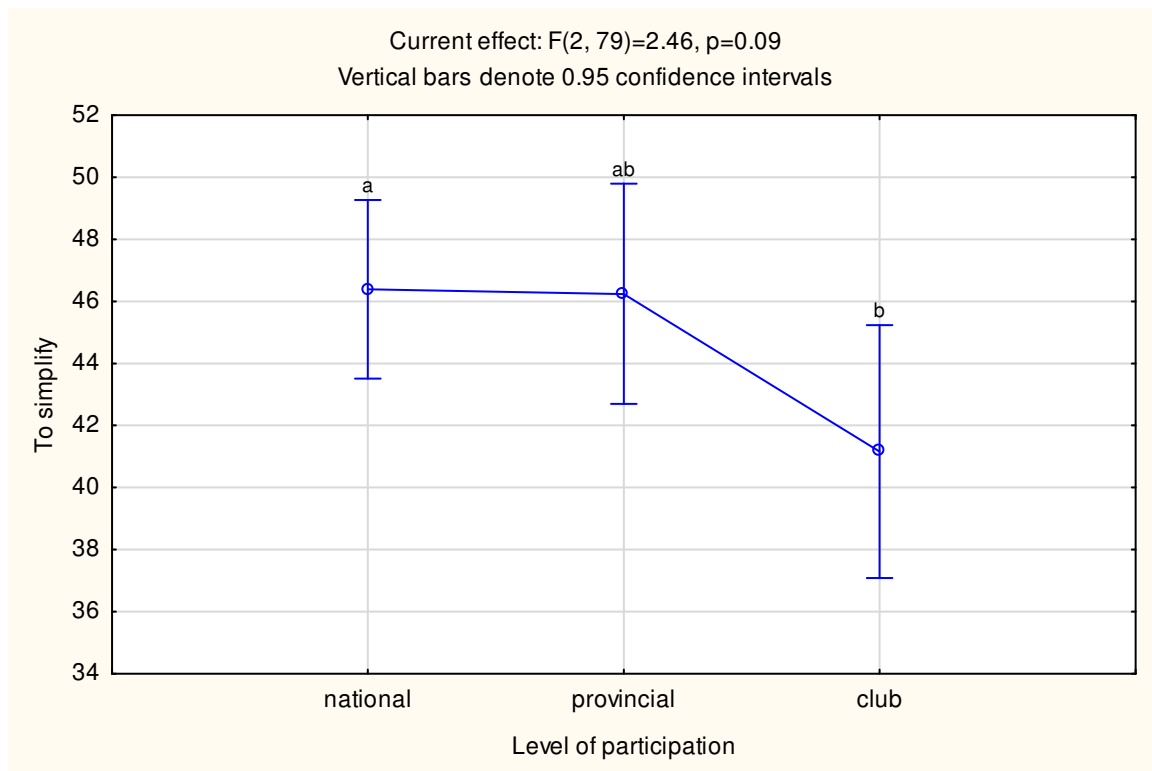


Figure 8.30 To simplify

The LSD Post Hoc test indicated a slight statistical difference among the national- and club athletes with  $p < 0.05$ . The habit strength of the provincial athletes showed no statistical significant difference when compared to the national- and club athletes:

Table 8.9 LSD test: To simplify

Level of participation	National M=46.40	Provincial M=46.24	Club M=41.16
National		0.95	0.04
Provincial	0.95		0.06
Club	0.04	0.06	

### c. Resilience

The habit of resilience showed a clear decline in habit strength between the three levels of participation. It is developed as a strong habit among the national athletes with a score of over 50. Though the habit of being resilient is indicated as a relatively well formed habit among the club athletes, there is a statistical significant difference with  $p < 0.01$ .

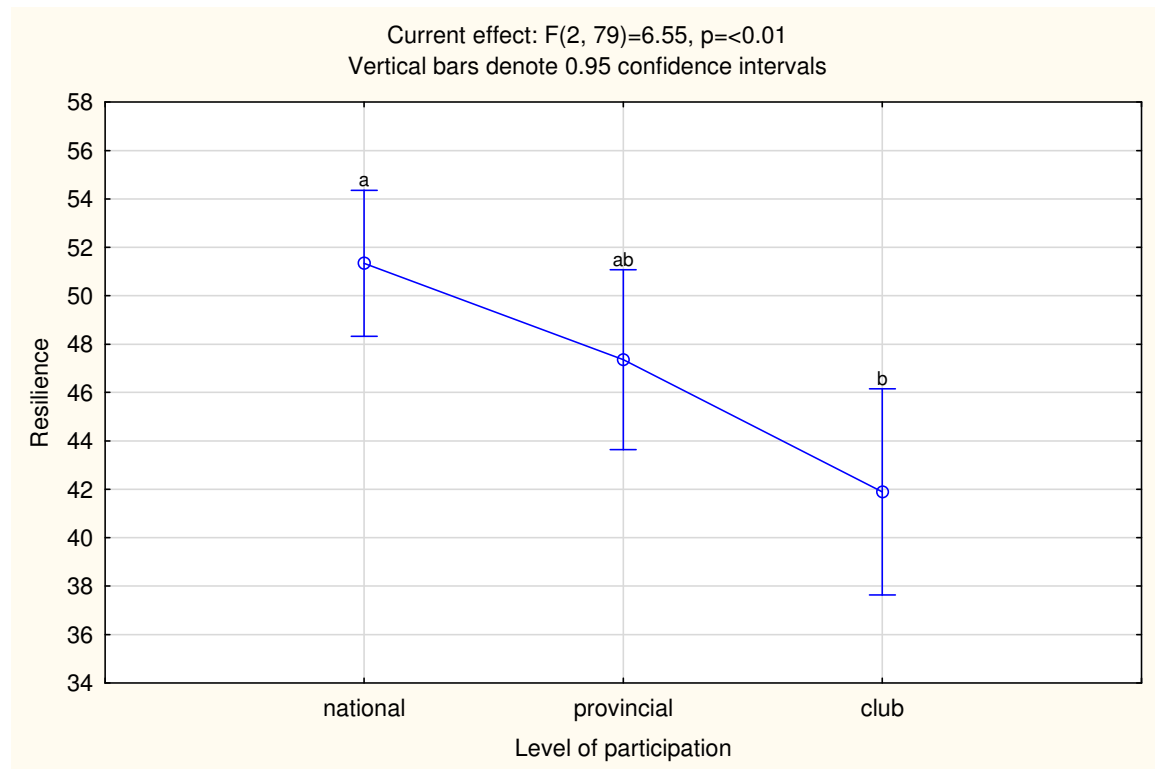


Figure 8.31 Resilience

The LSD Post Hoc test indicated a statistical difference among the national- and club athletes with  $p=0.00$ . The habit strength of the provincial athletes showed no statistical significant difference when compared to the national- and club athletes:

Table 8.10 LSD test: Resilience

Level of participation	National M=51.34	Provincial M=47.36	Club M=41.90
National		0.10	0.00
Provincial	0.10		0.06
Club	0.00	0.06	

#### d. Propensity to handle frustration

Though there is no statistical significant difference between the three levels when the strength of the habit of dealing with frustration is measured, there seems to be a decline in habit strength with the national athletes having a habit strength in the mid 40's, the provincial athletes in the low 40's and the cub athletes in the high 30's,  $p=0.10$ .

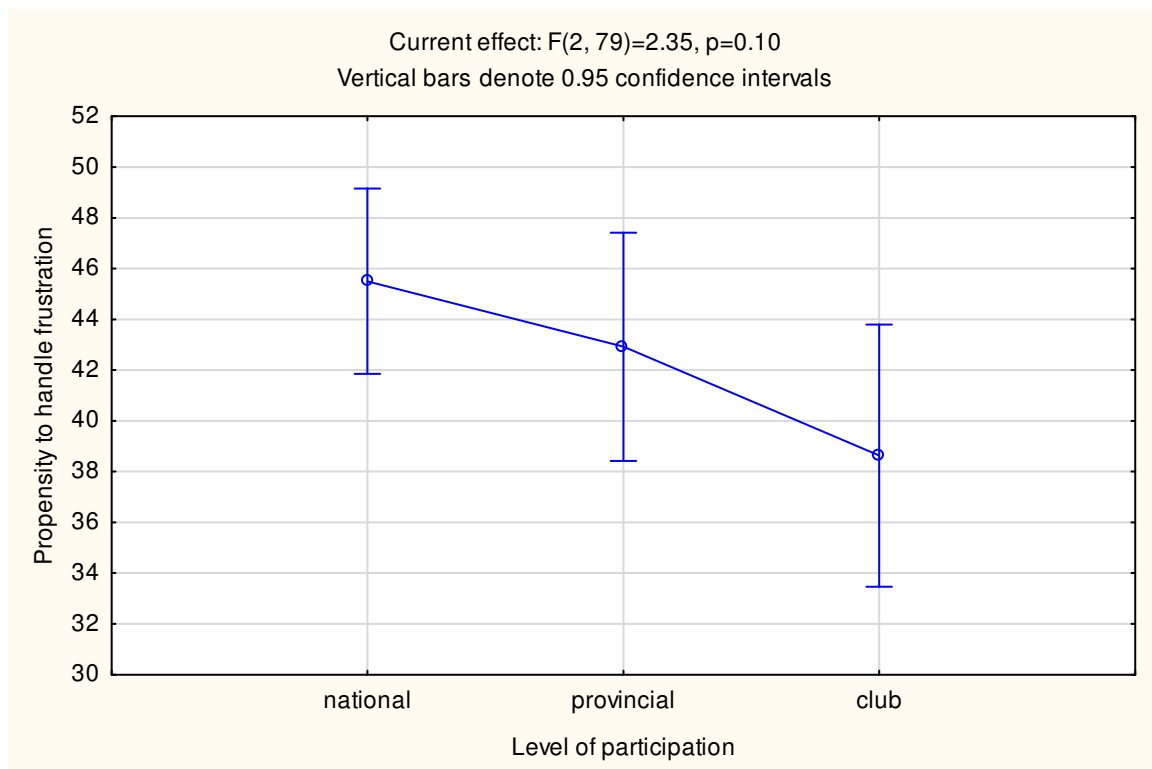


Figure 8.32 Propensity to handle frustration

The LSD Post Hoc test indicated a slight statistical difference among the national- and club athletes with  $p < 0.05$ . The habit strength of the provincial athletes showed no statistical significant difference when compared to the national- and club athletes:

Table 8.11 LSD test: Propensity to handle frustration

Level of participation	National M=45.50	Provincial M=42.92	Club M=38.63
National		0.38	0.03
Provincial	0.38		0.22
Club	0.03	0.22	

### e. Self-motivation

The habit of self-motivation differed slightly significantly among the three levels with  $p < 0.10$ . There seems to be a tendency that the habit strength declined from national-, to provincial-, to club level.

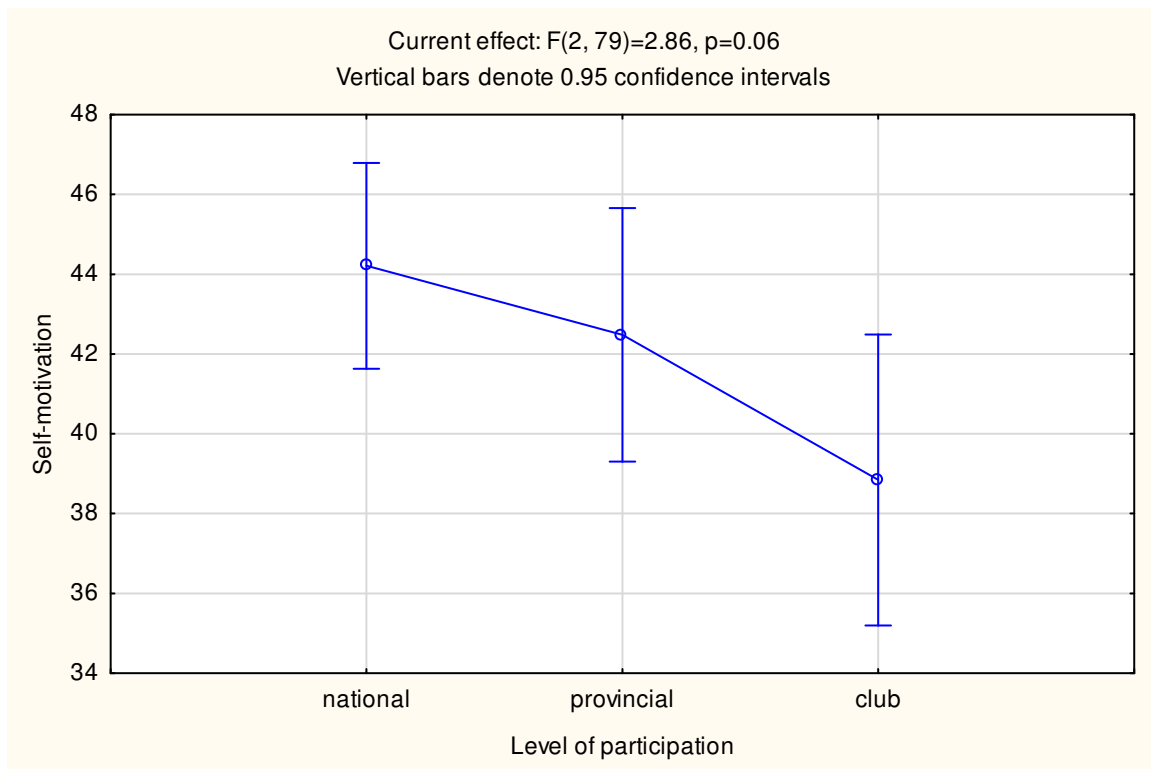


Figure 8.33 Self-motivation

The LSD Post Hoc test indicated a statistical significant difference among the national- and club athletes with  $p < 0.05$ . The habit strength of the provincial athletes showed no statistical significant difference when compared to the national- and club athletes:

Table 8.12 LSD test: Self-motivation

Level of participation	National M=44.21	Provincial M=42.48	Club M=38.84
National		0.40	0.02
Provincial	0.40		0.14
Club	0.02	0.14	

### f. Problem solving

The habit strength of problem solving reflects a statistical significant difference among the three levels of participation with  $p < 0.01$ .

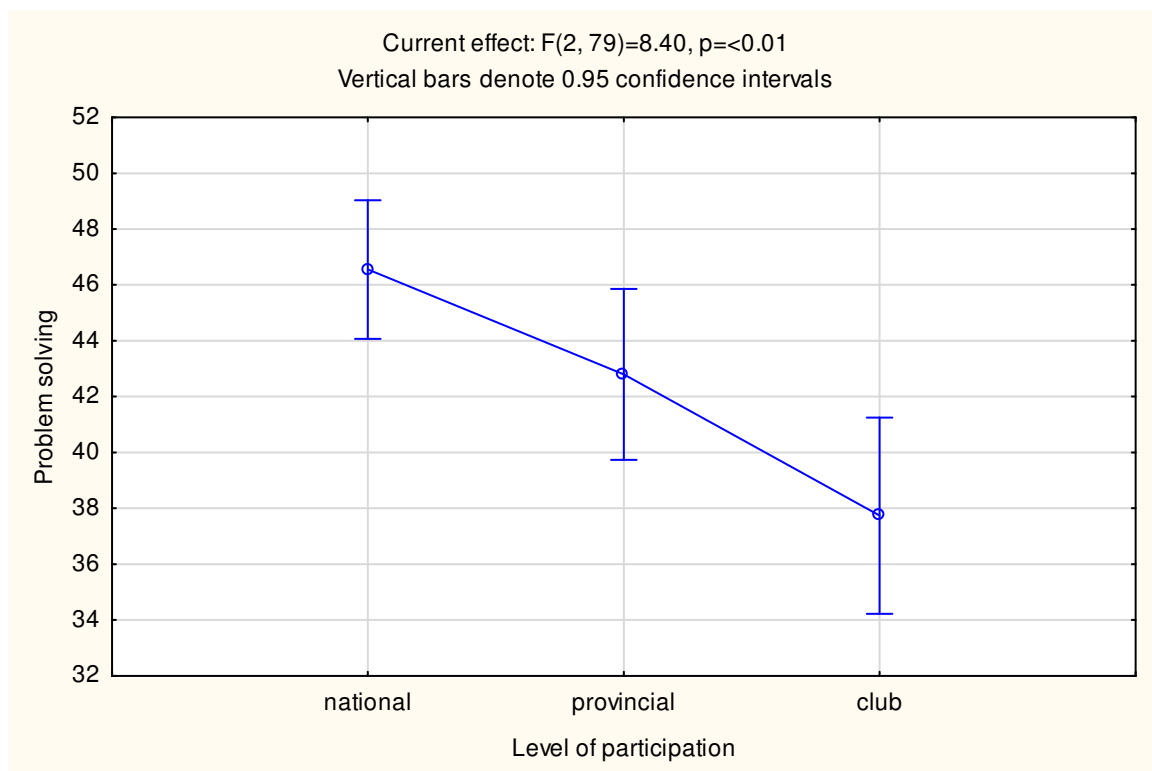


Figure 8.34 Problem solving

The LSD Post Hoc test indicated statistical significant differences among the national- and club athletes with  $p = 0.00$ . The habit strength of the provincial athletes showed no statistical



significant difference when compared to the national athletes. There is a significant difference between the provincial- and club athletes with  $p < 0.05$ :

Table 8.13 LSD test: Problem solving

Level of participation	National M=46.55	Provincial M=42.80	Club M=37.74
National		0.06	0.00
Provincial	0.06		0.03
Club	0.00	0.03	

**g. Responsiveness**

Responsiveness was measured as a strong habit among the national- and provincial athletes with scores above 50. Though this habit is relatively well established among the club athletes, there is a statistical significant difference with  $p < 0.01$ .

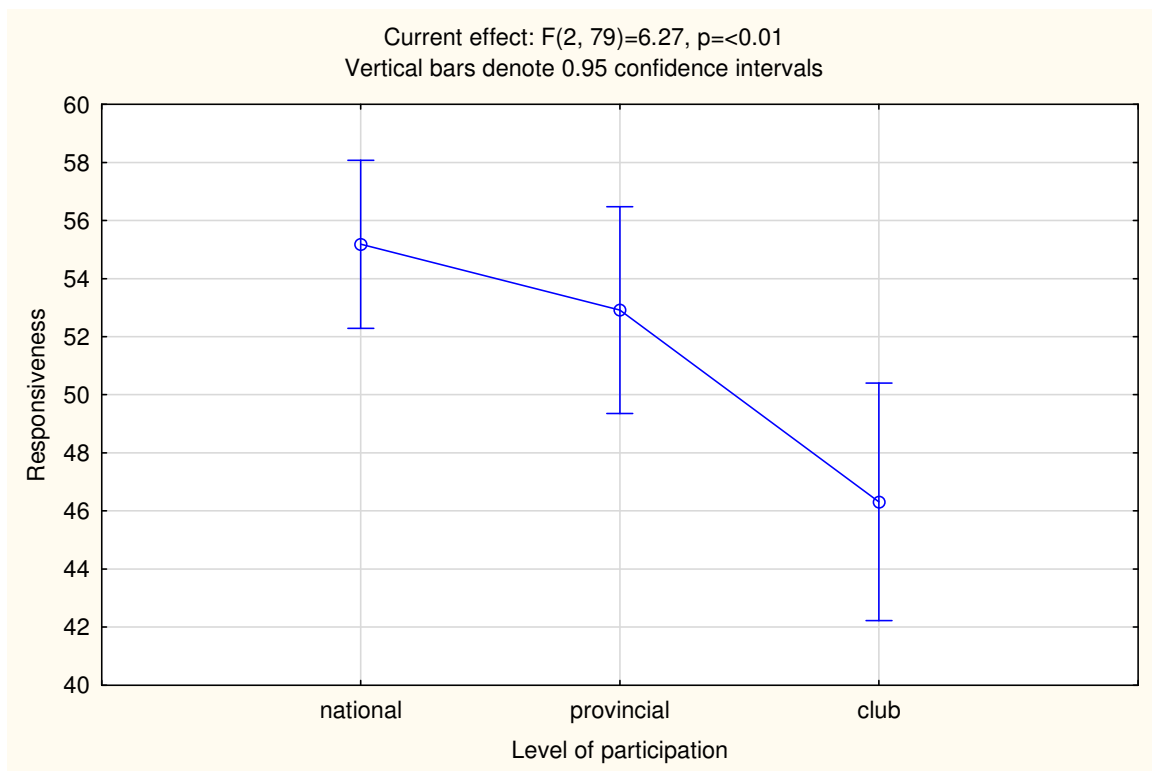


Figure 8.35 Responsiveness

The LSD Post Hoc test indicated statistical significant differences among the national- and club athletes with  $p = 0.00$ . The habit strength of the provincial athletes showed no statistical

significant difference when compared to the national athletes. There was a statistical significant difference when the habit strength of the provincial athletes was compared to that of the club athletes with  $p < 0.02$ :

Table 8.14 LSD test: Responsiveness

Level of participation	National M=55.18	Provincial M=52.92	Club M=46.32
National		0.33	0.00
Provincial	0.33		0.02
Club	0.00	0.02	

### h. Innovation

The habit of innovation showed now clear difference among the provincial- and club athletes as well as between the national- and provincial athletes, but there did appear a statistical significant difference when compared across the three levels with  $p = 0.05$ .

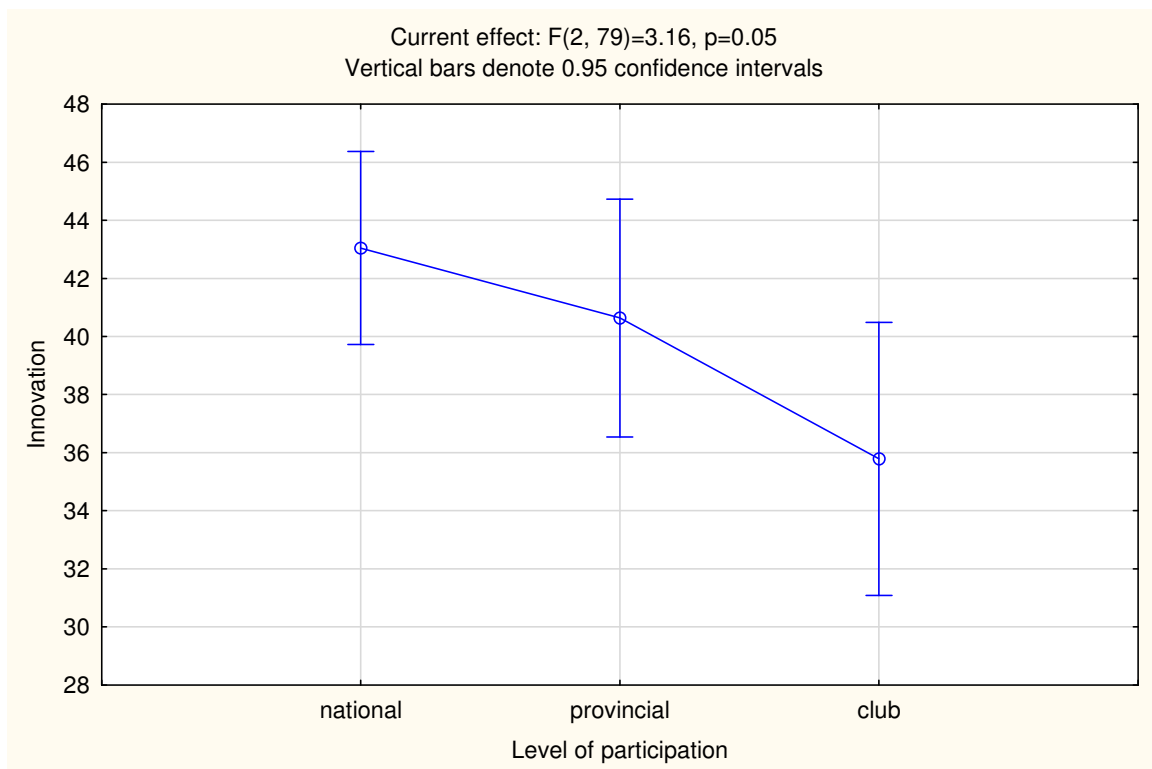


Figure 8.36 Innovation

The LSD Post Hoc test indicated a statistical significant difference among the national- and club athletes with  $p < 0.05$ . The habit strength of the provincial athletes showed no statistical significant difference when compared to the national- and club athletes:

Table 8.15 LSD test: Innovation

Level of participation	National M=43.05	Provincial M=40.64	Club M=35.79
National		0.37	0.01
Provincial	0.37		0.13
Club	0.01	0.13	

### i. Discipline

The habit of being disciplined measured as a well established habit among the national- and provincial athletes with scores over 50. There is significant difference among the three levels with  $p = 0.05$ .

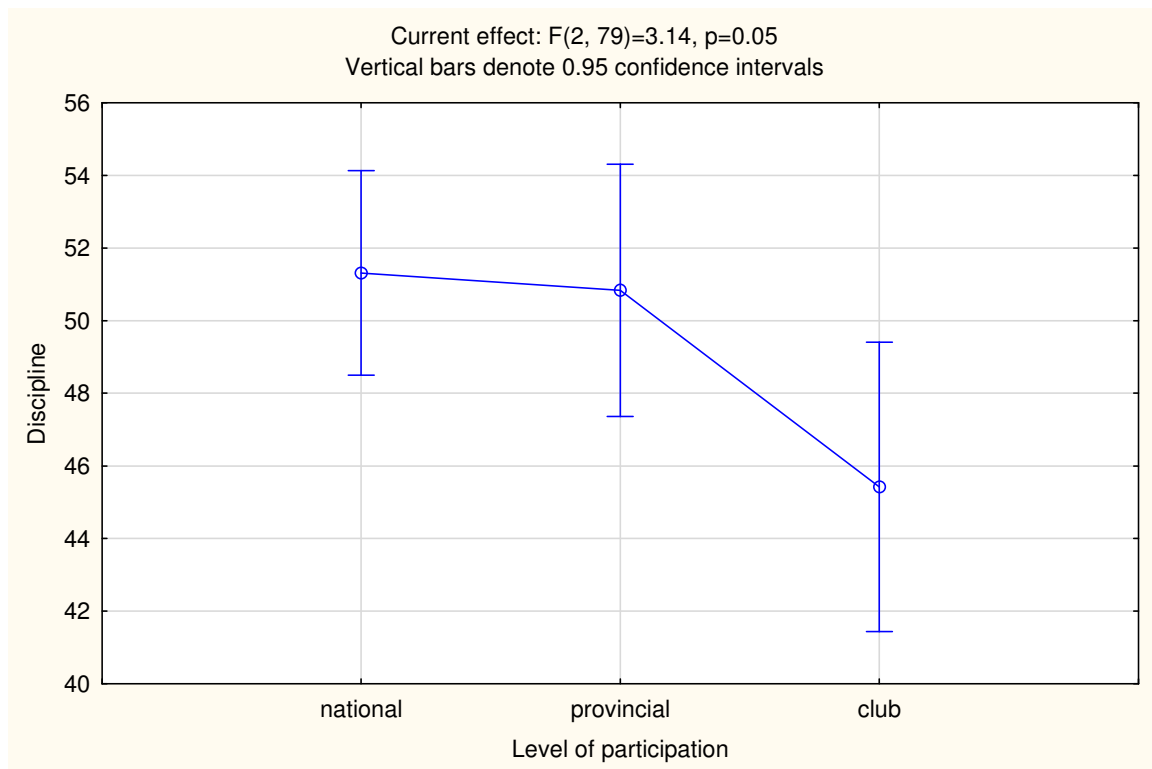


Figure 8.37 Discipline

The LSD Post Hoc test indicated statistical significant differences among the national- and club athletes with  $p < 0.05$ . The habit strength of the provincial athletes showed no statistical significant difference when compared to the national athletes. A statistical significant difference is indicated when the provincial athletes are compared with the club athletes with  $p < 0.05$ :

Table 8.16 LSD test: Discipline

Level of participation	National M=51.32	Provincial M=50.84	Club M=45.42
National		0.83	0.02
Provincial	0.83		0.04
Club	0.02	0.04	

**j. Self-confidence**

The habit of behaving in a confident manner was measured as a well established habit among the national athletes and a relatively well established habit among the provincial- and club athletes with  $p < 0.01$ .

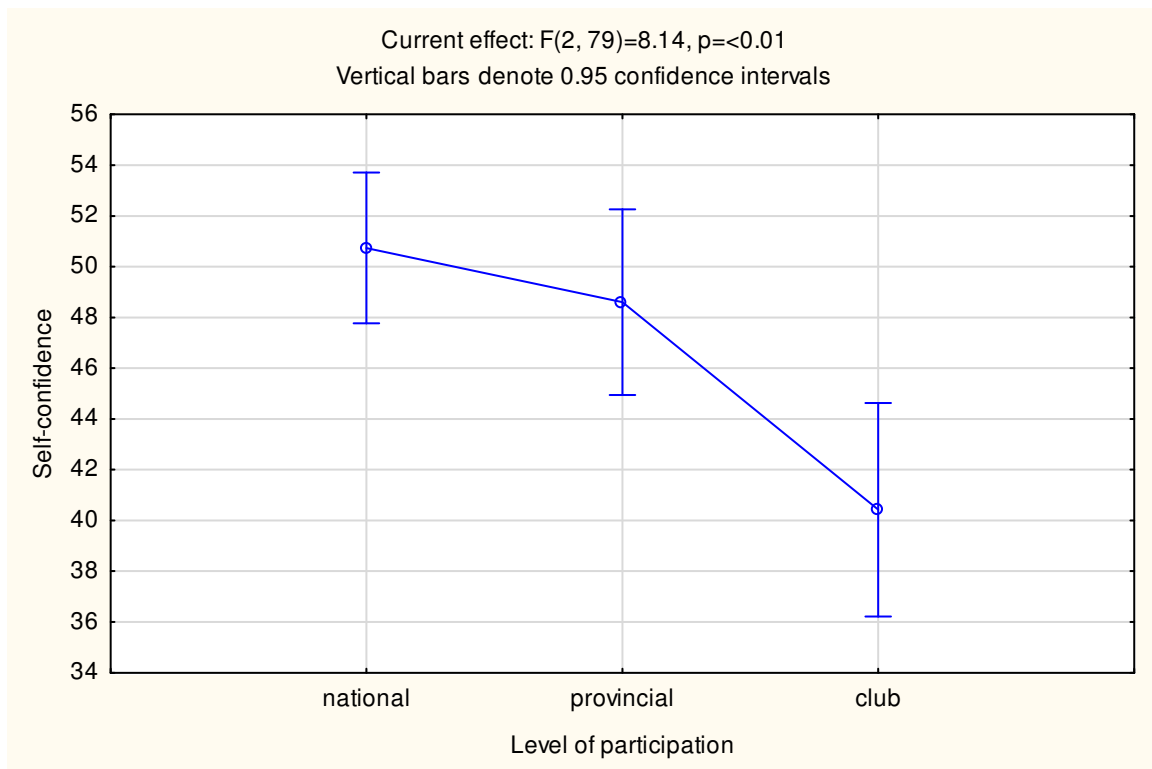


Figure 8.38 Self-confidence

The LSD Post Hoc test indicated statistical significant differences among the national- and club athletes with  $p=0.00$ . The habit strength of the provincial athletes showed no statistical significant difference when compared to the national athletes. The LSD test indicated a statistical significant difference with  $p=0.00$  when the self-confidence habit of the provincial athletes was compared to that of the club athletes:

Table 8.17 LSD test: Self-confidence

Level of participation	National M=50.74	Provincial M=48.60	Club M=40.42
National		0.37	0.00
Provincial	0.37		0.00
Club	0.00	0.00	

### k. Leadership

The habit of leadership is not as strongly established among the club athletes as it is among the national- and provincial athletes. The difference is statistical significant with  $p<0.01$ .

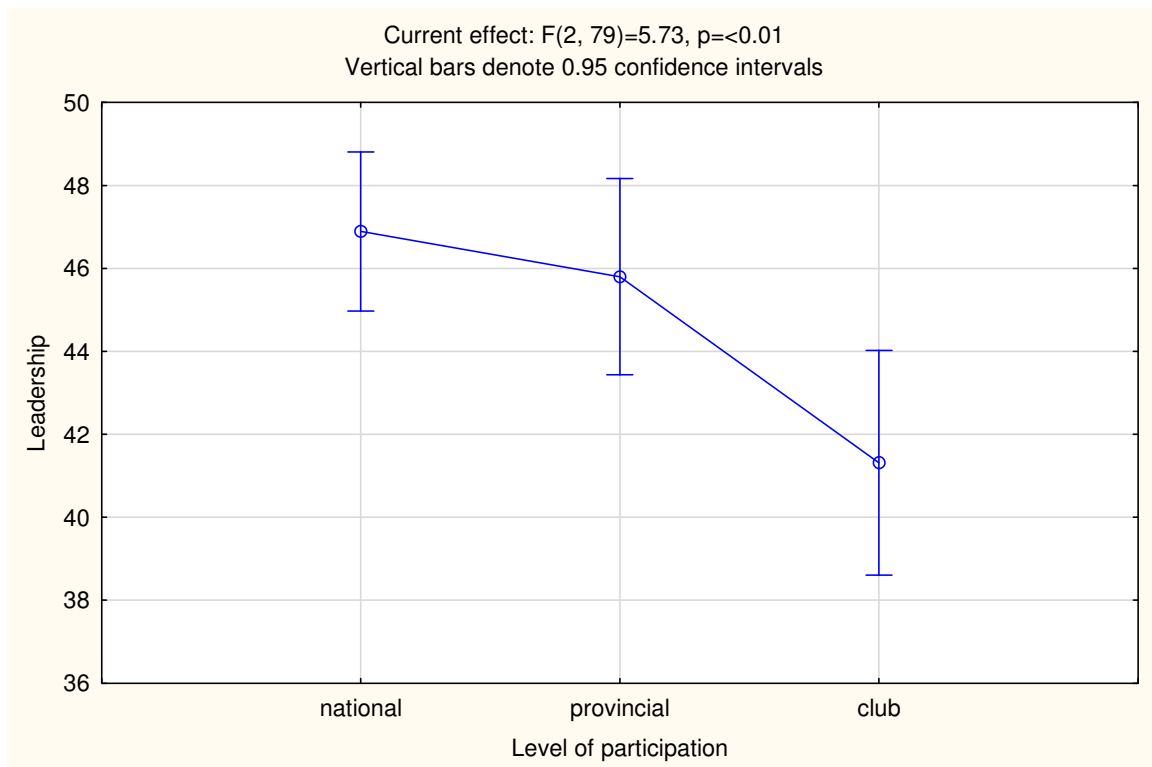


Figure 8.39 Leadership

The LSD Post Hoc test indicated statistical significant differences among the national- and club athletes with  $p=0.00$ . The habit strength of the provincial athletes showed no statistical significant difference when compared to the national athletes. There is a significant difference between the habit strengths of the club- and provincial athletes with  $p<0.05$ :

Table 8.18 LSD test: Leadership

Level of participation	National M=46.90	Provincial M=45.80	Club M=41.32
National		0.48	0.00
Provincial	0.48		0.02
Club	0.00	0.02	

### 8.6.3.1 Discussion

The data obtained from the Phase 2 athletes indicated that there was a significant difference among the athletes from the three levels of participation in the developed strength of 12 habits. These habits are propensity to own, propensity to hand-off, to simplify, resilience, propensity to handle frustration, self-motivation, problem solving, responsiveness, innovation, self-confidence and leadership. It is significant to note that the athletes on national- and provincial level have developed habits that are stronger embedded in their lives than what the club level athletes have developed.

Although the difference in habit strength among the national- and provincial athletes were not always statistically significant, it is important to note that the strength of all 12 of these habits were indicated as statistically significant between the national- and club level athletes. At the time of this study taking place, no other relevant data was available with which this data pertaining to the different levels of sport participation and related habits could be integrated and compared against.

It has however been suggested that there are no differences relating to mental toughness among athletes from different achievement levels (Nicholls, Polman, Levy, & Backhouse, 2009). These researchers recommended that physical attributes, technical skill and/or different psychological factors would rather predict achievement level more accurately than mental toughness. This is an interesting assertion to ponder on because the athletes in this study have indicated that there was indeed a significant difference among the athletes from the different levels of sport participation pertaining to 12 habits.

## 8.7 Values - Results of the Value Checklist and Portrait Values Questionnaire

### 8.7.1 Value Checklist

The Value Checklist distributed to the athletes assessed their conscious awareness of self perceived priority values in their lives. All 82 Phase 2 athletes completed this checklist and the results are depicted in Table 8.19. Loyalty is the value that was identified as the most important with 63 athletes indicating that it is a present value in their lives. The least important value was conformity and this value received no attention from any of the athletes.

Table 8.19 Results of the Value Checklist

	Value	Count of yes	% of yes
1.	Loyalty	63	77%
2.	Commitment	62	76%
3.	Respect for others	61	74%
4.	Honesty	60	73%
5.	Happiness	59	72%
6.	Sportsmanship	59	72%
7.	Dedication	57	70%
8.	Responsibility	57	70%
9.	Family	55	67%
10.	Kindness	55	67%
11.	Fairness	53	65%
12.	Accountability	52	63%
13.	Humour	51	62%
14.	Friendship	50	61%
15.	Integrity	49	60%
16.	Perseverance	49	60%



	Value	Count of yes	% of yes
17.	Concern for others	48	59%
18.	Self-respect	48	59%
19.	Fun	47	57%
20.	Health	46	56%
21.	Balance	45	55%
22.	Knowledge	45	55%
23.	Compassion	42	51%
24.	Professionalism	42	51%
25.	Character	41	50%
26.	Courage	40	49%
27.	Generosity	39	48%
28.	Excellence	37	45%
29.	Self-awareness	37	45%
30.	Faith	36	44%
31.	Humility	34	41%
32.	Family health	33	40%
33.	Creativity	32	39%
34.	Genuineness	32	39%
35.	Freedom	28	34%
36.	Individuality	28	34%
37.	Tolerance	26	32%
38.	Service to others	25	30%
39.	Honour	21	26%



	Value	Count of yes	% of yes
40.	Harmony	19	23%
41.	Comradeship	18	22%
42.	Perfection	16	20%
43.	Security	12	15%
44.	Wealth	10	12%
45.	Beauty	9	11%
46.	Serenity	8	10%
47.	Conformity	0	0%

### 8.7.2 Portrait Values Questionnaire (PVQ)

The scores of the athletes on the PVQ did not have statistical significant differences when compared against each other on the subscale values of the questionnaire. P-values measured above 0.10 and was of no statistical significance.

Table 8.20 Descriptive statistics: PVQ results - All Phase 2 athletes

Value (centered)	National Mean	National Std. Deviation	Provincial Mean	Provincial Std. Deviation	Club Mean	Club Std. Deviation	F - Value	P - Value
Self-direction	0.43	0.55	0.36	0.62	0.26	0.64	(2.79) =0.58	0.57
Power	-1.43	0.79	-1.15	0.99	-1.46	0.77	(2.79) =1.03	0.36
Universalism	0.47	0.59	0.46	0.51	0.23	0.52	(2.79) =1.33	0.27
Achievement	-0.10	0.72	-0.15	1.00	-0.14	0.83	(2.79) = 0.32	1.00
Security	0.12	0.68	0.00	0.69	0.12	0.54	(2.79) = 0.28	0.76

Value (centered)	National Mean	National Std. Deviation	Provincial Mean	Provincial Std. Deviation	Club Mean	Club Std. Deviation	F - Value	P - Value
Stimulation	-0.21	0.93	-0.04	0.84	-0.04	0.78	(2.79) = 0.38	0.68
Conformity	-0.03	0.82	-0.08	0.74	-0.14	0.72	(2.79) = 0.14	0.87
Tradition	-0.65	0.85	-0.64	0.66	-0.22	0.72	(2.79) = 2.23	0.11
Hedonism	0.14	0.78	0.33	0.61	0.48	0.84	(2.79) = 1.42	0.25
Benevolence	0.61	0.61	0.47	0.49	0.52	0.59	(2.79) = 0.49	0.62

### 8.7.3 Discussion

The three strongest values identified from the Value Checklist by the Phase 2 athletes pertained to loyalty, commitment and respect or others. It is noteworthy that from the top three values, the athletes valued interpersonal relationships higher than values that are more inclined towards individual satisfaction and needs. Although the Phase 2 athletes are competitive athletes by competing against other teams, their primary values stem from being loyal and respectful to others. Though the differences obtained from the PVQ were not statistical significant, it might be interesting to note that the national athletes scored higher on values such as self-direction, universalism and benevolence. Club athletes scored higher on values such as hedonism and tradition. There does not seem to be a obvious correlation between values mentioned in the Value Checklist and those obtained from the PVQ.

There is no data available on the specific values maintained by athletes from different levels of performance with which this study's data could be integrated. However, the importance of athletes having developed sound moral principles and the understanding of values in sport has been emphasised (Hsu, 2004). Hsu (2004) argued that athletes should not just be following the rules of sport but also have developed moral principles that can guide them in making decisions whilst participating, that are in good standing with their moral values. These values can then be practised as habits after the athletes have learned to engage in them

and have done so regularly over time. The athletes in Phase 2 have indicated their value preferences and have noted the importance of it in their lives by ranking them in the Value Checklist. Following up on the views of Hsu (2004), it might be worthy to investigate if the Phase 2 athletes' awareness of these values has manifested into action by the athletes actually directing their behaviour to coincide with their value preferences.

Lee et al. (2008) emphasised that it is vital to strike a balance between teaching young athletes how to be competitive and at the same time have respect for opponents and the rules of the specific sport. These researchers argued that values contribute to the attitudes that athletes will have towards their opponents and that it is vital to teach athletes to strive for success whilst maintaining fairness and respect on and off the field. This coincides with the results of this study in which the athletes indicated that among their most important values was the value of showing respect for others.

## 8.8 Mindfulness - Results of the Five Facet Mindfulness Questionnaire (FFMQ)

Two of the subscales on the FFMQ measured scores that were statistically significant. These were describing with  $p < 0.05$  and non-reactivity to inner experience with  $p < 0.10$ .

Table 8.21 Descriptive statistics: FFMQ scores - All Phase 2 athletes

Subscales	National Mean	National Std. Deviation	Provincial Mean	Provincial Std. Deviation	Club Mean	Club Std. Deviation	F - Value	P - Value
Observing	3.34	0.76	3.33	0.69	3.25	0.60	(2.79) = 0.10	0.90
Describing	3.52	0.66	3.47	0.78	3.01	0.49	(2.79) = 3.86	0.03
Non-judging of inner experience	3.25	0.85	3.18	0.57	2.93	0.59	(2.79) = 1.29	0.28
Non-reactivity to inner experience	3.33	0.54	3.05	0.62	3.11	0.33	(2.79) = 2.44	0.09

Subscales	National Mean	National Std. Deviation	Provincial Mean	Provincial Std. Deviation	Club Mean	Club Std. Deviation	F - Value	P - Value
Acting with awareness	3.63	0.74	3.52	0.74	3.45	0.65	(2.79) = 0.44	0.65

It was discovered that there was a significant difference among the three levels of participation pertaining to two variables of the Five Facet Mindfulness Questionnaire. The variables of describing and non-reactivity to inner experience were experienced differently among the national-, club- and provincial athletes. These differences are presented in Figures 8.40 and 8.41.

**a. Describing**

The provincial- and national athletes had no significant differences when compared, but there is a steady decline in scores compared to the club athletes with  $p < 0.05$ .

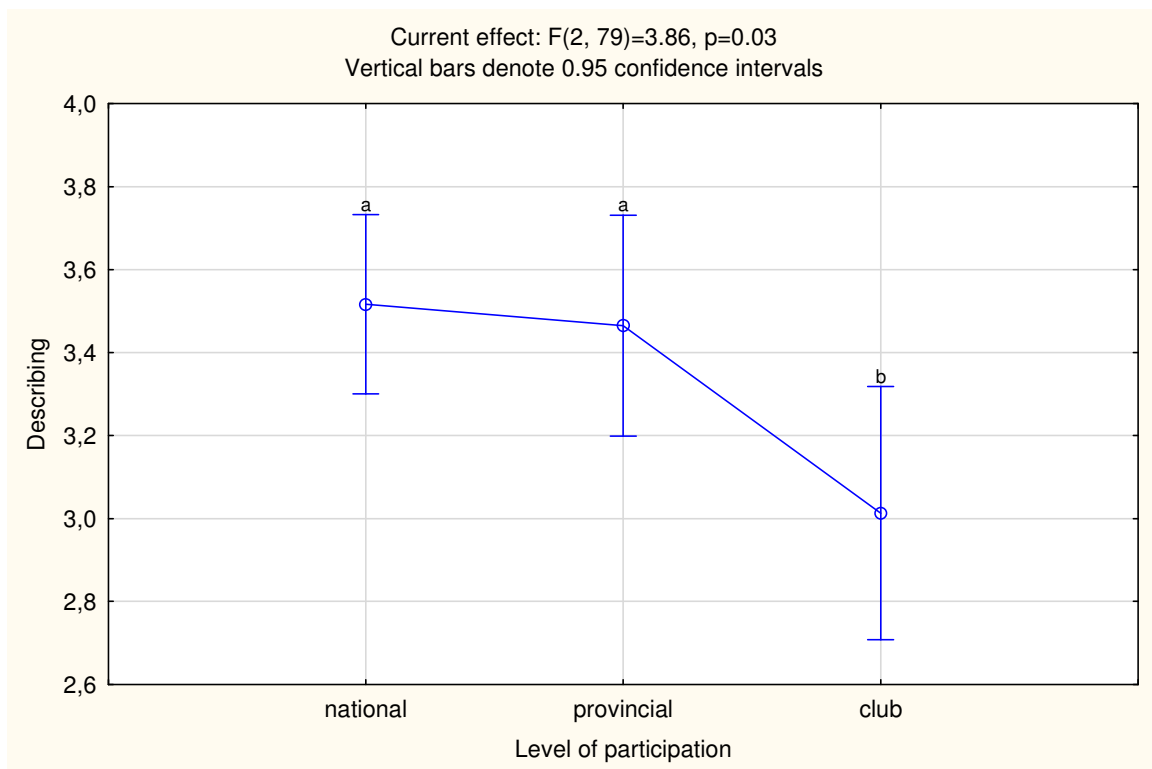


Figure 8.40 Describing

The LSD Post Hoc test indicated statistical significant differences among the national- and club athletes as well as between the provincial- and club athletes with  $p < 0.05$ . The scores of the provincial athletes showed no statistical significant difference when compared to the national athletes:

Table 8.22 LSD test: Describing

Level of participation	National M=3.52	Provincial M=3.47	Club M=3.01
National		0.77	0.01
Provincial	0.77		0.03
Club	0.01	0.03	

### b. Non-reactivity to inner experience

The statistical significant difference on this subscale was not so strong with  $p < 0.10$ , but worthy of mentioning.

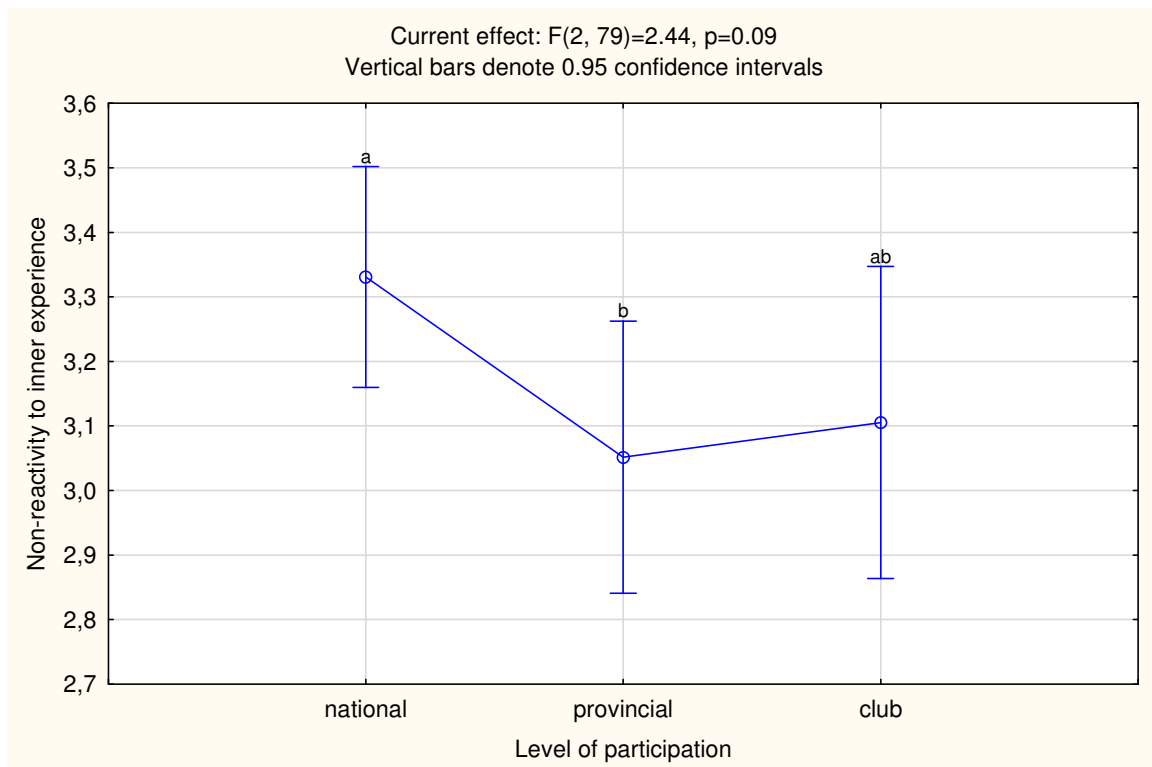


Figure 8.41 Non-reactivity to inner experience

The LSD Post Hoc test indicated a statistical difference among the national- and provincial athletes with  $p < 0.05$ . The scores of the national- and provincial athletes showed no statistical significant differences when compared to the club athletes, but there was a significant difference between the national- and provincial athletes:

Table 8.23 LSD test: Non-reactivity to inner experience

Level of participation	National M=3.33	Provincial M=3.05	Club M=3.12
National		0.04	0.13
Provincial	0.04		0.74
Club	0.13	0.74	

### 8.8.1 Discussion

The variable of describing refers to "*labelling internal experiences with words*" (Baer et al., 2008, p. 3). The data obtained in this study suggests that athletes who function on a more competitive level of sport have developed and incorporated the skill of being aware of their thoughts and emotions and identifying these internal experiences verbally or non-verbally with word labels. This indicates that the athletes on national- and provincial level are more mindful about their internal experiences than the athletes on club level, with the added skill of being able to identify these experiences.

This finding relates with the views of the Phase 1 athletes who indicated an awareness of their feelings and thoughts when participating and preparing for events. Phase 1 athletes were able to label their thoughts and emotions and indicated that they are constantly aware of these internal experiences. This relates with MacNamara et al. (2010) who interviewed elite athletes. These elite athletes indicated that psychological attributes are key factors in developing excellence in sport and included commitment, competitiveness, game awareness, self-belief and coping under pressure as characteristics that should be developed in order to attain success as an athlete. A level of awareness (describing) is important for athletes to note these attributes in the first place. Phase 1 athletes referred to the attributes as being habitual and part of their ingrained value systems. It is noteworthy that there was a significant discrepancy between the national- and provincial athletes' scores on the describing variable and the lower reached score of the club level athletes.

Unfortunately, in order to ascertain the reason for the scores obtained, there is no available data to which the results obtained from the different levels of participation can be compared

against. The researcher suggests that it might be due to athletes on national- and provincial level being exposed to mental skills training. The competitive nature of the level of their performances might expose them to mental skills training and likely have an influence on them being more aware of the feelings and emotions they are experiencing whilst participating and being able to identify their internal experiences appropriately.

The variable of non-reactivity to inner experience is *"the tendency to allow thoughts and feelings to come and go, without getting caught up in or carried away by them"* (Baer et al., 2008, p. 3). It is interesting to note that the national athletes are more mindful than the provincial athletes about how they react to their inner experiences. They seem to be able to deal with their thoughts and emotions in a more mindful manner than the provincial athletes. This finding relates to Van Yperen (2009) who found that distinguishing factors among successful and unsuccessful soccer players included problem-focused behaviour as a coping skill. The data from the Phase 2 athletes with regards to this is supported by the comments of the Phase 1 athletes who noted their awareness of difficult times in their sport careers and their habits in working through and overcoming adversity. Their views relates to being able to note their thoughts and feelings and being able to not get carried away by them. They are thus in a better position to maintain control over their emotions and not make decisions based purely on the emotions they feel in situations.

What is interesting though, is that there is not a significant difference among the national- and club athletes on the variable of non-reactivity to inner experience. This might be due to the club athletes' reasons for participation. It is possible that they might be participating in sport for leisure purposes and as a result be less likely to get caught up in their emotions whilst they are playing because they are playing for pleasure and possibly health reasons. The national athletes are playing on a more competitive level and might have been exposed to mental skills training which could have involved learning how to deal with pressure and emotions whilst performing. This will enable them to be more mindful of their inner experiences and also able to deal with those inner experiences in a more effective manner. The researcher proposes a possible reason for the lower scores of the provincial athletes. Provincial participation is the next level of performance to which a club athlete promotes. It might be that some provincial athletes are still in the process of balancing their internal experiences (of having fun and also competing more competitively) with the requirements of the situation and therefore score lower on this variable. Reflecting on the results of the national athletes it is likely for provincial athletes to develop this aspect of being mindful of their inner experiences without instant reactivity to those experiences. Unfortunately, there is

no available research to support this finding and propositions are based on the researcher's experience of sport on club-, provincial- and national level.

## 8.9 Correlations between the three different measuring instruments (FFMQ, PVQ and Shadowmatch™ Worksheet)

### 8.9.1 PVQ (centered) versus Shadowmatch™ Worksheet

This study is interested in the importance of the 10 PVQ values in an athlete's life and how these values relate to habits. In order to establish the relative value of these 10 values, the scores of the PVQ were centered. The scores therefore indicate the value preferences of athletes and thus give an indication of the value priorities of the athletes. It must be kept in mind that the centered scores used in this discussion indicate the relative importance of each value in the athlete's value system.

Pearson correlation coefficients were calculated between the 10 values of the PVQ and the 19 habits of the Shadowmatch™ Worksheet. Correlations between 0.40 and 1.00 (r-values) were interpreted as strong, correlations between 0.30 and 0.40 as moderate (indicated in yellow), correlations between 0.10 and 0.30 as small (indicated in blue) and correlations <0.10 as weak (Cohen, 1992).

Table 8.24 PVQ (centered) versus Shadowmatch™ Worksheet

	Value	Habit	Pearson r value	Pearson p value	N
1.	Self-direction (centered)	Propensity to own	0.24	0.03	82
2.	Self-direction (centered)	Propensity to hand-off	-0.21	0.05	82
3.	Self-direction (centered)	To simplify	0.15	0.18	82
4.	Self-direction (centered)	Resilience	-0.01	0.96	82
5.	Self-direction (centered)	Propensity to change	0.10	0.38	82
6.	Self-direction (centered)	Frustration	-0.00	0.97	82
7.	Self-direction (centered)	Team inclination	-0.11	0.31	82
8.	Self-direction (centered)	Individual inclination	0.26	0.02	82
9.	Self-direction (centered)	Self-motivation	0.04	0.74	82
10.	Self-direction (centered)	Routine	-0.14	0.20	82





	Value	Habit	Pearson r value	Pearson p value	N
11.	Self-direction (centered)	Problem solving	0.18	0.11	82
12.	Self-direction (centered)	Responsiveness	0.15	0.18	82
13.	Self-direction (centered)	Innovation	0.28	0.01	82
14.	Self-direction (centered)	People positive	-0.01	0.91	82
15.	Self-direction (centered)	Discipline	0.02	0.87	82
16.	Self-direction (centered)	Conflict handling	-0.00	0.98	82
17.	Self-direction (centered)	Altruism	-0.02	0.83	82
18.	Self-direction (centered)	Self-confidence	0.06	0.57	82
19.	Self-direction (centered)	Leadership	-0.03	0.81	82
20.	Power (centered)	Propensity to own	0.07	0.56	82
21.	Power (centered)	Propensity to hand-off	-0.10	0.38	82
22.	Power (centered)	To simplify	0.12	0.28	82
23.	Power (centered)	Resilience	0.00	0.97	82
24.	Power (centered)	Propensity to change	-0.20	0.07	82
25.	Power (centered)	Frustration	-0.08	0.50	82
26.	Power (centered)	Team inclination	-0.09	0.41	82
27.	Power (centered)	Individual inclination	0.12	0.28	82
28.	Power (centered)	Self-motivation	0.05	0.63	82
29.	Power (centered)	Routine	0.12	0.28	82
30.	Power (centered)	Problem solving	-0.04	0.71	82
31.	Power (centered)	Responsiveness	0.09	0.41	82
32.	Power (centered)	Innovation	-0.05	0.64	82
33.	Power (centered)	People positive	-0.23	0.04	82



	Value	Habit	Pearson r value	Pearson p value	N
34.	Power (centered)	Discipline	0.14	0.20	82
35.	Power (centered)	Conflict handling	-0.18	0.11	82
36.	Power (centered)	Altruism	-0.25	0.03	82
37.	Power (centered)	Self-confidence	-0.02	0.84	82
38.	Power (centered)	Leadership	0.03	0.76	82
39.	Universalism (centered)	Propensity to own	0.16	0.15	82
40.	Universalism (centered)	Propensity to hand-off	-0.14	0.21	82
41.	Universalism (centered)	To simplify	0.19	0.09	82
42.	Universalism (centered)	Resilience	0.21	0.06	82
43.	Universalism (centered)	Propensity to change	0.32	<0.01	82
44.	Universalism (centered)	Frustration	0.22	0.05	82
45.	Universalism (centered)	Team inclination	0.05	0.63	82
46.	Universalism (centered)	Individual inclination	-0.04	0.69	82
47.	Universalism (centered)	Self-motivation	0.14	0.22	82
48.	Universalism (centered)	Routine	-0.18	0.10	82
49.	Universalism (centered)	Problem solving	0.30	<0.01	82
50.	Universalism (centered)	Responsiveness	0.26	0.02	82
51.	Universalism (centered)	Innovation	0.26	0.02	82
52.	Universalism (centered)	People positive	0.13	0.24	82
53.	Universalism (centered)	Discipline	0.07	0.54	82
54.	Universalism (centered)	Conflict handling	0.16	0.15	82
55.	Universalism (centered)	Altruism	0.14	0.19	82
56.	Universalism (centered)	Self-confidence	0.32	<0.01	82



	Value	Habit	Pearson r value	Pearson p value	N
57.	Universalism (centered)	Leadership	0.24	0.03	82
58.	Achievement (centered)	Propensity to own	-0.06	0.59	82
59.	Achievement (centered)	Propensity to hand-off	0.03	0.79	82
60.	Achievement (centered)	To simplify	-0.06	0.56	82
61.	Achievement (centered)	Resilience	-0.11	0.33	82
62.	Achievement (centered)	Propensity to change	-0.26	0.02	82
63.	Achievement (centered)	Frustration	-0.20	0.08	82
64.	Achievement (centered)	Team inclination	-0.18	0.12	82
65.	Achievement (centered)	Individual inclination	0.08	0.47	82
66.	Achievement (centered)	Self-motivation	-0.21	0.06	82
67.	Achievement (centered)	Routine	0.11	0.33	82
68.	Achievement (centered)	Problem solving	-0.28	0.01	82
69.	Achievement (centered)	Responsiveness	-0.12	0.26	82
70.	Achievement (centered)	Innovation	-0.18	0.11	82
71.	Achievement (centered)	People positive	-0.28	0.01	82
72.	Achievement (centered)	Discipline	-0.11	0.31	82
73.	Achievement (centered)	Conflict handling	-0.28	0.01	82
74.	Achievement (centered)	Altruism	-0.31	<0.01	82
75.	Achievement (centered)	Self-confidence	-0.20	0.08	82
76.	Achievement (centered)	Leadership	-0.20	0.07	82
77.	Security (centered)	Propensity to own	-0.05	0.66	82
78.	Security (centered)	Propensity to hand-off	0.04	0.75	82
79.	Security (centered)	To simplify	0.06	0.60	82



	Value	Habit	Pearson r value	Pearson p value	N
80.	Security (centered)	Resilience	0.11	0.34	82
81.	Security (centered)	Propensity to change	0.07	0.52	82
82.	Security (centered)	Frustration	0.02	0.86	82
83.	Security (centered)	Team inclination	0.01	0.96	82
84.	Security (centered)	Individual inclination	-0.14	0.21	82
85.	Security (centered)	Self-motivation	0.16	0.16	82
86.	Security (centered)	Routine	0.08	0.47	82
87.	Security (centered)	Problem solving	0.07	0.51	82
88.	Security (centered)	Responsiveness	0.06	0.59	82
89.	Security (centered)	Innovation	-0.05	0.66	82
90.	Security (centered)	People positive	-0.07	0.55	82
91.	Security (centered)	Discipline	0.13	0.26	82
92.	Security (centered)	Conflict handling	0.04	0.74	82
93.	Security (centered)	Altruism	-0.09	0.44	82
94.	Security (centered)	Self-confidence	0.12	0.28	82
95.	Security (centered)	Leadership	0.16	0.16	82
96.	Stimulation (centered)	Propensity to own	0.09	0.42	82
97.	Stimulation (centered)	Propensity to hand-off	-0.13	0.23	82
98.	Stimulation (centered)	To simplify	0.00	0.98	82
99.	Stimulation (centered)	Resilience	0.00	1.00	82
100	Stimulation (centered)	Propensity to change	0.12	0.26	82
101	Stimulation (centered)	Frustration	0.05	0.64	82
102	Stimulation (centered)	Team inclination	0.12	0.29	82



	Value	Habit	Pearson r value	Pearson p value	N
103	Stimulation (centered)	Individual inclination	-0.07	0.50	82
104	Stimulation (centered)	Self-motivation	-0.12	0.27	82
105	Stimulation (centered)	Routine	-0.24	0.03	82
106	Stimulation (centered)	Problem solving	-0.03	0.77	82
107	Stimulation (centered)	Responsiveness	-0.03	0.81	82
108	Stimulation (centered)	Innovation	0.20	0.07	82
109	Stimulation (centered)	People positive	0.21	0.06	82
110	Stimulation (centered)	Discipline	-0.14	0.21	82
111	Stimulation (centered)	Conflict handling	0.05	0.66	82
112	Stimulation (centered)	Altruism	0.13	0.23	82
113	Stimulation (centered)	Self-confidence	0.09	0.41	82
114	Stimulation (centered)	Leadership	-0.00	0.97	82
115	Conformity (centered)	Propensity to own	-0.12	0.30	82
116	Conformity (centered)	Propensity to hand-off	0.11	0.32	82
117	Conformity (centered)	To simplify	-0.12	0.28	82
118	Conformity (centered)	Resilience	0.07	0.51	82
119	Conformity (centered)	Propensity to change	-0.07	0.54	82
120	Conformity (centered)	Frustration	0.07	0.51	82
121	Conformity (centered)	Team inclination	0.02	0.83	82
122	Conformity (centered)	Individual inclination	-0.07	0.53	82
123	Conformity (centered)	Self-motivation	0.01	0.91	82
124	Conformity (centered)	Routine	0.20	0.07	82
125	Conformity (centered)	Problem solving	-0.03	0.78	82



	Value	Habit	Pearson r value	Pearson p value	N
126	Conformity (centered)	Responsiveness	-0.13	0.26	82
127	Conformity (centered)	Innovation	-0.20	0.07	82
128	Conformity (centered)	People positive	0.04	0.72	82
129	Conformity (centered)	Discipline	0.05	0.66	82
130	Conformity (centered)	Conflict handling	0.08	0.45	82
131	Conformity (centered)	Altruism	0.11	0.33	82
132	Conformity (centered)	Self-confidence	-0.07	0.54	82
133	Conformity (centered)	Leadership	0.01	0.91	82
134	Tradition (centered)	Propensity to own	-0.26	0.02	82
135	Tradition (centered)	Propensity to hand-off	0.29	<0.01	82
136	Tradition (centered)	To simplify	-0.21	0.06	82
137	Tradition (centered)	Resilience	-0.28	0.01	82
138	Tradition (centered)	Propensity to change	-0.07	0.51	82
139	Tradition (centered)	Frustration	-0.17	0.12	82
140	Tradition (centered)	Team inclination	-0.01	0.96	82
141	Tradition (centered)	Individual inclination	-0.02	0.83	82
142	Tradition (centered)	Self-motivation	-0.12	0.28	82
143	Tradition (centered)	Routine	0.06	0.61	82
144	Tradition (centered)	Problem solving	-0.19	0.09	82
145	Tradition (centered)	Responsiveness	-0.19	0.09	82
146	Tradition (centered)	Innovation	-0.16	0.14	82
147	Tradition (centered)	People positive	-0.00	1.00	82
148	Tradition (centered)	Discipline	-0.16	0.16	82



	Value	Habit	Pearson r value	Pearson p value	N
149	Tradition (centered)	Conflict handling	-0.03	0.76	82
150	Tradition (centered)	Altruism	0.05	0.66	82
151	Tradition (centered)	Self-confidence	-0.29	<0.01	82
152	Tradition (centered)	Leadership	-0.21	0.05	82
153	Hedonism (centered)	Propensity to own	-0.15	0.17	82
154	Hedonism (centered)	Propensity to hand-off	0.19	0.08	82
155	Hedonism (centered)	To simplify	-0.12	0.27	82
156	Hedonism (centered)	Resilience	-0.10	0.35	82
157	Hedonism (centered)	Propensity to change	-0.02	0.86	82
158	Hedonism (centered)	Frustration	-0.11	0.31	82
159	Hedonism (centered)	Team inclination	0.14	0.21	82
160	Hedonism (centered)	Individual inclination	-0.18	0.11	82
161	Hedonism (centered)	Self-motivation	-0.09	0.40	82
162	Hedonism (centered)	Routine	-0.12	0.30	82
163	Hedonism (centered)	Problem solving	-0.11	0.34	82
164	Hedonism (centered)	Responsiveness	-0.18	0.11	82
165	Hedonism (centered)	Innovation	-0.09	0.41	82
166	Hedonism (centered)	People positive	0.00	0.97	82
167	Hedonism (centered)	Discipline	-0.14	0.22	82
168	Hedonism (centered)	Conflict handling	-0.07	0.54	82
169	Hedonism (centered)	Altruism	0.02	0.83	82
170	Hedonism (centered)	Self-confidence	-0.07	0.54	82
171	Hedonism (centered)	Leadership	-0.07	0.55	82

	Value	Habit	Pearson r value	Pearson p value	N
172	Benevolence (centered)	Propensity to own	0.16	0.14	82
173	Benevolence (centered)	Propensity to hand-off	-0.14	0.21	82
174	Benevolence (centered)	To simplify	0.02	0.86	82
175	Benevolence (centered)	Resilience	0.10	0.39	82
176	Benevolence (centered)	Propensity to change	0.01	0.91	82
177	Benevolence (centered)	Frustration	0.21	0.05	82
178	Benevolence (centered)	Team inclination	0.09	0.42	82
179	Benevolence (centered)	Individual inclination	0.12	0.27	82
180	Benevolence (centered)	Self-motivation	0.16	0.14	82
181	Benevolence (centered)	Routine	0.04	0.70	82
182	Benevolence (centered)	Problem solving	0.16	0.15	82
183	Benevolence (centered)	Responsiveness	0.09	0.44	82
184	Benevolence (centered)	Innovation	0.07	0.51	82
185	Benevolence (centered)	People positive	0.29	<0.01	82
186	Benevolence (centered)	Discipline	0.15	0.19	82
187	Benevolence (centered)	Conflict handling	0.27	0.01	82
188	Benevolence (centered)	Altruism	0.27	0.01	82
189	Benevolence (centered)	Self-confidence	0.06	0.62	82
190	Benevolence (centered)	Leadership	0.06	0.60	82

The correlations consist of four moderated correlations and 24 weak correlations. No strong correlations were found. An analysis of the moderate correlations found is as follows. The numbers refer to the number of the items in the above table.



#### **43. Universalism - Propensity to change**

There was a moderate correlation between the two variables,  $r=0.32$ ,  $p<0.01$ ,  $n=82$ . This is indicative of the athletes' orientation to the wellbeing of people and nature, and his/her tendency to adapt to change. The scores indicate that the more an athlete demonstrates an understanding, appreciation, tolerance and protection of people and nature, the more likely the athlete will have the habit of managing any changes in his/her life in a positive manner. The athlete who values the wellbeing of people and nature will more likely have the tendency to adapt to change easily and comfortably, embracing the new in his/her life.

#### **49. Universalism - Problem solving**

There was a moderate correlation between the two variables,  $r=0.30$ ,  $p<0.01$ ,  $n=82$ . This indicates that the stronger an athlete values the wellbeing of nature and people and thus demonstrates an understanding, appreciation, tolerance and protection of people and nature, the more likely the athlete will have the habit of engaging with challenges on a conceptual, social and practical level and successfully manage these challenges and difficulties when attempting to resolve them. The athlete will try to solve problems and not attempt to rather ignore them.

#### **56. Universalism - Self-confidence**

There was a moderate correlation between the two variables,  $r=0.32$ ,  $p<0.01$ ,  $n=82$ . This means that the more an athlete demonstrates an understanding, appreciation, tolerance and protection of people and nature, the more likely the athlete will have the habit of acting and behaving in a manner with a high level of trust and conviction in his/her own abilities.

#### **74. Achievement - Altruism**

There was a moderate, negative correlation between the two variables,  $r=-0.31$ ,  $p<0.01$ ,  $n=82$ . The stronger athletes value being successful, influential, capable and ambitious, the less likely they will exhibit the habit of assisting people without wanting anything in return.

#### **8.9.2 FFMQ versus Shadowmatch™ Worksheet**

The five different variables of the FFMQ have been compared with each of the nineteen habits of the Shadowmatch™ Worksheet. Pearson correlation coefficients were calculated between FFMQ facets and the 19 habits of the Shadowmatch™ Worksheet. Correlations between 0.40 and 1.00 (r-values) were interpreted as strong (indicated in pink), correlations between 0.30 and 0.40 as moderate (indicated in yellow), correlations between 0.10 and 0.30 as small (indicated in blue) and correlations  $<0.10$  as weak (Cohen, 1992).

The correlations found are analysed directly below the table:

Table 8.25 FFMQ versus Shadowmatch™ Worksheet

	Mindfulness variable	Habit	Pearson r value	Pearson p value	N
1.	Observe	Propensity to own	0.21	0.06	82
2.	Observe	Propensity to hand-off	-0.30	<0.01	82
3.	Observe	To simplify	-0.01	0.95	82
4.	Observe	Resilience	0.21	0.06	82
5.	Observe	Propensity to change	0.14	0.22	82
6.	Observe	Frustration	0.18	0.10	82
7.	Observe	Team inclination	0.02	0.87	82
8.	Observe	Individual inclination	0.05	0.68	82
9.	Observe	Self-motivation	0.18	0.11	82
10.	Observe	Routine	-0.03	0.76	82
11.	Observe	Problem solving	0.12	0.27	82
12.	Observe	Responsiveness	0.02	0.86	82
13.	Observe	Innovation	0.19	0.08	82
14.	Observe	People positive	0.17	0.13	82
15.	Observe	Discipline	0.12	0.30	82
16.	Observe	Conflict handling	0.15	0.19	82
17.	Observe	Altruism	0.15	0.18	82
18.	Observe	Self-confidence	0.07	0.53	82
19.	Observe	Leadership	0.10	0.35	82
20.	Describing	Propensity to own	0.31	<0.01	82
21.	Describing	Propensity to hand-off	-0.32	<0.01	82
22.	Describing	To simplify	0.32	<0.01	82
23.	Describing	Resilience	0.45	<0.01	82
24.	Describing	Propensity to change	0.20	0.07	82



	Mindfulness variable	Habit	Pearson r value	Pearson p value	N
25.	Describing	Frustration	0.30	<0.01	82
26.	Describing	Team inclination	0.12	0.28	82
27.	Describing	Individual inclination	-0.07	0.53	82
28.	Describing	Self-motivation	0.27	0.01	82
29.	Describing	Routine	0.02	0.87	82
30.	Describing	Problem solving	0.40	<0.01	82
31.	Describing	Responsiveness	0.32	<0.01	82
32.	Describing	Innovation	0.39	<0.01	82
33.	Describing	People positive	0.28	0.01	82
34.	Describing	Discipline	0.28	0.01	82
35.	Describing	Conflict handling	0.23	0.04	82
36.	Describing	Altruism	0.23	0.04	82
37.	Describing	Self-confidence	0.37	<0.01	82
38.	Describing	Leadership	0.38	<0.01	82
39.	Non-judging of inner experience	Propensity to own	0.03	0.76	82
40.	Non-judging of inner experience	Propensity to hand-off	0.03	0.76	82
41.	Non-judging of inner experience	To simplify	0.30	<0.01	82
42.	Non-judging of inner experience	Resilience	0.02	0.88	82
43.	Non-judging of inner experience	Propensity to change	0.10	0.38	82
44.	Non-judging of inner experience	Frustration	0.01	0.90	82
45.	Non-judging of inner experience	Team inclination	0.19	0.08	82
46.	Non-judging of inner experience	Individual inclination	-0.13	0.25	82



	Mindfulness variable	Habit	Pearson r value	Pearson p value	N
47.	Non-judging of inner experience	Self-motivation	-0.07	0.56	82
48.	Non-judging of inner experience	Routine	-0.02	0.83	82
49.	Non-judging of inner experience	Problem solving	0.25	0.02	82
50.	Non-judging of inner experience	Responsiveness	0.21	0.05	82
51.	Non-judging of inner experience	Innovation	0.09	0.41	82
52.	Non-judging of inner experience	People positive	0.19	0.09	82
53.	Non-judging of inner experience	Discipline	0.01	0.95	82
54.	Non-judging of inner experience	Conflict handling	0.13	0.24	82
55.	Non-judging of inner experience	Altruism	0.16	0.14	82
56.	Non-judging of inner experience	Self-confidence	0.11	0.30	82
57.	Non-judging of inner experience	Leadership	0.12	0.27	82
58.	Non-reactivity to inner experience	Propensity to own	0.36	<0.01	82
59.	Non-reactivity to inner experience	Propensity to hand-off	-0.44	<0.01	82
60.	Non-reactivity to inner experience	To simplify	0.28	0.01	82
61.	Non-reactivity to inner experience	Resilience	0.28	0.01	82
62.	Non-reactivity to inner experience	Propensity to change	0.27	0.02	82



	Mindfulness variable	Habit	Pearson r value	Pearson p value	N
63.	Non-reactivity to inner experience	Frustration	0.22	0.05	82
64.	Non-reactivity to inner experience	Team inclination	0.02	0.88	82
65.	Non-reactivity to inner experience	Individual inclination	0.19	0.08	82
66.	Non-reactivity to inner experience	Self-motivation	0.24	0.03	82
67.	Non-reactivity to inner experience	Routine	0.10	0.39	82
68.	Non-reactivity to inner experience	Problem solving	0.33	<0.01	82
69.	Non-reactivity to inner experience	Responsiveness	0.34	<0.01	82
70.	Non-reactivity to inner experience	Innovation	0.39	<0.01	82
71.	Non-reactivity to inner experience	People positive	0.29	<0.01	82
72.	Non-reactivity to inner experience	Discipline	0.16	0.15	82
73.	Non-reactivity to inner experience	Conflict handling	0.18	0.10	82
74.	Non-reactivity to inner experience	Altruism	0.31	<0.01	82
75.	Non-reactivity to inner experience	Self-confidence	0.27	0.01	82
76.	Non-reactivity to inner experience	Leadership	0.25	0.03	82
77.	Acting with awareness	Propensity to own	0.15	0.17	82
78.	Acting with awareness	Propensity to hand-off	-0.19	0.09	82
79.	Acting with awareness	To simplify	0.03	0.81	82

	Mindfulness variable	Habit	Pearson r value	Pearson p value	N
80.	Acting with awareness	Resilience	0.22	0.04	82
81.	Acting with awareness	Propensity to change	0.18	0.11	82
82.	Acting with awareness	Frustration	0.24	0.03	82
83.	Acting with awareness	Team inclination	0.31	<0.01	82
84.	Acting with awareness	Individual inclination	-0.21	0.06	82
85.	Acting with awareness	Self-motivation	0.09	0.41	82
86.	Acting with awareness	Routine	0.13	0.25	82
87.	Acting with awareness	Problem solving	0.20	0.07	82
88.	Acting with awareness	Responsiveness	0.13	0.26	82
89.	Acting with awareness	Innovation	0.12	0.29	82
90.	Acting with awareness	People positive	0.35	<0.01	82
91.	Acting with awareness	Discipline	0.30	<0.01	82
92.	Acting with awareness	Conflict handling	0.24	0.03	82
93.	Acting with awareness	Altruism	0.30	<0.01	82
94.	Acting with awareness	Self-confidence	0.33	<0.01	82
95.	Acting with awareness	Leadership	0.32	<0.01	82

The correlations consist of three strong correlations, 21 moderate correlations and 18 weak correlations. An analysis of the strong and moderate correlations found is as follows. The numbers refer to the number of the items in the above table.

## 2. Observe - Propensity to hand-off

There was a moderate negative correlation between the two variables,  $r=-0.30$ ,  $p<0.01$ ,  $n=82$ . This means that when an athlete becomes more aware of internal and external experiences, his/her tendency to prefer an outside agent to solve problems, handle difficulties or even execute tasks decreases. Thus, the more mindful an athlete is in noticing or attending to internal and external experiences, the more the athlete will have the habit of taking ownership to solve a problem and handle a challenge by him/herself.

## **20. Describing - Propensity to own**

There was a moderate correlation between the two variables,  $r=0.31$ ,  $p<0.01$ ,  $n=82$ . This indicates that the more an athlete is aware of his/her thoughts and feelings and able to express it verbally, the more an athlete is likely to have the habit of taking ownership of problems and challenges, trying to handle difficulties by him/herself.

## **21. Describing - Propensity to hand-off**

There was a moderate negative correlation between the two variables,  $r=-0.32$ ,  $p<0.01$ ,  $n=82$ . The correlation among these two variables indicate that the more an athlete is aware of his/her thoughts and feelings and able to express it verbally, the athlete will be less likely to prefer an outside person to solve problems, handle difficulties or execute tasks on his/her behalf. This finding concurs with that from the findings of the relationship between describing and propensity to own.

## **22. Describing - To simplify**

There was a moderate correlation between the two variables,  $r=0.32$ ,  $p<0.01$ ,  $n=82$ . This means that athletes who are aware of their thoughts and feelings and able to express it verbally, are more inclined to have the habit of solving complex problems in easy ways. They are in the habit of searching for simple solutions and not complicate a matter more than what is necessary.

## **23. Describing - Resilience**

There was a strong correlation between the two variables,  $r=0.45$ ,  $p<0.01$ ,  $n=82$ . This means that athletes who aware of their thoughts and feelings and able to express it verbally are more inclined to have the habit of not giving up easily. This athlete will attempt to resolve challenges despite difficulties he/she might be experiencing. It might be that the athlete who is aware of how he/she experiences the challenges and being able to label these experiences verbally, might be putting the challenge into a clearer perspective.

## **25. Describing - Propensity to handle frustration**

There was a moderate correlation between these two variables,  $r=0.30$ ,  $p<0.01$ ,  $n=82$ . This indicates that athletes who aware of their thoughts and feelings and able to express it verbally are more inclined to have the habit of dealing with frustration in a positive manner. Frustration comes as a result of obstacles being in the way of reaching goals. This is especially applicable to the sport context where athletes are continuously setting goals and aiming to attain them. The more aware an athlete is of his/her inner experiences and being

able to label them in words, the more likely the athlete will attempt to deal with obstacles in such a way that his/her behaviour remains directed at achieving the set goals.

### **30. Describing - Problem solving**

A strong correlation was found between these two variables,  $r=0.40$ ,  $p<0.01$ ,  $n=82$ . This means that athletes who are aware of their thoughts and feelings and able to express them verbally, are more inclined to have the habit of engaging with challenges on a conceptual, social and practical level and successfully manage these challenges and difficulties when attempting to resolve them. The athletes who are more mindful in his/her verbal labelling of thoughts and feelings are more likely to address problems and try to solve them constructively rather than ignoring them.

### **31. Describing - Responsiveness**

A moderate correlation was established between these two variables,  $r=0.32$ ,  $p<0.01$ ,  $n=82$ . Athletes who are aware of their thoughts and feelings and able to express them verbally, are more inclined to have the habit of acting immediately in a situation when and as necessary. These athletes will give attention to a situation immediately and assess whether the situation requires a quick response from them and then act accordingly.

### **32. Describing - Innovation**

A moderate correlation was found between these two variables,  $r=0.39$ ,  $p<0.01$ ,  $n=82$ . These results indicate that an athlete who is aware of his/her thoughts and feelings and able to express them verbally, is more inclined to have a habit of finding new ways and identifying better processes and methods in order to improve on current ways of working and dealing with matters. An athlete who is aware of his/her thoughts and able to label these verbally will be more inclined to try new ways of training and improving performance.

### **37. Describing - Self-confidence**

A moderate correlation was found between these two variables,  $r=0.37$ ,  $p<0.01$ ,  $n=82$ . This indicates that when an athlete is aware of his/her thoughts and feelings and able to verbally label them, he/she is more inclined to have the habit of acting and behaving in a manner with a high level of trust and conviction in his/her own abilities. The athlete, by being able to label his/her own thoughts and feelings will thus be more likely to feel and act secure in knowing what he/she is capable of.



### **38. Describing - Leadership**

A moderate correlation was found between these two variables,  $r=0.38$ ,  $p<0.01$ ,  $n=82$ . This correlation indicates that an athlete who is aware of his/her own thoughts and feelings and able to label it verbally, will be inclined to have the habit of integrating resilience, discipline, a team orientated approach, propensity to act swiftly and with confidence in leading a group of people towards a successful outcome.

### **41. Non-judging of inner experience - To simplify**

A moderate correlation was found between these two variables,  $r=0.30$ ,  $p<0.01$ ,  $n=82$ . This means that an athlete who is aware of his/her own thoughts and feelings and does not evaluate these to be positive or negative, will be more likely to have a habit of approaching problems and challenges in a manner that is not making the problem or challenge more complex. Rather than being critical of his/her own thoughts and feelings in a challenging situation, the athlete will more likely tend to acknowledge his/her thoughts and feelings and not let it distract him/her from the task at hand.

### **58. Non-reactivity to inner experience - Propensity to own**

A moderate correlation was between these two variables,  $r=0.36$ ,  $p<0.01$ ,  $n=82$ . This correlation means that the more an athlete allows his/her thoughts to come and go without getting caught in them, the more likely the athlete will be inclined to have the habit of attempting to deal with challenges and difficulties by him/herself.

### **59. Non-reactivity to inner experience - Propensity to hand-off**

A strong negative correlation was found between these two variables,  $r=-0.44$ ,  $p<0.01$ ,  $n=82$ . This indicates that an athlete who is aware of his/her own thoughts and feelings and allows these thoughts and feelings to come and go without getting caught up in them, will be less likely to have the habit of preferring another person to handle challenges and difficulties. The athlete will rather have the habit of taking ownership of challenges and difficulties and not rely on other to do on his/her behalf. This is consistent with the findings of the correlation between non-reactivity to inner experience and propensity to own.

### **68. Non-reactivity to inner experience - Problem solving**

A moderate correlation was found between these two variables,  $r=0.33$ ,  $p<0.01$ ,  $n=82$ . This indicates that an athlete who lets his/her thoughts come and go without getting caught up in it, will more likely have the habit of addressing problems in a constructive manner. This

athlete will approach a problem on a practical, social and conceptual level whilst aiming to successfully solve the situation.

#### **69. Non-reactivity to inner experience - Responsiveness**

A moderate correlation was found between these two variables,  $r=0.34$ ,  $p<0.01$ ,  $n=82$ . This indicates that an athlete who lets his/her thoughts come and go without getting caught up in it, will more likely have the habit of assessing and responding to a situation immediately and in an appropriate manner. The athlete will thus not get carried away by his/her own thoughts but rather view the situation objectively, which will allow for a swift response.

#### **70. Non-reactivity to inner experience - Innovation**

A moderate correlation was found between these two variables,  $r=0.39$ ,  $p<0.01$ ,  $n=82$ . This indicates that an athlete who lets his/her thoughts come and go without getting caught up in it, will more likely have the habit of seeking novelties and new ways to improve. Not getting caught up and carried away by his/her own thoughts can allow and athlete to be more task orientated and attempt novel techniques without letting his/her thoughts about the new technique overshadow the benefits and usefulness of the technique in question.

#### **74. Non-reactivity to inner experience - Altruism**

A moderate correlation was found between these two variables,  $r=0.31$ ,  $p<0.01$ ,  $n=82$ . This indicates that an athlete who lets his/her thoughts come and go without getting caught up in it, will more likely have the habit of helping others without expecting anything in return. This is a useful habit to have in a team sport environment where the team goal takes priority and team members attempt to assist each other in order to attain the set goal.

#### **83. Acting with awareness - Team inclination**

A moderate correlation was found between these two variables,  $r=0.31$ ,  $p<0.01$ ,  $n=82$ . This correlation indicates that an athlete who is focused on the task at hand (not being on autopilot) will likely have the habit of preferring to work in a team as opposed to working individually. This result is interesting as the 82 athletes were representative of both individual and team codes. It might be kept in mind that individual code athletes function in teams as well because the team's composition will consist of different type of team members such as a coach and training partner.

#### **90. Acting with awareness - People positive**

A moderate correlation was found between these two variables,  $r=0.35$ ,  $p<0.01$ ,  $n=82$ . This correlation indicates that an athlete who is focused on the task at hand (not being on

autopilot) will likely have the habit of building positive relationships with those around him/her.

### **91. Acting with awareness - Discipline**

A moderate correlation was found between these two variables,  $r=0.30$ ,  $p<0.01$ ,  $n=82$ . This correlation indicates that an athlete who is focused on the task at hand (not being on autopilot) will likely have the habit of adhering to structure and rules for behaviour.

### **93. Acting with awareness - Altruism**

A moderate correlation was found between these two variables,  $r=0.30$ ,  $p<0.01$ ,  $n=82$ . This correlation indicates that an athlete who is focused on the task at hand (not being on autopilot) will likely have the habit of assisting others who needs help. The athlete will tend to not want any favours in return for his/her assistance provided.

### **94. Acting with awareness - Self-confidence**

A moderate correlation was found between these two variables,  $r=0.33$ ,  $p<0.01$ ,  $n=82$ . This correlation indicates that an athlete who is focused on the task at hand (not being on autopilot) will likely have the habit of going about his/her life in a confident and secure manner. The athlete who is fully present in the moment and faced with a situation will more likely tend to deal with it confidently knowing his/her limitations and strengths and what he/she can achieve or accomplish in the given situation.

### **95. Acting with awareness - Leadership**

A moderate correlation was found between these two variables,  $r=0.32$ ,  $p<0.01$ ,  $n=82$ . This correlation indicates that an athlete who is focused on the task at hand (not being on autopilot) will likely have the habit of integrating his/her resilience, discipline, team orientation, responsiveness and confidence traits and habits to lead a group of people. Being focused on the task at hand and disciplined in his/her thoughts should enable an athlete to make decisions and give guidance to the benefit of the team, taking the context into account.

### **8.9.3 FFMQ versus PVQ (centered)**

Each subscale of the FFMQ have been compared to each of the 10 values of the PVQ to establish if any correlations exist between these subscales. Pearson correlation coefficients were calculated. Correlations between 0.40 and 1.00 (r-values) were interpreted as strong, correlations between 0.30 and 0.40 as moderate (indicated in yellow), correlations between 0.10 and 0.30 as small (indicated in blue) and correlations  $<0.10$  as weak (Cohen, 1992).

An analysis of the correlations found is provided directly below the table.

Table 8.26 FFMQ versus PVQ (centered)

	Mindfulness variable	Value	Pearson r value	Pearson p value	N
1.	Observe	Self-direction (centered)	0.16	0.16	82
2.	Observe	Power (centered)	-0.13	0.25	82
3.	Observe	Universalism (centered)	-0.04	0.72	82
4.	Observe	Achievement (centered)	-0.06	0.60	82
5.	Observe	Security (centered)	-0.06	0.57	82
6.	Observe	Stimulation (centered)	0.25	0.02	82
7.	Observe	Conformity (centered)	-0.10	0.36	82
8.	Observe	Tradition (centered)	-0.18	0.11	82
9.	Observe	Hedonism (centered)	0.14	0.21	82
10.	Observe	Benevolence (centered)	0.17	0.13	82
11.	Describing	Self-direction (centered)	0.10	0.35	82
12.	Describing	Power (centered)	0.09	0.41	82
13.	Describing	Universalism (centered)	0.04	0.69	82
14.	Describing	Achievement (centered)	-0.01	0.91	82
15.	Describing	Security (centered)	0.04	0.73	82
16.	Describing	Stimulation (centered)	0.13	0.26	82
17.	Describing	Conformity (centered)	-0.04	0.73	82
18.	Describing	Tradition (centered)	-0.32	<0.01	82
19.	Describing	Hedonism (centered)	0.04	0.71	82
20.	Describing	Benevolence (centered)	-0.00	0.97	82
21.	Non-judging of inner experience	Self-direction (centered)	0.22	0.04	82
22.	Non-judging of inner experience	Power (centered)	-0.10	0.39	82
23.	Non-judging of inner experience	Universalism (centered)	0.04	0.73	82
24.	Non-judging of inner experience	Achievement (centered)	0.04	0.69	82



	Mindfulness variable	Value	Pearson r value	Pearson p value	N
25.	Non-judging of inner experience	Security (centered)	-0.04	0.71	82
26.	Non-judging of inner experience	Stimulation (centered)	0.08	0.45	82
27.	Non-judging of inner experience	Conformity (centered)	-0.14	0.22	82
28.	Non-judging of inner experience	Tradition (centered)	-0.09	0.40	82
29.	Non-judging of inner experience	Hedonism (centered)	0.11	0.32	82
30.	Non-judging of inner experience	Benevolence (centered)	-0.07	0.51	82
31.	Non-reactivity to inner experience	Self-direction (centered)	0.06	0.57	82
32.	Non-reactivity to inner experience	Power (centered)	-0.14	0.22	82
33.	Non-reactivity to inner experience	Universalism (centered)	0.09	0.43	82
34.	Non-reactivity to inner experience	Achievement (centered)	-0.02	0.84	82
35.	Non-reactivity to inner experience	Security (centered)	-0.24	0.03	82
36.	Non-reactivity to inner experience	Stimulation (centered)	0.23	0.04	82
37.	Non-reactivity to inner experience	Conformity (centered)	-0.03	0.79	82
38.	Non-reactivity to inner experience	Tradition (centered)	-0.04	0.75	82
39.	Non-reactivity to inner experience	Hedonism (centered)	0.00	0.97	82
40.	Non-reactivity to inner experience	Benevolence (centered)	0.16	0.16	82
41.	Acting with awareness	Self-direction (centered)	0.11	0.32	82
42.	Acting with awareness	Power (centered)	-0.11	0.33	82
43.	Acting with awareness	Universalism (centered)	-0.09	0.40	82
44.	Acting with awareness	Achievement (centered)	-0.07	0.55	82
45.	Acting with awareness	Security (centered)	0.16	0.15	82
46.	Acting with awareness	Stimulation (centered)	0.07	0.52	82
47.	Acting with awareness	Conformity (centered)	-0.08	0.49	82
48.	Acting with awareness	Tradition (centered)	0.02	0.84	82
49.	Acting with awareness	Hedonism (centered)	0.00	1.00	82
50.	Acting with awareness	Benevolence (centered)	0.00	0.99	82

Correlations consist of one moderate correlation and four weak correlations. An analysis of the moderate correlation found is as follows. The number refers to the number of the item in the above table.

## **18. Describing - Tradition**

There was a moderate, negative correlation between the two variables,  $r=-0.32$ ,  $p=<0.01$ ,  $n=82$ . This indicates that the more an athlete is aware of his/her thoughts and feelings and able to express it verbally, the less likely an athlete will prioritise the value of tradition and possibly also value humbleness and modest behaviour to a lesser degree.

### **8.9.4 Discussion**

The interrelationships between habits, mindfulness and values have been explored by correlating results obtained from the PVQ, Shadowmatch™ Worksheet and FFMQ. By completing these questionnaires and worksheet, the athletes indicated their value preferences, habits and awareness levels. The data suggests that there are correlations between certain habits, values and mindfulness variables. Research studies have pointed to the relationship between mindfulness and habits by focusing on how mindfulness/and or meditation training can weaken unwanted habits and how mindfulness training can assist an individual in directing behaviour more intentionally, rather than to rely on habitual reactions (Bishop et al., 2004; Chong et al., 2015; Wenk-Sormaz, 2005).

Mindfulness training has also been used to successfully ease the consequences of habitual worrying and might as a result, serve as a way to combat worry in the first place (Verplanken & Fisher, 2014). This present study focussed on the relationship between different mindfulness variables, habits and values. It is noteworthy that relationships were found among some of these variables and this suggests that a link exists between the triad of habits, mindfulness and values. This is a crucial finding and it answers to all the aims of this study. There appear to be more and stronger correlations between mindfulness variables and habits than between values and habits, and mindfulness variables and values.

To understand the level of success that athletes reach, it is important to study factors such as level of participation, gender and type of sport (Hanrahan & Cerin, 2009). It can be ascertained that success in sport encompasses a variety of factors and no one factor should be studied in isolation. The interplay between concepts in this study provides a new avenue for research since there is no existing data to which the specific interrelationships between habits, mindfulness and values can be measured. It is possible for coaches and athletes to create awareness of the interplay between these concepts as part of athlete development. Knowing which habits, values and mindfulness variables have an influence on each other

can contribute to the mental development of athletes and assist in assessing why an athlete is experiencing his/her sport in the manner that they do.

## **8.10 Conclusion**

There were 82 athletes from three different performance levels who participated in Phase 2 of this study. These athletes participated voluntarily and completed all the questionnaires and online worksheet in full.

The aims of this study will be described according to the data obtained from the PVQ, FFMQ, Value Checklist and Shadowmatch Worksheet. The fourth aim of determining if there are significant differences between the levels of participation relating to these psychological dynamics, habits, mindfulness and values are integrated into the discussion of the first three aims:

### **8.10.1 The psychological dynamics in the formation and maintenance of performance facilitating habits among athletes**

In this quantitative section of Phase 2, the athletes' results on the Shadowmatch™ Worksheet identified the habits of responsiveness, discipline, resilience, self-confidence and propensity to own as their strongest habits. Responsiveness was identified as the strongest habit.

When differentiated among the three different levels of participation, it is interesting to note that the national athletes had four of these habits as well established habits with the fourth (propensity to own) as a strong habit. The habit of responsiveness was their strongest habit. The provincial athletes identified only the habits of discipline and responsiveness as well established habits, with responsiveness as their strongest habit. The club athletes had no habits that were as well established as some of those of the national- and provincial athletes. They nevertheless also identified responsiveness as their strongest habit, though it is not as strongly developed as those of the national- and provincial athletes.

From this quantitative phase, one can draw the conclusion that certain habits tend to become stronger embedded in an athlete's life as the level of participation intensifies. 87% of Phase 2 athletes indicated that they are of the understanding that habits change/become stronger/weaker when an athlete's level of participation intensifies. Their view were supported by the findings of their results obtained from the Shadowmatch™ Worksheet. The habits of propensity to own, responsiveness, problem solving, discipline, self-confidence and leadership were identified as being stronger for national- and provincial athletes than for club level athletes. Though there were differences, there were no statistical significant differences

between the provincial- and national athletes in terms of how strong these habits have developed.

National athletes' habit of simplification is stronger developed than the club athletes. This is in accordance with the elite athletes in Phase 1, who identified simplification as a habit. This finding suggests that the higher the level of participation, the stronger the habit of simplification develops. The habits of resilience and innovation were also developed stronger among national athletes than club athletes and was a habit that was identified by the Phase 1 athletes as important in being a successful athlete.

### **8.10.2 The effect or impact of values and disconnected values on the formation and maintenance of performance facilitating habits among athletes**

The Phase 2 athletes indicated that generally (according to their responses on the Value Checklist), they gave preference to the values of loyalty, commitment, respect for others, honesty and happiness. It is interesting to note that Phase 2 athletes identified honesty as a general critical value, but not as a critical value needed to be successful as an elite athlete. Phase 1 athletes valued honesty in their sport careers.

The PVQ in itself, did not provide results that were statistical significant among the national-, provincial- and club athletes.

Certain values (as measured on the PVQ) of the Phase 2 athletes correlated with certain habits of the Shadowmatch™ Worksheet. It is indicative of the impact that certain values have on the formation and maintenance of certain habits. The interplay between these values and habits suggests that athletes who prioritise these values are inclined to also have the corresponding habits to a lesser or higher degree. The aim was to identify and determine the effect or impact of values and disconnected values on the formation and maintenance of performance facilitating habits among athletes. Most of the habits that correlate with these six PVQ values are habits that were identified by athletes as habits that assisted them in performing well.

These habits are consistent with the habits identified by the elite athletes in Phase 1. These include the habits of incorporating new techniques and ideas into training and competition (innovation), taking ownership of experiences and decisions (propensity to own), dealing effectively with frustration, being responsive, having confidence and the habit of being resilient. Being aware of these links between habits and values can assist an athlete in directing behaviour patterns and value priorities to assist him/her in developing holistically and have his/her development aimed specifically at a performance enhancing lifestyle and



approach to sport success and life in general. Table 8.27 illustrates the values that correlated with specific habits and the nature of the correlation:

Table 8.27 The relationship between PVQ values and Shadowmatch™ habits: Phase 2

<b>Value</b>	<b>Positive habit correlation</b>	<b>Negative habit correlation</b>
Self-direction	Propensity to own, individual inclination, innovation	Propensity to hand-off
Power		People positive, altruism
Universalism	Propensity to change, propensity to handle frustration, problem solving, responsiveness, innovation, self-confidence, leadership	
Achievement		Propensity to change, problem solving, people positive, conflict handling, altruism
Tradition	Propensity to hand-off	Propensity to own, resilience, self-confidence, leadership
Benevolence	Propensity to handle frustration, people positive, conflict handling, altruism	

### 8.10.3 The relationship between mindfulness and habits of athletes

One of the aims of this study was to determine the relationship between mindfulness and habits of athletes (Table 8.28). During Phase 1 interviews, the elite athletes exhibited a distinct awareness of their intrapersonal and interpersonal dynamics. They indicated an awareness of their physique and mental state. This awareness assisted them in directing their behaviour and incorporating behavioural patterns that assisted them in their performances. These habits are presented in Table 8.28 and have been consistently identified by the 82 athletes from Phase 2 in their Shadowmatch™ worksheets. The

mindfulness variables of the FFMQ, with the exception of the variable of observe, linked strongly with the habits and mindfulness states identified by the elite athletes in Phase 1, as well as the 82 athletes from Phase 2. This is significant because it indicates the importance of an athlete's level of mindfulness and how this correlates with certain behavioural patterns in his/her life. Being mindful can assist an athlete in developing critical habits necessary for high level performance as indicated by the elite athletes in Phase 1.

Table 8.28 illustrates the correlations between specific mindfulness variables and habits. The nature of the correlation is illustrated.

Table 8.28 The relationship between FFMQ mindfulness variables and Shadowmatch™ habits

<b>Mindfulness variable</b>	<b>Positive habit correlation</b>	<b>Negative habit correlation</b>
Observe		Propensity to hand-off
Describe	Propensity to own, to simplify, resilience, propensity to handle frustration, self-motivation, problem solving, responsiveness, innovation, people positive, discipline, conflict handling, altruism, self-confidence, leadership	Propensity to hand-off
Non-judging of inner experience	To simplify, problem solving, responsiveness	
Non-reactivity to inner experience	Propensity to own, to simplify, resilience, propensity to change, propensity to handle frustration, self-motivation, problem solving, responsiveness, innovation, people positive, altruism, self-confidence, leadership	Propensity to hand-off
Acting with awareness	Resilience, propensity to handle frustration, team inclination, people positive, discipline, conflict handling, altruism, self-confidence, leadership	

## 8.11 Summary

The results of the measuring instruments were provided in this chapter. Results were also analysed, discussed and synthesised with relevant literature throughout Chapter 8. In Chapter 9, the results of Chapters 4, 6 and 8 are discussed and collated. A conclusion to this study is then provided.

## CHAPTER 9

### Final discussion, recommendations and conclusion

#### 9.1 Introduction

This chapter will discuss the results obtained in the different phases of this study and an interpretation will be made based on the results and discussions presented in previous chapters. Due to this study following a mixed methods approach, the 'principles for integration' outlined by Bazeley and Kemp (2012) were followed. The focus in this chapter is kept on the issues researched and not on the different approaches used. This assists in conducting the integration in a manner that is appropriate to the purpose of the study and integrating the components of the study interdependently and not as separate entities.

This study aimed to explore habits, mindfulness and values in the sport context. The core question for this research was: How do habits, mindfulness and values relate to the success of highly effective athletes? The study set out to explore this research question and create an understanding and awareness of the interplay between habits, mindfulness and values, as well as the nature and prevalence of habits and the role they play in an athlete's career. Introducing the three concepts namely habits, mindfulness and values in a study and attempting to pinpoint a possible relationship among them in the sport context proved to be a complex task. This chapter will aim to connect the data obtained relating to these concepts in order to provide an understanding of the role that these concepts play in the sport context.

Firstly, interviews were conducted with seven of South Africa's elite athletes to create a platform and data to work from. This formed part of the qualitative Phase 1 of this study. Secondly, this data was then used to draft one of the assessment tools for the quantitative Phase 2. Data obtained from Phase 1 could be used as a reference for all data gathered in Phase 2. Athletes from different performance levels were included in Phase 2 to ascertain their experiences of habits, mindfulness and values. As per mixed design methods, the data from Phase 1 and Phase 2 was integrated and it is this integration and discussion that will be provided in this chapter.

## 9.2 Consequential discussion

### 9.2.1 Addressing the research problem and purpose of the research

As mentioned in Chapter 1, I have combined my role of athlete, psychologist and researcher for the purpose of concluding this study mindfully, according to my values and habit of ending off important documents in my usual way.

During my years of competitive sport participation on club-, provincial-, national- and international level, I continuously became aware of the dynamics involved in success and failure. I have experienced that these dynamics, in my experience, changed as I progressed through the ranks of my performance levels. As an athlete, I have not been mindful of these changes at the time of transition which, upon reflection, I can now easily conclude, created unnecessary complications and loss of valuable training and development time. The research problem identified in Chapter 1 addressed this specific problem that athletes encounter throughout their careers. As we progress from one performance level to another as athletes, we increasingly become aware of the mounting pressure. At training camps and in sessions with our coaches we often hear that we need to become mentally tough and psychologically ready for our matches and events. The research problem speaks exactly to this type of scenario that most (if not all) athletes face at some point in their sport careers.

It is with this in mind that the process of talent identification can be enhanced in order to produce the level of skill (mentally and physically) needed to participate successfully and excel consistently as an athlete. The role of habits in sport in general, as well as sport specific habitual patterns, might contribute to talent identification, development and understanding of elite and future-elite athletes. Addressing the research problem was done by generating the purpose of the study which was to explore how habits, mindfulness and values are experienced by athletes and how (and if) these experiences differ among different levels of sport participation.

The data obtained in this study indicated prospects to assist identified talented athletes in their development. Being aware of performance conducive habits and values of athletes can create a more holistic development process for aspirant athletes. Addressing mindfulness levels of athletes pertaining to the way in which they behave and reasons for doing so can also contribute to a more holistic process of development which is not just set largely on physical development with a scant amount of mental skills development. The data relating to the research problem can be found in the discussion of the research aims within this chapter.

### **9.2.2 Research hypothesis**

This study had three hypothesis:

The first was that there will be a strong relationship between habits, mindfulness and values. These three concepts will share a close triadic relationship.

The second was that the triadic relationship between habits, mindfulness and values will be experienced differently by athletes on different levels of performance. The level of mindfulness will differ among elite (athletes who have consistently performed exceptionally internationally) and non-elite athletes (athletes performing on national-, provincial- and club level). Elite athletes might also exhibit different habits and their values might be more refined and specific to their sport experience than those of the non-elite athletes.

The third hypothesis was that habits will play a crucial role in the success of highly effective athletes and that there would be general correlating habits for all elite athletes that is not sport code specific, and that these athletes will also exhibit sport code specific performance facilitating habits. Elite athletes will have a sense of awareness of some of their productive and performance limiting habits and it is expected that awareness per se can be a prerequisite to choosing or changing habits. Values will play a crucial role in the creation of new habits, maintenance of existing habits and changing or even transforming old habits into new habits. Some of the performance facilitating habits may be general and non-sport specific and some performance facilitating habits may be sport specific.

All three hypothesis were confirmed by the data obtained in this study. It will be explored in the discussion of the aims of the study.

### **9.2.3 Aims of the research study**

This study had four aims and this chapter will explore these aims and document how these aims were met in the two phases of this study. The aim of determining if there were significant differences between the levels of participation relating to psychological dynamics, habits, mindfulness and values are integrated within the first three aims of exploring, identifying and determining habits, mindfulness and values among athletes.

#### **9.2.3.1 The psychological dynamics in the formation and maintenance of performance facilitating habits among athletes**

Posing the questions relating to habits to athletes has been an interesting experience throughout this research project. It seemed to be a concept that have not received much attention or thought from the majority of athletes. The concept was continuously met by

reactions of intrigue and sometimes confusion as it was a concept that through conversations and explanations made them aware of their habits or sometimes absence of habits. The elite athletes in Phase 1 identified sport specific habits that they felt contributed to their success. These included the habits of visualisation, pre-performance routines and the repetition of training routines/simulation in their performances on the day of competition. These athletes also identified the habit of simplifying their lives outside of the sport context.

In the qualitative section of Phase 2, the athletes consciously identified nine habits that they experienced as influences in their sport careers. Some of these habits contributed to their success whilst others were detrimental to their sport success. Habits contributing to their success were identified as the habits of hard work, visualisation, health habits, positive thinking and self-talk, warm-up routines, mental skills training and the habit of avoiding bad habits. These athletes identified the habits of procrastination and negative thinking as being detrimental to their performances. Interestingly, the Phase 1 athletes did not identify any negative habits in their lives.

In the quantitative section of Phase 2, the athletes' results on the Shadowmatch™ Worksheet identified the habits of responsiveness, discipline, resilience, self-confidence and propensity to own as their strongest habits. Responsiveness was identified as the strongest habit across the three different levels of performance.

An important finding to note is the prevalence of the habit of simplification. It was identified by the elite athletes as a key habit in their lives. In Phase 2 of the study, it was found that national athletes' habit of simplification was stronger developed than the club athletes. This finding suggests that the higher the level of participation, the stronger the habit of simplification develops. The habits of resilience and innovation were also developed stronger among national athletes than club athletes. These were also habits that were noted by the elite athletes and it suggests that these habits might become stronger and more prevalent as the level of performance intensifies.

This study had the advantage of gathering the athletes' views and experiences of habits through questionnaires where they could think about their habits and answer accordingly, as well as through an online worksheet where athletes could not manipulate their experiences of habits. The added qualitative section of interviews was a practical addition to this study, because the concept of habit could be explored in verbatim detail according to the experiences of the athletes. This assisted the researcher in exploring athletes' understandings of habits.

According to the results of the various phases and sections of this study, it appears that habits play a crucial role in the performance of athletes and their experiences of their success. Athletes have internalised certain patterns of behaviour that they use in certain situations. Some habits are context specific whilst others are so strongly developed that the athletes experience these habits as a way of life and they cannot separate themselves from the specific habits. Some athletes indicated that they did not have any habits, but upon closer inspection it was realised that although they might not be mindful of these habits, they still existed. Athletes have indicated that some of their thoughts are habitual, actions are habitual and the manner in which they approach situations are habitual.

Habits seem to play such a crucial role in athletes' lives, that it does beg the question as to why habits are not explored more often in the athletic population. Athletes are rarely taught about habits. Instead, they are taught about mental skills. The awareness around the concept of habit and the influence that habits have on the performance and training of athletes are undervalued and underutilised. This notion is supported by the fact that it was a near impossible task to find research literature on the concept of habits in sport. The notion is also supported by the confusing feedback received from some athletes relating to their understanding and experiences of habits in their own lives.

From this study it is vital to note that athletes, in general, have collectively identified the habits of simplification, responsiveness, resilience and innovation as critical habits required for success in sport. The athletes viewed these concepts as habits and not mental skills and should possibly be treated as such when taught to athletes. It is important to tap into the experiences of athletes and get their collective views on what they find assist them in achieving success. They ably assisted in identifying these core habits.

The athletes have also pointed out that they are continuously aware of their state of mind and physique. This state of mindfulness has become habitual in itself. They have indicated that they are constantly aware of their values and try to live accordingly. This continuous checking of their behaviour and if it is correlating with their values has become habitual in itself. It is therefore logical to derive the conclusion that mindfulness can be a habit and has indeed developed as a habit for some elite athletes. It is also logical to conclude that the continuous adapting/and or maintenance of behaviour to be in line with values is a habit and have indeed developed as such among most of the elite athletes. This is worthy to consider when assisting athletes in developing their potential on and off the playing field.



### **9.2.3.2 The effect or impact of values and disconnected values on the formation and maintenance of performance facilitating habits among athletes**

The elite athletes in Phase 1 identified values that they strive to uphold and have developed through their years of sport participation. They value social relationships, social responsibility (by being good role models), concern for others, creativity, ability, fun, personal challenge, self-discipline, self-knowledge, maintaining or improving health, adventure, sportsmanship and fair play, perseverance, self-control, fairness, self-realisation and self-expression. They noted that they have developed habits to ensure their behaviour corresponds to their values. When a disconnect existed between their behaviour and values, the elite athletes who were aware of counterproductive behaviour and habits to their value systems, successfully changed and adapted to behaviour that was more productive and representative of what they believed and found important in life. This constant awareness of their values and behaviour came across as a strong habit in itself, since the elite athletes made a consistent conscious attempt to ensure that their behaviour correlated with their value systems.

Related even more specifically to the sport context, the Phase 1 athletes identified four values they felt were critical to have as an elite athlete: commitment, honesty, balance and integrity. When asked directly about critical values as an athlete, the national-, provincial- and club athletes could distinguish between different values presented to them to identify these same four critical values from a list that included a variety of values. It is interesting to note that all three levels of participation did not rank the value of honesty among the top four values they felt were critical to being a successful athlete. The Phase 2 athletes indicated that generally, they gave preference to the values of loyalty, commitment, respect for others, honesty and happiness. It is interesting to note that Phase 2 athletes ranked honesty high when asked to identify their personal values, but ranked it low when asked directly about the importance of having honesty as a value needed to be successful as an elite athlete.

Self-awareness, as an existing value in the athletes' lives, was identified by only 37 athletes. Integrity was identified by 49 athletes and the fourth critical value of balance was identified by 45 athletes. The statistics relating to the importance of these values in Phase 2 athletes' lives are significant because it reflects a marked difference in priority between them and the elite athletes.

The elite athletes indicated that their values play a role in their choice of behaviour when competing. This is a significant observation, because the values identified by the elite athletes developed into fixed ways of living and habits were formed accordingly. This suggests a possible avenue for athlete development by creating awareness around athletes'

values and how they choose to behave and subsequently develop. In Chapter 8, Table 8.27, a summary was provided of the values and the habits that correlated with the specific values as measured on the PVQ and Shadowmatch™ Worksheet. The data obtained suggested that there is a definite link between values and behavioural patterns, and invites the possibility to assist athletes by identifying their values (thereby also creating a state of mindfulness), assess their behavioural patterns and develop more appropriate or corresponding values and habits conducive to sport success.

### **9.2.3.3 The relationship between mindfulness and habits of athletes**

The elite athletes in Phase 1 indicated a heightened awareness of the psychological component of their specific sports. They felt that being mindful of their own psychological traits and ensuring that they included these in their training and participation were vital for their success. The elite athletes also linked being mindful of their emotions and physical health as an important facet to being a successful athlete. Being able to be aware of their emotional and physical states assists them in adapting to these states and regulate themselves to perform. Their experiences of mindfulness and performance is supported by Langley (2011) who indicated that an athlete who is aware of his/her body can use this awareness to improve performance.

The Phase 2 athletes recognised the importance of mindfulness. Sixty one percent of these athletes indicated that awareness of one's surroundings is important to performing well. Quite a high number of athletes (72%) indicated that they are mindful of how they are impacted by the behaviour of those around them. The Phase 2 athletes seemed to have a high level of awareness regarding the interpersonal dynamics between people. This was consistent with the Phase 1 athletes who were also very aware of behaviour (theirs and the behaviour of others) that was counterproductive to optimal performance. Their awareness of what/who prevented their optimal behaviour/performance led them to initiate change in order for them to move forward and reach the performance levels they believed they could.

Generally, the athletes from national-, provincial- and club level reflected the same level of mindfulness experiences according to their results on the FFMQ. Two differences among the levels were found to be that national- and provincial athletes were more aware of their thoughts and feelings and able to express it verbally (describing) than the club athletes. National athletes scored higher on the subscale of non-reactivity to inner experience than the provincial- and club athletes. Though the difference was not statistically significantly different between the national- and club athletes, the difference was statistically relevant between the national- and provincial athletes. This means that the national athletes have

mastered the skill of letting their thoughts come and go without getting caught up in it more so than the provincial athletes. A possible reason for this interesting differentiation might be that the national athletes' level of participation is more intense than those of the provincial athletes and therefore, this level of mindfulness is required to be a more successful athlete. It might be that the provincial athletes are still learning this skill. The difference relating to the club level athletes might be due to their experience of sport on a less competitive level where they are mindful of their inner experience but due to the competitive nature of club level sport, they might not be taking these inner experiences as serious as the national athletes whose performances are crucial for selection, placements and even sponsorships.

During Phase 1 interviews, the elite athletes exhibited a distinct awareness of their intrapersonal and interpersonal dynamics. They indicated an awareness of their physique and mental state. This awareness assisted them in directing their behaviour and incorporating behavioural patterns that assisted them in their performances. The comparison of the mindfulness variables of the FFMQ with the habits of Shadowmatch™ in Phase 2 suggests a link between habits and mindfulness states. This is significant, because it indicates the importance of an athlete's level of mindfulness and how this correlates with certain behavioural patterns in his/her life. Being mindful can assist an athlete in developing critical habits necessary for high level performance as indicated by the elite athletes in Phase 1.

Athletes from Phase 1 and Phase 2 experienced a sense of awareness that assisted them in their sport performances. They indicated that they use their sense of awareness to interact better with people and to also observe changes in play or circumstances when they are performing. Athletes were also quite clear on the use of mindfulness in doing body checks and assessing their emotions. The majority of athletes indicated that mindfulness assists them in performing on a high level.

### **9.3 Limitations of the study**

This study aimed at exploring the concept of habits, mindfulness and values among a vast majority of athletes from a variety of sport codes. The extensive nature of this study in addressing three different concepts meant that participants were expected to complete a set of written questionnaires as well as an online worksheet. This is no easy feat to accomplish with athletes who are mostly interested in physical activities, rather than spending hours sitting still and completing a variety of questionnaires. Due to this, a big number of questionnaire responses from athletes had to be discarded, either due to questionnaires being incomplete or because athletes chose only certain questionnaires to complete instead

of completing the entire questionnaire battery. This limited the data obtained for this study, because the researcher aimed at including only the data sets from athletes that were entirely complete. This approach did have the benefit of providing consistent data that could be correlated across the three concepts being explored.

Another limitation due to the above mentioned problem area, was that certain sport codes were represented by only one athlete and it thus limited the data that could be used for each specific sport code. This may have had a confounding effect in the results. If more athletes could be represented in different codes, the data could have been used to draw comparisons between different sport codes. This could have provided knowledge as to how the three concepts of habits, mindfulness and values differed or corresponded in different sport codes. This could not be done due to the big number of incomplete questionnaires.

The study aimed at including a variety of culture groups. The demographic location of the researcher in Cape Town and the sport codes represented in this study limited the Phase 2 data to be inclusive of a larger population within the participating culture groups than what was initially envisaged. The culture groups in this study were diverse, but the number of participants within the culture groups were at times limited.

The statistical interpretation of the second phase of the study should be interpreted with caution due to the low Cronbach scores achieved by the participants in the Five Facet Mindfulness Questionnaire and Portrait Values Questionnaire. Although the majority of scores were not prohibitive and in the acceptable range for admittance, it must just be kept in mind that the scores were not very high. The researcher chose to use LSD post hoc testing and acknowledges that further investigations are needed to confirm significant findings.

Limited literature resources were found pertaining to habits in sport. This provided difficulties due to there being little known published work, to date, on the habits of athletes.

## **9.4 Recommendations for future research**

For the purpose of ongoing research and the initiation of debate, it is recommended that the three concepts of habits, mindfulness and values be explored individually in different studies among athletes from different sport codes and different levels of participation. The detailed nature of exploring these concepts on a larger scale can be done more effectively if researched as individual concepts. With a bigger data pool, it will be possible to identify certain habits, mindfulness levels and values that are sport code specific and thus can assist in athlete development.

This study provided ample data for the possibility of exploring if performance facilitating habits and values exist for specific sport codes and how the awareness of these concepts can assist athletes in specific sport codes. One can then establish comprehensive profiles of successful athletes in specific sport codes that can assist with athlete development. It will also be insightful to do specific research projects in different cultural groups pertaining to specific sport codes to establish if there are differences in culture or sport codes.

It is possible for the focus to shift away from only teaching athletes mental skills and how to use them, to the establishment of mental skills as a habit that athletes can incorporate into their sport careers and general way of life. The approach to assisting athletes developing their potential mentally and physically might require a new vantage point. This vantage point can possibly exist in developing critical habits and values in athletes through personal development programmes aimed at exactly this. Programmes such as these that aim at habit development are already used in the corporate world (De Villiers, 2009). The results of this study negates the importance of programmes such as these for athletes. Incorporating certain value sets should also be considered as this study indicated correlations among values and habits.

## **9.5 Conclusion and reflective thoughts**

This thesis aimed at exploring the role of habits, mindfulness and values in athletes' lives. The research entered an area of sport that has not been researched in such depth. The configuration of the concepts of habits, mindfulness and values is a novel research ground and one that will hopefully grow in future with this thesis as a basis to initiate future research from. This study has successfully addressed all the aims that was set out in Chapter 1. It has also added to the body of knowledge in the world of sport since research combining the three concepts of habits, mindfulness and values has, according to available research, not been done to date.

This study has also aimed at distinguishing the experiences of athletes from four different levels of performance, namely elite, national-, provincial- and club. The introduction of the elite category was done for the purpose of looking beyond the accepted norm of elite, which is commonly referred to as national. Statistical significant differences in experiences were noted among the levels of performance and this gives weight to the data obtained. This study is unique in its approach to researching dynamics related to sport success and can provide a platform for future research aimed at the improvement of athlete development.

This study started out with the following quote in Chapter 1 and I feel that it is fitting to end with the same quote:

*"We are what we repeatedly do.*

*Excellence then is not an act but a habit" – Aristotle (De Villiers, 2009).*

Upon close reflection, the reader will notice that this study, by returning to this quote, have come full circle. With the first mention of this quote in Chapter 1, a journey started to try and understand how athletes made sense of habits, mindfulness and values in their lives and attainment of success. Athletes were contacted, interviews were held, more athletes were contacted and pursued to return their valuable and hard earned experiences set down on paper and online. Months and years rolled on and then finally, the data was gathered, integrated and the search for meaning started in all earnest... just to arrive back at the words of Aristotle:

*"We are what we repeatedly do. Excellence then is not an act but a habit."*

Upon closer inspection of the data obtained in this study, and upon a closer inspection of our own lives, one can easily identify the role of habits in the way we talk, listen, attempt or avoid people and issues, the way we work and how we deal with more trivial things like traffic and washing dishes. Our habits are everywhere and we become our habits as so gracefully pointed out by Aristotle. The athletes have indicated this exact point in sharing their experiences and views on habits, their awareness and sometime unawareness of critical aspects in their lives, and the values that they attempt to live by.

Aristotle has provided us with the recipe for success and the athletes have confirmed it. It is in what we do, say, think and choose to feel... continuously, consistently and without fail. The determining difference in what we accomplish in life, lies in the experience of the process that Aristotle advocates for success. Simply put: This study has indicated that perceiving our experiences mindfully, can assist us in directing our habits. Being aware of our values and ensuring that our behaviour is aligned to them, assist us in directing our habits. Our habits then, becomes our excellence, our mediocrity or our failure.

The choice is mindfully ours.

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# APPENDIX A

## **Semi-structured interview (English version)**

1. How old were you when you wore the Green and Gold for the first time and how long have you been involved in your sport at that time?
2. Do you come from a family where sport was always an integral part of life?
3. Were you motivated by someone else's performance in your sport when you first started out?
4. What does it take to perform so well on the level that you are performing at?
5. Do you think you have a specific talent for your sport or do you think you perform well because of the effort that you put in?
6. How many hours per week do you dedicate to training?
7. Can you identify any habits you engage in before and/or after your performance that you feel contribute to your success?
8. Are you consciously aware of these habits before or after a performance and how do you ensure that you engage in these habits?
9. If you think about your life away from sport, do you have any other habits that you are aware of? Explain.
10. Would you say that these habits play a role in your experience of your sport? How?
11. What motivates you to train and be involved in your sport?
12. Identify your 5 most important values.
13. Have you compromised on any of your values during your sport career? If so, which values?
14. How would you say do your values influence your experience of your sport and your level of success?
15. Have you always been aware of the role your values play in your sport or did you become aware of it once you've reached a certain level of performance?
16. Can you think of a situation in your career where your behaviour did not reflect your values? What did you do then?
17. How important is it that athletes are aware of their values and habits?
18. What do you think it means to be mindful?
19. How can you apply the concept of mindfulness to your sporting career?

20. How do you think athletes can benefit of being mindful of their everyday habits?
21. Are you aware of behaviour that is counterproductive for your sport performance?
22. In what way are you mindful of the psychological component of your performance?
23. Do you think that mindfulness is helpful to all sporting codes or do you think it can assist performance in only some of the codes? Explain.
24. Would you consider doing meditation to assist you in improving your performance?



## Semi-gestruktureerde onderhoud (Afrikaans version)

1. Hoe oud was jy toe jy die Groen en Goud vir die eerste keer gedra het en hoe lank was jy toe reeds betrokke by jou sport?
2. Kom jy van 'n familie waar sport altyd 'n integrale deel van lewe was?
3. Toe jy met jou sport begin het, was jy gemotiveerd deur iemand anders se prestasie in die sport?
4. Wat vereis dit om so goed te presteer op die vlak wat jy doen?
5. Dink jy, jy het 'n spesifieke talent vir jou sport of dink jy, jy doen goed agv al die moeite wat jy insit?
6. Hoeveel ure per week bestee jy aan oefening?
7. Kan jy enige gewoontes voor/en of na jou deelname identifiseer wat bydra tot jou sukses?
8. Is jy bewus van hierdie gewoontes en hoe verseker jy dat jy hierdie gewoontes nakom?
9. As jy na jou lewe 'weg van sport' dink, het jy enige ander gewoontes waarvan jy bewus is?
10. Sou jy se dat hierdie gewoontes 'n rol speel in jou ervaring van jou sport? Hoe?
11. Wat motiveer jou om te oefen en betrokke te wees in jou sport?
12. Identifiseer jou 5 belangrikste waardes.
13. Het jy enige van jou waardes prys gegee in jou sportloopbaan? Indien, watter waardes?
14. Hoe sal jy se beïnvloed jou waardes jou ervaring van jou sport en jou vlak van sukses?
15. Was jy altyd bewus van die rol wat jou waardes in jou sport speel of het jy eers bewus geword daarvan toe jy 'n spesifieke vlak van prestasie bereik het?
16. Kan jy aan 'n situasie in jou loopbaan dink waar jou gedrag nie jou waardes gereflekteer het nie? Wat het jy toe gedoen?
17. Hoe belangrik is dit dat atlete bewus is van hul gewoontes en waardes?
18. Wat dink jy beteken dit om 'mindful' te wees?
19. Hoe kan jy die konsep van 'mindfulness' in jou sport loopbaan toepas?
20. Hoe dink jy kan atlete daarby baatvind om 'mindful' te wees in hul alledaagse gewoontes?
21. Is jy bewus van gedrag wat teen jou resultate inwerk?
22. In watter mate is jy bewus van die sielkundige komponent van jou deelname in sport?
23. Dink jy 'mindfulness' is handig vir alle sportkodes of dink jy net sekeres kan daarby baatvind? Verduidelik.
24. Sal jy meditasie oorweeg as iets wat jy kan doen om jou resultate te verbeter?

# APPENDIX B

## Five Facet Mindfulness Questionnaire

### **Description:**

This instrument is based on a factor analytic study of five independently developed mindfulness questionnaires. The analysis yielded five factors that appear to represent elements of mindfulness as it is currently conceptualized. The five facets are observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. More information is available in:

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

- \_\_\_\_\_ 1. When I'm walking, I deliberately notice the sensations of my body moving.
- \_\_\_\_\_ 2. I'm good at finding words to describe my feelings.
- \_\_\_\_\_ 3. I criticize myself for having irrational or inappropriate emotions.
- \_\_\_\_\_ 4. I perceive my feelings and emotions without having to react to them.
- \_\_\_\_\_ 5. When I do things, my mind wanders off and I'm easily distracted.
- \_\_\_\_\_ 6. When I take a shower or bath, I stay alert to the sensations of water on my body.
- \_\_\_\_\_ 7. I can easily put my beliefs, opinions, and expectations into words.
- \_\_\_\_\_ 8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.
- \_\_\_\_\_ 9. I watch my feelings without getting lost in them.
- \_\_\_\_\_ 10. I tell myself I shouldn't be feeling the way I'm feeling.
- \_\_\_\_\_ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
- \_\_\_\_\_ 12. It's hard for me to find the words to describe what I'm thinking.
- \_\_\_\_\_ 13. I am easily distracted.
- \_\_\_\_\_ 14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.



- \_\_\_\_\_ 15. I pay attention to sensations, such as the wind in my hair or sun on my face.
- \_\_\_\_\_ 16. I have trouble thinking of the right words to express how I feel about things
- \_\_\_\_\_ 17. I make judgments about whether my thoughts are good or bad.
- \_\_\_\_\_ 18. I find it difficult to stay focused on what's happening in the present.
- \_\_\_\_\_ 19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.
- \_\_\_\_\_ 20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.
- \_\_\_\_\_ 21. In difficult situations, I can pause without immediately reacting.
- \_\_\_\_\_ 22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.
- \_\_\_\_\_ 23. It seems I am "running on automatic" without much awareness of what I'm doing.
- \_\_\_\_\_ 24. When I have distressing thoughts or images, I feel calm soon after.
- \_\_\_\_\_ 25. I tell myself that I shouldn't be thinking the way I'm thinking.
- \_\_\_\_\_ 26. I notice the smells and aromas of things.
- \_\_\_\_\_ 27. Even when I'm feeling terribly upset, I can find a way to put it into words.
- \_\_\_\_\_ 28. I rush through activities without being really attentive to them.
- \_\_\_\_\_ 29. When I have distressing thoughts or images I am able just to notice them without reacting.
- \_\_\_\_\_ 30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.
- \_\_\_\_\_ 31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.
- \_\_\_\_\_ 32. My natural tendency is to put my experiences into words.
- \_\_\_\_\_ 33. When I have distressing thoughts or images, I just notice them and let them go.
- \_\_\_\_\_ 34. I do jobs or tasks automatically without being aware of what I'm doing.
- \_\_\_\_\_ 35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.
- \_\_\_\_\_ 36. I pay attention to how my emotions affect my thoughts and behavior.
- \_\_\_\_\_ 37. I can usually describe how I feel at the moment in considerable detail.
- \_\_\_\_\_ 38. I find myself doing things without paying attention.
- \_\_\_\_\_ 39. I disapprove of myself when I have irrational ideas.

# APPENDIX D

## Value Checklist

Please indicate with an **X** the values that you feel represent your value system:

Accountability	<input type="checkbox"/>	Freedom	<input type="checkbox"/>	Knowledge	<input type="checkbox"/>
Balance	<input type="checkbox"/>	Generosity	<input type="checkbox"/>	Loyalty	<input type="checkbox"/>
Beauty	<input type="checkbox"/>	Genuineness	<input type="checkbox"/>	Perfection	<input type="checkbox"/>
Concern for others	<input type="checkbox"/>	Family health	<input type="checkbox"/>	Perseverance	<input type="checkbox"/>
Character	<input type="checkbox"/>	Friendship	<input type="checkbox"/>	Professionalism	<input type="checkbox"/>
Commitment	<input type="checkbox"/>	Fun	<input type="checkbox"/>	Respect for others	<input type="checkbox"/>
Compassion	<input type="checkbox"/>	Happiness	<input type="checkbox"/>	Responsibility	<input type="checkbox"/>
Comradeship	<input type="checkbox"/>	Harmony	<input type="checkbox"/>	Security	<input type="checkbox"/>
Conformity	<input type="checkbox"/>	Health	<input type="checkbox"/>	Self-awareness	<input type="checkbox"/>
Courage	<input type="checkbox"/>	Honesty	<input type="checkbox"/>	Self-respect	<input type="checkbox"/>
Creativity	<input type="checkbox"/>	Honor	<input type="checkbox"/>	Serenity	<input type="checkbox"/>
Dedication	<input type="checkbox"/>	Humor	<input type="checkbox"/>	Service to others	<input type="checkbox"/>
Excellence	<input type="checkbox"/>	Humility	<input type="checkbox"/>	Sportsmanship	<input type="checkbox"/>
Faith	<input type="checkbox"/>	Individuality	<input type="checkbox"/>	Tolerance	<input type="checkbox"/>
Fairness	<input type="checkbox"/>	Integrity	<input type="checkbox"/>	Wealth	<input type="checkbox"/>
Family	<input type="checkbox"/>	Kindness	<input type="checkbox"/>		

Select your top 5 values:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

# APPENDIX E

## *My Sport Experience Questionnaire*

Please read and answer the following statements carefully, reflecting your own experience of these concepts.

On a scale of 1 to 3, please indicate your response by circling the option that represents your answer the most:

	Definitely	Not sure	Not at all
	1	2	3
1. I grew up in a family where at least one of my parents participated actively in sport.	1	2	3
2. When I first started out in sport, I was inspired by the performance of another athlete (not necessarily an athlete from the same sport code).	1	2	3
3. Talent is the biggest contributor to success in sport.	1	2	3
4. I think hard work is the biggest contributor to success in sport.	1	2	3
5. I am aware of my habits in my sport and other areas of my life.	1	2	3
6. As the level of competition increases (club to provincial to national) the importance of having certain habits increase.	1	2	3
7. Mental preparation is a big component of my preparation for an event.	1	2	3
8. To perform on a high level in my sport I need to have a deep awareness of my surroundings.	1	2	3
9. I am deeply aware of the impact of my own behaviour / actions on other people.	1	2	3
10. I am deeply aware of the impact that other people have on me in the sport context.	1	2	3
11. I am deeply aware of the impact that people generally have on each other.	1	2	3
12. I use visualization to help me prepare for events.	1	2	3
13. Of the following values, which 5 values would you say are vital to being an elite athlete? Rank your choice in order of importance: (1 being most important and 5 being the least important)			
*Integrity *Commitment *Compassion *Balance *Sincerity *Continuous improvement *Honesty *Friendliness			
1..... 2..... 3..... 4..... 5.....			
14. I see myself being involved in my sport as coach, administrator or athlete after my competitive years for the next:			
*1-5 years *6-10 years *11+ years (please circle one of the three options)			
15. The amount of hours that I train per week (please circle one of the three options):			
*less than 10 hours *15-19 hours *20-25 hours *26-30 hours			



When we repeat behaviour over time, it becomes a habit. We then think or do in the same way, often and regularly, sometimes without knowing that we are doing it (smoking, constant negative thinking, immediately switching the television on when you get home, reading every night before you sleep, procrastination, are just some examples).

16. Which behaviour do you generally tend to repeat? How does this impact your life?\_\_\_\_\_

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17. More specifically, do you have any habits that influence your sport either positively or negatively? What are these habits and how do they influence your sport positively and/or negatively:\_\_\_\_\_

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18. How do you think the habit of “focusing” impact your sport performance?\_\_\_\_\_

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19. Do you tend to stick to what worked in the past or do you constantly try to find new ways of staying ahead of your competitors? How do you try to stay ahead of the rest?\_\_\_\_\_

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20. Do you have certain behaviour in your training sessions that you try to repeat during competition time? What are these habits and why do you try to make them part of training and competition?\_\_\_\_\_

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21. Leading up to competition, do you often find yourself repeating behaviour or thoughts that you engaged in before the start of other competitions? What are they and why do you think you tend to repeat them?

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22. Have people ever told you that you have a certain habit? Why did they say so and did you agree? What was this habit(s)?

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23. How has participating in sport changed any of your good/bad habits you had before you became an athlete?

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24. Which habits do you think athletes in your sport code should have and why are they necessary?

---

---

---

---

25. What does sport add to your life that other activities don't?

---

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---

# APPENDIX F



PARTICIPANT INFORMATION LETTER  
PHASE 1

University of Pretoria  
Pretoria  
0002

DPHIL IN HUMAN MOVEMENT SCIENCE: HABIT(US), VALUES AND MINDFULNESS AMONG  
ELITE ATHLETES

Dear participant

Thank you for indicating an interest in this research project. Herewith information about the project to consider:

1. This is a research project to be submitted to the University of Pretoria in fulfilment of the requirements of a DPhil Human Movement Science degree. Data obtained may be used for future research purposes, but your confidentiality will be assured at all times (Please see note 6).
2. The project aims to create an understanding of the habits of elite athletes in an effort to enhance training, development and identification of sport talent.
3. Participation is completely voluntary and participants must be athletes who have represented South Africa internationally on a senior level.
4. The project consists of two phases. Seven athletes will be identified to participate in phase one. These athletes will have represented South Africa on numerous occasions and will have been consistent in their performance. Athletes taking part in phase two will have represented South Africa at least once.
5. An interview will be conducted with athletes in phase one whereby questions will be asked about performance related habits, values and mindfulness. Athletes in phase two will complete a questionnaire based on the information obtained from the athletes in phase one. Phase two athletes will also complete a worksheet, checklist and another questionnaire to create a better understanding of their values, levels of mindfulness and awareness of habits.
6. Participation is completely confidential. The result will be reported in group format only.
7. Your participation is voluntary and you may withdraw from participation in this study at any time and without negative consequences.

If you have any queries about this project, or would like to discuss any part of it with me, feel free to contact me on 0824590586 or [frick.denise@gmail.com](mailto:frick.denise@gmail.com). My supervisor at the University of Pretoria is Professor Ben Steyn, and you may contact him on 012-4206094. All information will be treated with confidentiality.

Thank you again

Denise Frick



PARTICIPANT INFORMATION LETTER  
PHASE 2

University of Pretoria  
Pretoria  
0002

DPHIL IN HUMAN MOVEMENT SCIENCE: HABIT(US), VALUES AND MINDFULNESS AMONG  
ELITE ATHLETES

Dear participant

Thank you for indicating an interest in this research project. Herewith information about the project to consider:

1. This is a research project to be submitted to the University of Pretoria in fulfilment of the requirements of a DPhil Human Movement Science degree. Data obtained may be used for future research purposes, but your confidentiality will be assured at all times (Please see note 6).
2. The project aims to create an understanding of the habits of athletes in an effort to enhance training, development and identification of sport talent.
3. Participation is completely voluntary and participants must be 18 years or older.
4. The project consists of two phases. Phase one is completed. Seven elite athletes were interviewed. Information obtained from their interviews were used to set up the "My Sport Experience Questionnaire" which forms part of the questionnaire pack in phase two.
5. Phase two athletes will also complete an online worksheet, values checklist and a mindfulness assessment to create a better understanding of their values, levels of mindfulness and awareness of habits.
6. Participation is completely confidential. The results will be reported in group format only.
7. Your participation is voluntary and you may withdraw from participation in this study at any time and without negative consequences.

If you have any queries about this project, or would like to discuss any part of it with me, feel free to contact me on 0824590586 or [frick.denise@gmail.com](mailto:frick.denise@gmail.com). My supervisor at the University of Pretoria is Professor Ben Steyn, and you may contact him on 012-4206094. All information will be treated with confidentiality.

Thank you again

Denise Frick

# APPENDIX G



RESEARCH STUDY  
LETTER OF INFORMED CONSENT

Habit(us), values and mindfulness among elite athletes

Dear participant

You are hereby invited to participate in the research project “Habit(us), values and mindfulness among elite athletes.”

I, Denise Frick, will be conducting the research project under the supervision of Prof. Ben Steyn from the Department of Biokinetics, Sport and Leisure Sciences at the University of Pretoria. I am a registered Counselling Psychologist and currently conducting my DPhil studies.

The following information is of importance:

1. Goal

The goal of this research study is to try and understand the habits of elite athletes and their accompanying values and levels of mindfulness.

2. Methodology

The research methodology will be informed by a mixed research method. Participants who take part in the first phase of the study will be interviewed by the researcher. These interviews will be recorded on video. Data obtained from the interviews will be used to develop focused questions for participants in the second phase of the study. These participants will also fill out a checklist to

determine their values and a questionnaire to assess their level of mindfulness. Participants will also have the opportunity to complete a worksheet that will assist them in becoming more aware of and understand their habits. The purpose of phase two is to develop more insight into the data obtained from the elite athletes who participated in phase one.

### 3. Confidentiality

I, Denise Frick, undertake to maintain confidentiality at all times. All transcripts, completed questionnaires and video recordings will be kept in my possession and after conclusion of the study be kept confidentially at the Department of Biokinetics, Sport and Leisure Sciences at the University of Pretoria. Data will only be discussed with my supervisor.

I \_\_\_\_\_, undertake to take part in this research study. I understand that this research project is aimed at exploring the habits, values and mindfulness among elite athletes. It has been made clear to me that the research will be done from a mixed research method perspective. I have been made aware of the methodology of this research study and I understand that I will be interviewed if I am partaking in phase one or that I will complete two questionnaires, one worksheet and a checklist if I am partaking in phase two. I understand that this study is of a psychological nature.

I understand that I am under no obligation to complete my participation in this research study.

This research project is aimed at exploring the habits of elite athletes. An understanding of the nature and prevalence of habits and the role they play in an athlete's career may allow sport psychologists, sport administrators, coaches and athletes to develop and manage sport careers more effectively. I understand that data from this study will be used for publication and that my identity will remain confidential at all times.

_____ Signature of participant	_____ Place	_____ Date
_____ Signature of researcher	_____ Place	_____ Date
_____ Signature of supervisor	_____ Place	_____ Date



# APPENDIX H

# INSTRUCTIONS

Dear athlete

Thank you for taking part in my study! I trust that your participation will assist in gathering valuable information about sport and what it takes to be a successful athlete.

For your contribution to be of value kindly ensure that you complete **ALL** of the following worksheets/questionnaires. I cannot use your data if you do not complete everything.

1. Shadowmatch Worksheet. You will find a page with a code you need to log in with on the internet. Please allow about 40min to complete this worksheet. It consists of 70 multiple choice 'questions'. This worksheet will provide you with a description of your top habits and is really worth doing.
2. Value Checklist
3. My Sport Experience Questionnaire
4. Five Facets Mindfulness Questionnaire
5. Persons Profile IVM or IVF (depending if you are male or female)
6. Biographical Data form
7. **Sign** the Letter of Informed Consent
8. Please take the time to read the "Participant Information Letter" explaining the study (this is the only document that you do not need to return to me).

I am going to provide feedback to all athletes who participate in this study as I want this study to also be an opportunity for athletes to grow as individuals and learn more about themselves. This experience is likely to assist you in your mental preparation and is therefore a useful, free of charge opportunity.

I will appreciate it if you can complete this task as soon as possible.

Please do not hesitate to contact me should you have any questions.

Yours in sport

Denise Frick

0824590586

*frick.denise@gmail.com*

# APPENDIX I

## BIOGRAPHICAL DATA

\*Please note that per ethical considerations and undertaking, your identity will not be made public or presented in this study.

Your name will be substituted with a code.

I need your name and surname so I can keep track of who I am receiving data from\*

Name and surname: \_\_\_\_\_

Age: \_\_\_\_\_

Gender: \_\_\_\_\_

Culture group: \_\_\_\_\_

Home language: \_\_\_\_\_

Sport: \_\_\_\_\_

Level of participation (club/provincial or SA colours): \_\_\_\_\_

Number of years participating in this sport: \_\_\_\_\_

Do you have a coach? \_\_\_\_\_

Email address: \_\_\_\_\_

# APPENDIX J

# Shadowmatch®

You are invited to engage with Shadowmatch. It is a sophisticated worksheet that will map your behavioural habits to determine your strengths and how you prefer interacting with your environment.

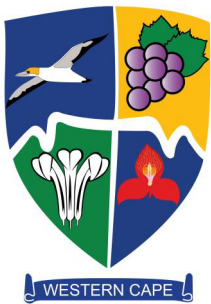
Please go to <http://www.shadowmatch.co.za> and enter the access code in the space provided.

Please ensure that you enter the code correctly.

Your access code is: .....

Enjoy your Shadowmatch Experience!

# APPENDIX K



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

# WESTERN CAPE

## PROVINCIAL SPORT COUNCIL

P.O. Box 194, OUDTSHOORN, 6620  
[davesus@mweb.co.za](mailto:davesus@mweb.co.za)

044-2722580 / 082-7734901  
[www.wcpsc.co.za](http://www.wcpsc.co.za)

13 November 2013

**Attention:** Ms Denise Frick

### LETTER OF PERMISSION:

Re: Students' title of thesis: **Habit(us), values and mindfulness among elite athletes.**

I, **GOLIATH MUNRO**, President of the Western Cape Provincial Sport Confederation, hereby give permission to conduct the above mentioned research study with athletes and sportspersons within the Western Cape.

The research study will be done by Ms Denise Frick, a PhD student at the University of Pretoria (Tuks). The title of her thesis is: **Habit(us), values and mindfulness among elite athletes.**

I am aware that athletes and sportspersons' participation in this study remains voluntary and that they, at any time may withdraw from the research. I also understand that all personal information will be treated as confidential by the researcher.

I hereby wish you all of the best with your research project and trust that it will also be to the benefit of sportspeople (athletes and administrators) in the Western Cape, specifically and our country at large.

Yours faithfully

**GOLIATH MUNRO**  
(President: WCPSC)



# APPENDIX L



# WESTERN CAPE

## PROVINCIAL SPORT CONFEDERATION

P.O. Box 1131, OUDTSHOORN, 6620

044-2722580 / 082-7734901

[davesus@mweb.co.za](mailto:davesus@mweb.co.za)

[www.wcpsc.co.za](http://www.wcpsc.co.za)



11 November 2013

Ms Denise Frick

Thank you for your correspondence. We as the Coaches Commission, agree that your research will benefit sport in general. Your aims and objectives lead to interesting findings that we look forward to seeing the outcomes.

We support your study but bear in mind the following:

1. Permission needs to be granted through the various Codes of sport
2. Permission from athletes, parents and their respective coaches
3. Please include women and persons with disability

We support your study and look forward to meeting with you for the findings.

Goodluck and all the very best with this mammoth task ahead

Yours in sport

Per email

Elton Davids

Chairperson Coaches Commission

# WESTERN CAPE

# APPENDIX M



**Western Cape  
Government**

Cultural Affairs and Sport

CHIEF DIRECTOR SPORT & RECREATION  
Lyndon.Bouah@westerncape.gov.za  
Tel: +27 21 483 9615  
Protea Assurance Building,  
Green Market Square,  
Cape Town, 8001

Dear Ms D Frick

1. On behalf of the Department of Cultural Affairs and Sport I congratulate you for receiving approval to pursue your doctorate.
2. The Department will gladly assist you in your research.
3. I will be the contact person for your research.
4. I can be contacted on the numbers above.

Regards

Advocate L Bouah

Date: 30/10/2013

Chief Director: Sport and Recreation

# APPENDIX N



15 November 2013

Dear Prof Steyn

**Project:** Habit(us), values and mindfulness among elite athletes  
**Researcher:** D Frick  
**Supervisor:** Prof BJM Steyn  
**Department:** Biokinetics, Sport and Leisure Science  
**Reference numbers:** 20269260

Thank you for your response to the Committee's letter of 22 October 2013.

I am pleased to be able to tell you that the above application was **approved** by the **Research Ethics Committee** on 15 November 2013. Data collection may therefore commence.

Please note that this approval is based on the assumption that the research will be carried out along the lines laid out in the proposal. Should the actual research depart significantly from the proposed research, it will be necessary to apply for a new research approval and ethical clearance.

The Committee requests you to convey this approval to the researcher.

We wish you success with the project.

Sincerely

**Prof Karen Harris**  
**Acting Chair: Postgraduate Committee &**  
**Research Ethics Committee**  
**Faculty of Humanities**  
**UNIVERSITY OF PRETORIA**  
**e-mail: Karen.Harris@up.ac.za**