UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
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Sport psychological skills training and psychological well-being in youth athletes

David John Edwards

Student number: 25522176

D Phil: Human Movement Science

Promoter: Professor B.J.M. Steyn

A thesis submitted in partial fulfilment of the requirements for the D Phil in Human Movement Science in the Department of Biokinetics, Sport and Leisure Sciences at the University of Pretoria.

December 2007

Unless specifically indicated to the contrary, this thesis is the result of my own work.

David John Edwards

ACKNOWLEDGEMENTS

God for the strength he has given me

Professor Steyn for his guidance and support over the last three years

My father for all of his love, care and support

My mother for all her love and encouragement

My sister for all her love and support

Professor Du Toit for his guidance and mentoring throughout my life

Ms. Field for her assistance and all the participants for partaking in the PST program

Experts for the knowledge and contribution they provided

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DEFINITIONS

Sport psychology: The study of human behaviour in a sport or exercise setting

Psychological skills: Broad spectrum of natural overlapping psychological abilities

Psychological skills training: Training of single psychological skills using various techniques

Psychological skills training programs: Composite package programs, which train a variety of psychological skills simultaneously

Sporting performance: Sporting outcome or result

Psychological well-being: Positive mental health

Athlete: Male or female sportsperson

Youth athlete: Male or female sportsperson below the age of 19 years

Track athlete: Sportsperson who partakes in a track athletic running event

Community: Group of individuals living together, with a common purpose

Expert: Individual with a wealth of knowledge and experience in an area of study

SUMMARY

In sport, psychological skills training is as important as physical training. Psychological skills training (PST) package programs aim to train a variety of psychological skills simultaneously. While extensively utilized overseas, PST programs are seldomly conducted with South African elite sportspeople and are generally not available to local youth athletes. Furthermore, the impact of PST programs on life and general health and the related components of biological, psychological, social and spiritual well-being has been typically neglected, with research in this regard minimal or non-existent. For example, before this thesis, the impact of PST on the core health component of psychological well-being had not been evaluated, nor had the conceptual and/or empirical relationship between psychological skills and psychological well-being been investigated.

Although PST is often conducted individually because of its specific and personal nature, group training should not be overlooked especially in South Africa where communal living is a way of life and community interventions are an important part of health promotion. The value of broad base PST programs is that they train psychological skills as life skills thus aiding overall biopsychosocialculturalspiritual development. With these considerations in mind a triangulated design involving individual, group and community interventions, as well as elite and expert case studies was utilized to evaluate the effectiveness of a PST program and to investigate the relationship between psychological skills and psychological well-being. Results based on quantitative and qualitative outcome and process measurements indicated general improvement in psychological skills, psychological well-being and sporting

performance. Psychological skills and psychological well-being were found to be interrelated concepts, with overlapping components. Recommendations for ongoing and future research at individual, group and community level are made.

OPSOMMING

Wat sportaktiweite aanbetref, is die opleiding van sielkundige bedrewenhede net so belangrik as fisiese bedrewenhede. Die doel van sielkundige bedrewenheids-opleidingsprogramme (SBO's) is om verskeie sielkundige bedrewenhede gelyktydig oor te dra. Alhoewel sulke programme reeds in baie lande aangebied word, is daar min SBO-programme in Suid Afrika, en bykans geen vir die jeug beskikbaar nie. Verder is die positiewe effek van hierdie programme op die algemene lewe en gesondheid, veral die fisiese, sielkundige en sosiale komponente van gesondheid nie behoorlik ondervang nie. Byvoorbeeld, voor hierdie proefskrif is daar nog geen navorsing in verband met die effek van SBO-programme gedoen nie en die konseptuele verhouding tussen SBO en sielkundige welsyn nie geïdentifiseer nie.

Alhoewel SBO-programme gewoonlik met individue uitgeoefen is, is daar ook groepsprogramme nodig, veral in Suid Afrika waar gemeenskapsbetrokkenheid baie beklemtoon word. Hierdie soort programme is van besondere waarde omdat dit in staat is om sielkundige bedrewenhede deel te maak van die algemene lewensvaardighede. Om hierdie rede is 'n driedimensionele navorsingsontwerp aangewend ten einde die effek van 'n SBO-program op individue, groepe en gemeenskappe te ondersoek. Die ontwerp het elite- en deskundige gevallestudies ingesluit. Die resultate dui 'n kwantitatiewe en kwalitatiewe verbetering aan in algemene sielkundige welsyn sowel as in spesifieke sportprestasies. Die interaktiewe verband tussen aangeleerde sielkundige bedrewenhede en algemene sielkundige welsyn word aangetoon. Aanbevelings word gemaak wat die navorsing en praktyk op hierdie gebied sal bevorder.

CHAPTER ONE

INTRODUCTION

1.1. Introduction

This chapter introduces the two core components of this research: psychological skills training programs and psychological well-being. It discusses global sport psychology trends, the development of sport psychology in South Africa, group interventions and empowerment. It furthermore provides the motivation, problem statement, aim, hypotheses and modus operandi for the study.

1.2. Psychological skills training programs

The concept "psychological skills" contains two sub concepts which may be briefly unpacked as follows; "Psychology", originating from the Greek word *psyche*, can be described as the study and use of human bio-psycho-social-cultural-spiritual experiences and behaviour. "Skills" refer to learnable and trainable abilities used by different individuals in different situations and in diverse ways on a daily basis (Weinberg & Gould, 2007). Psychological skills training (PST) programs essentially refer to organised interventions, typically in health and sporting contexts, wherein systematic training of various psychological skills takes place.

Early sport PST interventions focused predominantly on the training of single psychological skills (Wann & Church, 1998). Over the last twenty years composite

PST package programs have been developed, implemented and evaluated. These latter programs aimed to improve various psychological skills simultaneously and provide optimal training in this regard (MacDougall, Scott, McFarlane, Leblanc & Cormier, 2001; Wann & Church, 1998). Such broad base PST programs have special value for youth athletes in their inclusion of biological, social and spiritual aspects, which improve general life skills and assists development.

Utilized by overseas sportspeople, in a variety of sport settings (Sanchez & Lesyk, 2001; Wann & Church, 1998), PST programs typically adopt an overlapping theoretical and practical approach to the discussion and teaching of skills. They can be applied to one sport in depth, used at different levels of competition and the same program can be adapted and implemented in a variety of life and sport contexts. However, although extensively utilized, PST programs often lack comprehensive evaluation in various areas. One specific gap noted in this study's needs assessment was the lack of research on the relationship between psychological skills, health and life in general.

Composite PST programs require a greater use of various psychological skills than single psychological skill interventions (Wann & Church, 1998). It is therefore logical to deduce that composite programs will have a greater differential effect on variables associated with health than single psychological skill interventions. In this regard the specific impact of PST programs on psychological well-being has not been formally evaluated and extensive literature and website searches have revealed only one specific reference to the measurement of psychological well-being as such (Kirschenbaum, McCann, Meyers & Williams, 1995). Furthermore, the conceptual

link between psychological skills and psychological well-being has not been formally investigated.

1.3. Psychological well-being

Psychological well-being is one component of health, which like psychological skills falls under the broad category of psychology. Psychological well-being or positive mental health has been extensively researched over the last two decades (Conway & Macleod, 2002; Ryff, 1989b; Wissing & Van Eeden, 1998). Various studies have demonstrated the positive effect of physical activity on psychological well-being and psychological well-being on sporting performance (Edwards, Edwards & Basson, 2004; Edwards, Ngcobo, Edwards, & Palavar, 2005; Hayes & Ross, 1986; Scully, Kremer, Meade, Graham & Dudgeon, 1998; Weinberg & Gould, 2007). Aspects of sports training can however also have a detrimental effect on positive mental health, most notably physical overtraining in the form of addiction can lead to a decrease in psychological well-being. Generally peak or optimum physical training is associated with variable effects on health and optimum performance, with moderate training typically enhancing health above performance and peak training enhancing performance above health. With psychological well-being an essential component of general life, health (World Health Organization, 1946), sport and performance, it is important that variables which could potentially increase or decrease psychological well-being be thoroughly researched and investigated.

1.4. Sport psychology

The First World Congress of Sport Psychology in 1965 in Rome established sport psychology as a modern academic and professional discipline (Morris, Hackfort & Lidor, 2003). The field is concerned with the theory and practice of psychological principles in sport and exercise contexts for the promotion of health and performance. Since 1965, sport psychology has developed considerably in America, Europe, Asia, Australia and parts of Africa. It is offered at many universities as part of a sport science or psychology degree, as a specialized sub-discipline, which compliments other health and performance sub-disciplines such as biokinetics, exercise physiology, sport management, coaching and physiotherapy. Regular international conferences, journals such as the International Journal of Sport and Exercise Psychology and Psychology of Sport and Exercise, as well as specialist registration categories are currently developing the field.

1.5. Sport psychology in South Africa

In South Africa, years of colonial and apartheid oppression, social and economic disparity, resulted in a lack of sport development in rural, historically disadvantaged and economically impoverished areas. Apartheid separate development policies resulted in unequal allocation of resources and the establishment of different sporting clubs and committees based on race. Anti-apartheid activities led to South Africa being banned from the Commonwealth and sanctions placed on national teams. Following the First World Congress of Sport Psychology in 1965, sport psychology in South Africa did not develop as was the case elsewhere in the world.

However since the disbandment of apartheid, there has been relatively more progress and South Africa has been reinstated into the Commonwealth and sanctions have been lifted. Sport has developed at various levels, with different Sports Trusts, Sport Development Programs and quota systems implemented to empower previously disadvantaged sportsmen and women, and develop sport in rural areas (Edwards, 2004). Sport psychology has been used to a certain extent in this process as a community intervention and generally to improve the performance of elite athletes. However despite the contemporary worldwide growth of sport psychology, in South Africa it still remains a largely underdeveloped area (Witton, 2004). There is currently no association for sport psychology in South Africa, no registration category with the Health Professions council of South Africa or other professional organizations, and no ethical code of conduct or practice guidelines. Due to the limited development of the field as an academic and professional sub-discipline, research and practice is generally undertaken on a part time basis. Sport psychology courses are developing and are offered at some universities as an elective, but generally not as a complete course.

In South Africa PST package programs are usually only accessible to some elite professional athletes and rarely available to youth sportspeople. An extensive literature review and searches on websites such as Pubmed, Ebschohost, Psychinfo and Sabinet revealed only one published PST program for local youth athletes (Pieterse & Potgieter, 2006). Overseas sportspeople have more access to sport psychology and PST programs and more financial, institutional development in sport occurs overseas, especially in economically developed countries. It is important that sport in South Africa remains up date with the latest developments in global sport and

exercise training techniques to promote health, and for athletes to continuously develop skills and remain competitive. It is furthermore imperative that South Africa uses its diverse uniqueness when conducting health and sport psychology interventions.

Although PST is often conducted on an individual basis due to the personal and specific nature of the skills being trained and this should continue to happen, the use of group PST interventions should not be underestimated. This is particularly true in South Africa with its mainly communal forms of living. Various community interventions have been implemented and researched in South Africa. While mental health promotion though physical activity, dance and movement has occurred naturally, throughout history (Edwards & Fox, 2005), a considerable increase in the structured utilization of these various forms of physical activity as a means of general public health promotion at the communal level has recently taken place (Fox, 2000b; Roux, Edwards & Hlongwane, 2007). New models including tertiary, secondary and primary prevention, primary, secondary and tertiary intervention, as well as power mapping, are being implemented in community settings for the improvement and maintenance of health (Edwards, 2001; Hagan & Smail, 1997a, 1997b).

1.6. Group interventions and empowerment

The dynamic interaction process, which occurs in groups, needs to be understood for them to be most effectively utilized (Weinberg & Gould, 2007). There is an underlying empowering mechanism that is understood to occur in supportive group environments (Rappaport, 1985). Empowerment is a process of giving and receiving,

as individuals use personal knowledge and resources to support one another (Bhana, 1998; Mthembu, 2001; Patel, 2003; Rappaport, 1985). In a sport setting, this can be observed objectively when a team becomes a cohesive unit. Subjectively, members gain empowerment through experiencing themselves as a team.

PST workshop interventions should be combined with existing community interventions and implemented to promote the development of life skills, sport and performance for South Africans. Furthermore PST package programs have great potential as a community health intervention strategy. As an added motivation it could result in the attainment of a vast amount of diverse knowledge.

1.7. Motivation for the study

While there appears to have been an increase in the research and practice of sport psychology in South Africa over the last decade, further growth is required. The development of sport psychology will improve health, sport and performance in all South Africans. The relationship between psychological skills and psychologically well-being requires investigation for life, health and performance reasons. As an added motivation, psychological well-being interventions are an important part of illness prevention and health promotion in developing countries such as South Africa. Although they are usually not evaluated scientifically, community sport psychology interventions typically use sport and skill empowerment programs to improve aspects of health such as psychological well-being. As a motivating factor PST programs could potentially not only improve sporting ability, but also skills and psychological well-being in community settings. Further evidence based community interventions

need to be developed, implemented and evaluated to ensure the continued promotion of health.

1.8. Problem statement

The rationale for this thesis is as follows. Firstly, there is a need for the refinement and evaluation of PST programs internationally. Secondly, due to the general lack of sport psychology and PST programs available for sportspeople in South Africa and particularly for youth athletes, there is a need to develop, implement and evaluate PST programs for local youth athletes. Thirdly, because the relationship between PST programs and psychological well-being does not appear to have been measured, there is a need to observe the effect of such a program on psychological well-being. Do PST programs enhance psychological skills, athletic performance and psychological well-being? What specific effect does a PST program have on psychological well-being? Are the concepts and components of psychological skills and psychological well-being interrelated? If so, how? Conceptual links can be further clarified using expert knowledge. Community life, sport and skill interventions are continuously required in South Africa to promote well-being. PST programs have great potential as health and performance intervention strategies.

1.9. Aim

The first aim of this research was to implement a PST program for youth athletes, assessing its impact on life and psychological skills, psychological well-being and performance, in an individual and group context. The second was to evaluate its

usefulness as a community workshop. The third aim was to implement the PST program with elite adult participants to assess its effectiveness and externally validate the program. The fourth was to acquire sport psychology experts' views on the relationship between psychological skills and psychological well-being.

1.10. Hypotheses

It was expected that the PST program would improve a school experimental groups' psychological skills, psychological well-being and performance in comparison to a school control group. It was estimated that the PST program would enhance a community workshop intervention groups' psychological skills. It was expected that the PST program would improve adult elite athletes' psychological skills and psychological well-being. It was anticipated that the concepts and components of psychological skills and psychological well-being would be inter-related in various ways.

1.11. Modus operandi

In order to investigate the questions raised above in the problem statement the modus operandi adopted in this research is concerned with a triangulated approach involving quantitative and qualitative methods for the acquirement and evaluation of diverse knowledge. This is further discussed in chapter four.

1.12. Résumé

This chapter introduced the concepts of psychological skills and psychological well-being. It discussed PST programs, global and local sport psychology, group interventions and empowerment, as well as provided the motivation, problem statement, aim, hypotheses and method of the study. The next two chapters are concerned with literature review related to two core components of this research which is psychological skills training programs and psychological well-being, following which the chapter on methodology will return to directly address the design and development of the empirical investigation and intervention.

CHAPTER TWO

LITERATURE REVIEW

PSYCHOLOGICAL SKILLS TRAINING PROGRAMS

2.1. Introduction

This chapter reviews previously implemented composite psychological skills training package programs and the psychological skills currently focused on in sport. It suggests links between PST programs, psychological skills and psychological well-being.

Extensive emphasis in sport has been placed on physical training. With the general development of the academic and professional field of sport psychology over the past thirty years, there has been a corresponding increase in sport psychological skills training and research especially with regard to the effect on sporting performance (Harmison, 2006; Wann & Church, 1998; Weinberg & Gould, 2007). PST interventions have been utilized with golfers (Beauchamp & Halliwell, 2003; Cohen, Tenenbaum & English, 2006; Thomas & Fogarty, 1997), soccer players (Thelwell, Greenless & Weston, 2006), javelin throwers and sprinters (Hanin, Korjus, Jouste & Baxter, 2002), distance runners (Patrick & Hrycaiko, 1998), badminton players (Bebetsos & Antoniou, 2003), as well as swimmers (Thiese & Huddleston, 1999). Psychological skill assessments have been conducted with rugby union and league players (Golby & Sheard, 2004; Jackson & Baker, 2001), rodeo athletes (Meyers &

LeUnes, 1996), American football players (Cox & Yoo, 1995) and equestrian riders (Meyers, Bourgeois, LeUnes & Murray, 1999). Studies have also demonstrated the value of PST during injury recovery (Milne, Hall & Forwell, 2003; Russel, 2000; Scherzer, Brewer, Cornelius, Van Raalte, Petitpas, Sklar et al., 2001).

2.2. Psychological skills training programs

Contemporary PST programs typically train two or more psychological skills simultaneously using a number of different techniques. Although a variety of programs exist, they generally have the same basic core objective, which is to provide holistic training. Variations are dependent on factors such as an athlete's age, level of competition, whether he/she competes in an individual or team sport, his/her past PST, what he/she seeks to achieve out of the sporting experience. Athletes conduct their own PST and/or can receive psychological training from professionally registered psychologists as well as other sports coaches, biokineticists or physical education teachers, who have the necessary qualifications and experience in PST (Gould, Damarjian & Medbery, 2004; Leslie-Toogood & Martin, 2003; Voight, 2005; Weinberg & Gould, 2007). PST generally occurs during the "off season" and practice sessions, and is utilized before, during and/or after competition. PST requires periodic follow-up reviewing sessions (Wann & Church, 1998), as it is a continuous experiential learning process, with sportsmen and women practicing PST techniques throughout their sporting season and career.

PST programs have been developed, implemented and evaluated at youth and adult,

individual, group and community, elite and non-elite levels (Mamassis & Doganis, 2001; Wann & Church, 1998; Weinberg & Gould, 2007).

2.2.1. Youth PST programs

PST package programs have been utilized with youth gymnasts (Fournier, Calmels, Durand-Bush & Salmela, 2005), tennis players (Mamassis & Doganis, 2001), hockey players (Wild, 2002), athletes (Hughes, 1990) and swimmers (De Souza, Marcello & Garcia, 2005).

As mentioned in chapter one, research has focused particularly on the beneficial impact of youth PST programs on overall development. One example is a recent PST implemented for youth soccer players to reduce health affecting behaviours and improve health enhancing behaviours (Barclay, Hodge & Potrac, 2005). Another is a program with gymnasts which demonstrated the transferability of psychological skills into life skills applicable in everyday contexts (Ng & Wang, 2005).

Youth PST programs are generally conducted using a presentation level appropriate for younger learners, with diagrams and analogies used to explain the conceptual framework and theoretical underpinnings of the psychological skills. More PST interventions are implemented and evaluated with adult sportspeople, and as a result yield a greater number of research articles. This is especially true in South Africa with only one recently published youth PST program found during the literature search (Pieterse & Potgieter, 2006).

2.2.2. Adult PST programs

A more in-depth conceptual and theoretical approach is generally used with adults. Programs have been implemented with adult college and elite tennis players (Landin & Macdonald, 1990; Mamassis & Doganis, 2001; Rolo, Paula, Brito & Colaco, 2001), figure skaters (Martin & Toogood, 1997), university basketball players (MacDougall et al., 2001) and intellectually challenged basketball players (Gorely, Jobling, Lewis & Bruce, 2002).

PST programs have trained various combinations of skills, such as arousal, attention and goal setting with ballet dancers (Sharp, 2005), arousal, attention, self-confidence and goal setting for college rodeo athletes (Harrison, 2005) and arousal, imagery and attention used with elite kayaking competitors (Blumenstein & Lidor, 2005). Quantitative PST research has revealed that a combination of imagery and physical practice can improve arousal regulation and self-confidence in adult archers (Ramachandran, 2005). Case study interventions have provided rich data on the value of PST programs, with one example being a quantitative and qualitatively evaluated PST program involving arousal, imagery and goal setting, which showed improvement in performance and psychological skills of an adult elite golfer (Kim, Lee & Lee, 2005).

PST programs have been formulated and implemented in various life settings, for a variety of benefits. A three-step business approach which included awareness of ideal psychological state, self-monitoring and self-regulation has been developed (Murphy, 2005). Research suggests PST training is useful stress coping mechanism, which can

enhance quality of life (Sugiyama, Lee & Yamazaki, 2005). Programs have also been used with referees. A PST program, involving arousal, imagery and attention was provided to adult soccer referees and this resulted in reported enhanced referring performance (Tachiya, Sugo & Murakami, 2005).

For teaching and training purposes, lectures on the application of PST programs are now available. One international illustration was the PST workshop for ballroom dancers (outlining arousal, mental imagery and goal setting training) offered at the recent International Conference for Sport Psychologist in Sydney, Australia (Ballinger & Tremayne, 2005). While a variety of PST programs exist for youth and adult sportspeople, few are as highly structured and focused as Wann and Church's (1998) program for college track athletes.

2.2.3. Wann and Church's PST program

Wann and Church's (1998) program consisted of five, thirty to sixty minute sessions, which included arousal management in the form of anxiety control in session one and two (through the use of breathing techniques, progressive relaxation and positive self-talk), imagery skill enhancement in session three (by enhancing internal and external positive mental imagery), self-confidence improvement as well as building and coping with adversity in session four (though the use of positive imagery, self-talk and development of active coping strategies) and attention training in session five (through the utilization of attentional cue words). The program also included a follow-up review session with the participants.

Wann and Church's (1998) program incorporated most of currently utilized sport psychological skills and popular training techniques. In addition it was comprehensively quantitatively assessed using the 68-item Ways of Coping Checklist (Crocker, 1992; Crocker & Graham, 1995), 28-item Athletic Coping Skills Inventory (Smith et al., 1995), 13-item Trait Sport Confidence Inventory (Vealey, 1986), 15-item Sport Competition Anxiety Test (Martens et al., 1990) and qualitatively evaluated using individual interviews. It provided effective theoretical and technical training, transferring knowledge into practical use.

2.3. Psychological skills

In themselves, psychological skills are all interrelated with each other and form a unique, composite, inseparable whole (Weinberg & Gould, 2007). Their separation into arbitrary categories is for research, training and teaching purposes as applied in a variety of settings such as sport. Psychological skills currently most focused on in sport include arousal, mental imagery, attention, concentration, self-confidence, goal setting and motivation (Wann & Church, 1998; Weinberg & Gould, 2007). While some PST programs train only some of these skills, they will all be examined in order to provide a comprehensive review, as well as an understanding of the PST program implemented during this study. Each psychological skill will be discussed conceptually, theoretically and practically in relation to life and sporting contexts.

2.3.1. Arousal

Arousal is both a physiological and cognitive experience (Wann & Church, 1998). It

utilizes the natural energy existing in all human beings. It is experienced along a continuum from low to high arousal. In a general context high arousal may occur before a public address. In a sport situation low arousal may be experienced after losing an event. While physiological and cognitive arousal are described separately below for definition, clarification and training purposes, in reality they are experienced simultaneously and have overlapping conceptual and theoretical bases, with some theories more applicable for physiological arousal explanation and others for cognitive arousal.

2.3.1.1. Physiological arousal

2.3.1.1.1. Conceptual understanding

Physiological arousal utilizes the current level of natural physical energy essential for sporting movement and performance (Martens et al., 1990). Without it athletes would feel lethargic. While occurring in most of the senses, physiological arousal is most vividly experienced in the “bodily felt” sense, mainly when one’s breathing or heart rate increases or decreases (Miller, 1997). The theoretical basis for the concept of physiological arousal is as follows.

2.3.1.1.2. Theoretical underpinnings

There are various explanations for arousal and performance. From a balanced PST package training perspective, the inverted U hypothesis and zone of optimal functioning theories provide most clarity.

The Yerkes-Dodson Law (Yerkes & Dodson, 1908) or inverted U hypothesis suggests moderate arousal has the greatest positive effect on performance, with low or high arousal resulting in a deficit or loss of energy and a hindering of athletic ability (Miller, 1997; Wann & Church, 1998). This can be diagrammatically explained using an inverted U curve. Although this theory is most notably used to describe energy creation, maintenance and flow, it also applies to other psychological components such as self-confidence, which is later discussed. While the inverted U hypothesis links moderate arousal to optimal sporting outcomes, this middle level is more personally defined and explained by the zone of optimal functioning theory (Hanin, 1980, 1986, 1997).

Hanin's (1980, 1986, 1997) theory suggests individuals have different specific optimum arousal levels with optimum arousal occurring in an athlete's zone of optimal functioning. When in the "zone" athletes describe their movement as completely harmonious and effortless, with optimal performance achieved. Individual zones of optimal functioning are established through experience, practice, utilization of life and sporting memories as well as current and past physiological experiences. Once the "zone" is achieved, athletes should link this felt sense to some meaningful experiential anchor. This increases the accessibility of the "zone" during difficult sporting situations.

2.3.1.1.3. Physiological arousal experience

Depending on factors like expectancy, thoughts, attitude, motivation and memory, arousal may be linked to either positive or negative emotions. Low arousal is

generally associated with positive experiences such as relaxation or negative feelings like apathy (Weinberg & Gould, 2007). High arousal may be related to positive feelings such as euphoria or negative anxiety experiences. A personal understanding of high and low, positive and negative emotions should be acquired by every athlete, as individuals respond differently to various experiences and use arousal in diverse ways.

2.3.1.1.4. Physiological arousal use

The constructive use of physiological arousal can be compared to positive stress or *eustress* in that it can be used to improve sporting performance. Through experience and training, athletes learn to use arousal to reduce anxiety and produce optimal sporting outcomes. Described interchangeably with arousal, anxiety is an overwhelming negative arousal experience. It is a destructive emotion that can be compared with negative stress or *distress*. Anxiety can have a detrimental effect on sporting performance (Potgieter, 1997) due to heightened arousal states and a breakdown of energy flow. Sportsmen and women use various methods to control their arousal levels.

2.3.1.1.5. Training techniques

The goal for athletes is to understand and regulate their arousal levels, in order to enter their zone of optimal functioning and perform to the best of their abilities. Arousal can be optimized through effective techniques such as breathing and progressive relaxation (Miller, 1997; Wann & Church, 1998).

2.3.1.1.5.1. Breathing techniques

Breathing techniques have been a method of health promotion and skill training for centuries in eastern culture. Breath is an essential feature of life and may be regarded as a science of its own (Loehr & Migdow, 1999; Reid, 1989). The understanding and application of breathing techniques is critical to sport. Smooth, deep, full breathing creates optimum arousal and sporting performance. To create an experience of centeredness, athletes should focus on breathing with their belly rather than their chest. Breathing methods regulate emotional states associated with arousal (Weinberg & Gould, 2007). As described, these may be either positive or negative. In order to heighten arousal the in-breath should be longer than the out-breath. In order to lower arousal the out-breath should be longer than the in-breath. Breathing exercises should be done daily for twenty to thirty minutes.

Breathing rate is approximately one quarter of a heartbeat per minute. Athletes can measure the length of their in- and out-breath with a watch or heartbeat. For example, if negative heightened arousal in the form of bodily anxiety is experienced, one may overcome this by breathing in to the count of three heartbeats or seconds and out to the count of six heartbeats or seconds until moderate arousal is experienced. If low arousal in the form of apathy is experienced, athletes may overcome this by breathing in to the count of six heartbeats or seconds and out to the count of three heartbeats or seconds. Experiential practice may result in athletes breathing in for five and out for ten, or in for ten and out for five, depending on personal preference and effectiveness.

2.3.1.1.5.2. Progressive relaxation

Relaxation exercises help reduce heightened arousal in the form of anxiety. They become particularly powerful when combined with techniques such as imagery and slow breathing. Progressive relaxation developed by Jacobson (1929, 1976) involves tensing then relaxing specific muscle groups, until all major areas used for athletic movement and performance are relaxed. Through progressive relaxation athletes learn to relax muscle groupings, differentiate between tension and relaxation, which cannot occur simultaneously, as well as anchor and remember the relaxation experience (Wann & Church, 1998; Weinberg & Gould, 2007). It results in fewer injuries, athletes "listening to their bodies", awareness of personal limits, improved performance and assists cognitive arousal control. Once learnt, progressive relaxation should be done twice daily in order to maximise its benefits.

2.3.1.2. Cognitive arousal

2.3.1.2.1. Conceptual framework

Cognitive arousal is utilization of the current level of natural cognitive energy. As an example, low levels of cognitive arousal can occur during deep depression. High levels of cognitive arousal may occur before a major life or sporting event. As described using the arousal continuum, thought patterns range from being under to over stimulated, depending on the level of cognitive arousal. In sport, various levels of cognitive arousal can occur before, during or after competition (Lane, Harwood & Nevill, 2001; Wann & Church, 1998; Weinberg & Gould, 2007), and should be

understood by athletes so that they can utilize training techniques in order to control cognitive arousal for health and sporting success.

2.3.1.2.2. Theoretical basis

When thought patterns are positive and not under or over stimulated, athletes are able to "think quickly on their feet" and adapt to situational change. Energy flow is smooth and cognitions are not distorted. This harmonious energy balance can however be negatively affected by faulty cognitions about life or sporting situations. Psychotherapeutic cognitive behavioural theories provide most clarity on the aetiological understanding of this disparity. Ellis's (1962) A-B-C model of event reaction suggests it is not the event itself which causes the emotional reaction, but the individual's perception of the event (Corey, 2001; Gilliland, James & Bowman, 1994). This understanding of cognition, action and reaction is a key element for ensuring athletes do not "defeat themselves" through negative cognitive arousal energy and emotions, in the form of self-doubt and anxiety.

2.3.1.2.3. Self-doubt and anxiety

Faulty perceptions can cause incorrect, negative thought patterns to be established, or re-established if experienced before. Negative thought patterns can heighten arousal levels, create cognitive anxiety and self-doubt. These negative emotions and cognitions can increase or decrease an athlete's focus and have a direct negative effect on sporting performance (Potgieter, 1997), both in preparation for and during an event. An example is that some athletes do not overcome pre-competitive anxiety and

transfer this unresolved negative emotional experience from youth to adult sporting careers (Hanton, Wadye & Connaughton, 2005). While these athletes continue performing, optimal outcomes may never be achieved. When anxious energy flow is not harmonious and an athlete's movement can change from being effortless to being jerky, uncoordinated and erratic.

2.3.1.2.4. Cognitive arousal and performance

For optimal performance to occur, athletes should experience moderate levels of cognitive arousal prior to an event (Weinberg & Gould, 2007). This creates a harmonious, balanced approach. When thought patterns are not under or over stimulated the natural cognitive energy flow is smooth. Practiced physical movements are performed effortlessly with the sportsperson experiencing being "completely in the sporting moment". Athletes describe this feeling as one of functioning in their zone of optimal functioning.

During an event, athletes' minds should be clear of unwanted thoughts and in a state of "no mind" (Jennings, 1993). They should be in their zone of optimum functioning and focused on the task at hand. Movement should be performed as practiced and imagined during training sessions.

2.3.1.2.5. Cognitive arousal training

Cognitive training theories developed by Beck (1976), confirm the importance of maintaining positive thoughts, as well as identifying and changing negative faulty

thought patterns (Feltham, 1999). This is a western cognitive psychotherapeutic technique taken from cognitive behavioural therapy (CBT) applied to sport settings. CBT methods, including correcting faulty thought patterns, which can be combined with eastern based techniques such as meditation.

2.3.1.2.5.1. Correcting faulty thought patterns

The experience of negative thoughts in life, sporting practice or performance, generally begins with a single negative thought, which turns into a downward spiral of negative thinking. For explanation purposes, this pattern of negative thinking can be displayed diagrammatically, by means of downward spirals. It is a phenomenon experienced by many individuals and athletes on a regular basis. The following technique can be used to alter the cycle of negative thinking. When the first negative thought is experienced athletes should identify that thought. They should say a key word such as “stop” or “no”. This first step is called thought stopping (Meichenbaum, 1985). The second step is to change the pattern of thinking from negative to positive creating an upward spiral of constructive thinking. This can be enhanced by reading or saying a list of positive statements in a form of positive self-talk (Wann & Church, 1998). Once established, athletes should ensure this positive thought pattern is maintained. Thought stopping and positive self-talk techniques should be practiced until they become an automatic process. Alternatively learning and therapeutic change may be achieved when the negative thought is recognized as having more meaning and value for improved performance and health.

2.3.1.2.5.2. Meditation

Meditation is based on eastern religion, philosophy, culture and experience. It relaxes the body, clears negative unwanted thoughts and focuses the mind (Reid, 1989; Weinberg & Gould, 2007). Before meditation athletes should find a quiet place, sit or stand in a comfortable position, close their eyes and synchronize their breathing. They should practice first clearing their mind of unwanted thoughts and then focusing their mind on a single positive point or thought. Meditation improves mind/body harmony, reduces stress, anxiety and improves positive thinking, self-confidence and belief. It is a spiritual experience, which together with slow breathing, calms athletes who can reflect on life and sporting experiences. In order to optimize their benefits, meditation and other cognitive arousal training techniques can be combined with progressive relaxation and mental imagery.

2.3.2. Mental imagery

2.3.2.1. Conceptual basis

Mental imagery is the cognitive recreation and rehearsal of a sporting action or experience (Gill, 2000). Utilized during many daily activities, it can be applied to sport settings in order to enhance performance. The imagery process utilizes small muscle movements and through its vividness employs all human senses. Theoretical underpinnings provide explanations for its effectiveness.

2.3.2.2. Theoretical understanding

Various theoretical viewpoints can be used to describe the mental imagery process. From a holistic experiential perspective, the bioinformational and psychoneuromuscular theories provide the clearest mind/body dualistic explanation.

Lang's (1977, 1979) bioinformational theory suggests imagery is most successful when both the stimulus preposition; i.e. thinking about the athletic stadium, the track, the crowd, other athletes, as well as the response preposition; i.e. actually standing in the stadium, on the athletic track, are experienced by the athlete. The physiological experience of the athletic setting is an important contextual learning factor, which should not be negated or neglected. Through imagery athletes can prepare for practice or competition at various venues, in front of different crowds, in diverse settings. This can diminish the potential negative effect of distractible factors thereby improving sporting performance.

As alluded to, imagery has a direct physiological effect on movement. Carpenter's (1894) psychoneuromuscular theory states that during the imagery process small amounts of neuromuscular activity, similar to but on a smaller scale than actual performance, are felt by the athlete. When focused on, this physiological experience improves an athlete's understanding of the link between imagery and motion. This cognitive, physical experience can be empirically evaluated where experimental groups receive only mental imagery training and control groups only physical training, with the same outcome results achieved when re-assessed. When unpacked there are two main imagery perspectives, internal and external.

2.3.2.3. Internal and external imagery viewpoint

When practicing internal imagery athletes' view their performance from their own vantage point (Potgieter, 1997). This is a relatively subjective process, which incorporates experiences, emotions, thoughts and feelings around past movements and performances. Internal imagery training can improve self-confidence and belief through the creation of personal positive imagery experiences.

During the practice of external imagery athletes perceive their performance using an external, more objective viewpoint. External imagery training can enhance emotional control and objectivity when addressing technical mistakes. It can remove personal bias and emotions, which can "cloud" an athlete's understanding of motion and performance. Both internal and external imagery are valuable and should be rehearsed attentively in order to understand and experience imagery holistically (Wann & Church, 1998). Furthermore, using both internal and external imagery improves an athlete's decision making capacity and "vision" ability.

2.3.2.4. Effectiveness of imagery

Imagery practice enhances other psychological skills such as arousal and attention. Through movement clarification imagery improves sporting capacity (Potgieter, 1997; Weinberg & Gould, 2007). Imagery is an extremely beneficial tool for athletes who are recovering from injury. It allows them to practice cognitive skills when they are unable to practice physical skills (Weinberg & Gould, 2007). Imagery has become one of the most popular widely used psychological skills, and there are a variety of

mental imagery training techniques that can be used to ensure comprehensive training and imagery skill enhancement.

2.3.2.5. Training techniques

Mental imagery ability can be improved by having a structured approach to visualizing an event (Nideffer, 1985). It is essential for athletes to construct the image as vividly as possible using all senses, and to control emotion and sporting performance associated with the image. Both internal and external imagery should be practiced in order to rehearse various imagery vantage points.

The creation of meaning associated with imagery is an essential part of the imagery process (Wann & Church, 1998; Weinberg & Gould, 2007). Meaningful imagery scenarios enhance self-confidence. They assist athletes in overcoming difficult sporting situations where they are required to rely on past positive life and sporting experiences.

For best results, imagery should be experienced both physiologically and psychologically (Sacket, 1934). Athletes should practice mental imagery on their sports field in order to visualize their event and feel grounded. This improves the imagery process through enhancement of the experience.

Imagery should be performed in conjunction with breathing, progressive relaxation and positive self-talk. The use of memory aids such as music and video recording can also enhance mental imagery ability (Nideffer, 1985). Athletes should always

remember to utilize techniques, which best suit their persona. The practice of imagery and motion can be done in stages i.e. purely cognitively, then performing the movement. As an added benefit, imagery practice generally enhances focus and concentration ability.

2.3.3. Attention and concentration

2.3.3.1. Conceptual understanding

Attention and concentration are separate psychological skills combined below due to their overlapping conception. Attention involves focusing mental ability on a current task. Concentration entails sustaining attention over a period of time, while being aware of environmental and situational factors (Harris & Harris, 1984; Weinberg & Gould, 2007). It is particularly important during lengthy sporting competitions. The maintenance of directional energy flow for attention and concentration can be clarified through the following theoretical conceptions.

2.3.3.2. Theoretical underpinnings

Attention and concentration ability is maintained through various perspectives and forms of focused directional energy, which incorporates visual, sensory and cognitive control. Nideffer (1985) views attention along a two dimensional matrix, comprised of width and direction. He describes four types of attentional focus: broad, narrow, internal and external. An example of broad internal focus is a track athlete planning his/her race strategy. An illustration of broad external focus is a sportsperson viewing

the athletic stadium. An example of narrow internal focus is an athlete controlling arousal through breathing. An illustration of narrow external focus is a track athlete focusing on his/her race lane (Potgieter, 1997).

2.3.3.3. Use of attention and concentration

When attention and concentration are maintained and athletes are not preoccupied with internal and/or external distractions, they are optimally focused and generally exude the right level of self-confidence. They complete activities as practiced and imagined, flow of energy is smooth and moderate arousal is typically experienced. Unfortunately this focus can be easily broken down in some athletes, when their attention and concentration are negatively affected by distractible factors.

2.3.3.4. Distractible factors

Attention and concentration can be disrupted by inappropriate negative thought patterns, faulty cognitions about previous events, misinterpretations or inability to control arousal as well as by anxiety, exhaustion, visual and auditory distractions (Wann & Church, 1998; Weinberg & Gould, 2007). Unfit or tired athletes can lose attention and concentration, and as a result focus on internal and/or external aspects rather than performance. The acquisition of training techniques in order to nullify distractible factors is one important aspect of focus enhancement (Weinberg & Gould, 2007). Training techniques improve attention, concentration ability and “sharpness”.

2.3.3.5. Focusing techniques

As a skill, attention and concentration can be enhanced through cue words, routines, simulation training, eye control, enhancement of other psychological skills and having a race/competition strategy (Moran, 2004; Weinberg & Gould, 2007).

Broad and narrow, internal and external attentional focus should be continually rehearsed in a variety of settings. Similar to the way in which thought patterns can become disrupted, athletes can become distracted and loose visual focus on a particular stimulus. Eye control can be enhanced though techniques such as focusing on a specific object of choice for a period of time, then tracking objects while maintaining attention and concentration. Cue words like “stay focused” or “keep concentrating” are used to focus and refocus an athlete when concentration ability has decreased or relapsed. As a practical task, athletes can focus on a point or object while a partner/coach attempts to distract him/her by reading out negative statements. This particular method rehearses possible sporting scenarios in front of distracting crowds. Thought stopping and positive self-talk in conjunction with the above techniques is often used to optimise attention and concentration ability (Wann & Church, 1998; Weinberg & Gould, 2007). When focus is maintained and athletes are not distracted, optimum self-confidence is often achieved.

2.3.4. Self-confidence

2.3.4.1. Conceptual framework

In a sporting context, self-confidence is the belief that one has the ability to successfully complete an athletic event (Weinberg & Gould, 2007). Like arousal, it is experienced along a continuum. Confidence is essential for choosing a direction in life and tactical decision making in sport and in life. It can be the difference between seizing the sporting opportunity or allowing the moment to pass by.

2.3.4.2. Theoretical understandings

Low levels of self-confidence can be caused by lack of practice, poor self-belief or faulty thought patterns. It can result in a self-fulfilling prophecy, where failure expectancy results in failure (Goldstein, 1994). On the other end of the continuum, overconfidence can cause athletes to become complaisant about their ability and result in them not wanting to practice, not listening to their coaches and not wanting to improve their skills. They may believe they know all there is to know about their sport and do not require further training.

2.3.4.3. Use of self-confidence

Optimal self-confidence, typically associated with moderate to high level self-confidence scores on standardised measures, usually produces desired sporting results and attainment of goals (Wann & Church, 1998; Weinberg & Gould, 2007). However

maintaining moderate to high self-confidence can be challenging as confidence can naturally increase when an athlete has a good performance or decrease after a run of poor performances. Self-confidence training techniques can help to maintain a consistent level of optimal self-confidence.

2.3.4.4. Training techniques

It is essential for athletes to understand how an optimal level of self-confidence produces peak performance. Once this optimal level is attained, belief in one's ability and realization of one's talent can be synchronized. Humble but confident athletes are constantly striving. They realize they can always learn new techniques and improve their skills. They comprehend the importance of having an open mind and utilizing not only traditional techniques, but also a variety of methods from different sports and cultures. They value the importance of spirituality and the need to develop the mind and themselves as human beings (Watson & Nesti, 2005). They strive to become "balanced" athletes, who can adapt and switch their skills on and off when required.

Optimum self-confidence can be regulated through self-talk, as an athlete elevates and grounds him/herself when necessary. It can be improved through imagery, regulation of arousal, being physically conditioned, acting confidently and remembering past sporting achievements (Weinberg & Gould, 2007). Self-confidence can also be enhanced through praise and encouragement from parents, team mates and friends.

Optimum self-confidence helps athletes to control and overcome their fears when striving to reach their desired performance. It assists athletes to achieve their goals

especially when “the odds are stacked against them”. Coaches are vitally important in building and maintaining self-confidence as well as motivation (Potgieter, 1997; Weinberg & Gould, 2007). In addition, clearly set goals build self-confidence at a subconscious level.

2.3.5. Goal setting and motivation

2.3.5.1. Conceptual basis

Owing to their interrelated conceptual and theoretical understandings, as in the case of other skills previously grouped together, goal setting and motivation will be discussed concurrently. Goal setting is the establishment of desired objectives, with the achievement of these goals dependent upon factors such as motivation (Moran, 2004). Motivation is the force and focus of an athlete’s energy (Weinberg & Gould, 2007).

2.3.5.2. Theoretical framework

Goals provide athletes with the intentionality to improve their motivation to train harder and push themselves further. They motivate and provide sportspeople with energy to complete seemingly impossible tasks (Weinberg & Gould, 2007). Goal setting provides athletes with direction, while indirectly building confidence and motivation (Potgieter, 1997).

Motivation can be interpreted in terms of an entity theory or an incremental learning perspective (Dweck, 1999, 2005). It is primarily concerned with an athlete’s appraisal

of their sporting talent (Sheldon & Eccles, 2005). While the entity theory suggests ability is fixed, the incremental theory suggests that skills develop over time. It is important for athletes to understand they have core abilities, but that training and learning new skills can improve sporting performance.

Motivation is influenced by personality traits and situational factors (Weinberg & Gould, 2007). Locus of control refers to the subjective belief that life is controlled by internal or external factors. An athlete, who has an internal locus of control, attributes success or failure to his/her own characteristics. A sportsperson, who has an external locus of control, attributes success or failure to environmental factors, rather than individual traits. Maintaining a balance between the two creates optimal understanding of personal and environmental control.

2.3.5.3. Motivation for training

Unrealistic goals can cause despondency (Potgieter, 1997; Weinberg & Gould, 2007). While a lack of short-term goals may result in athletes being unsure of current objectives, a lack of long-term goals may result in over impulsiveness and athletes over striving for immediate goals. An over emphasis on external or internal locus of control can also cause dejection. Situational factors such as level of competition, venue and coach can influence an athlete's motivational level, and effective goal setting and motivational training is an integral part of performance evaluation and achievement. Both goal setting and motivation should be trained and utilized holistically.

2.3.5.4. Training techniques

Goal setting ability can be enhanced by appropriate motivation related to specific, measurable, action-related, realistic and timetabled goals (Bull, Albinson & Shambrook, 1996; Moran, 2004). An athlete should maintain a positive mindset and remain consistently focused on his/her life and sporting goals. Coaches should encourage athletes and provide constant constructive feedback as motivation levels increase when goals are achieved, when sportsmen and women feel confident, and when they receive encouragement from significant others. In addition, goals that are motivational in orientation are an important part of general life and sport psychological skill development (Harwood, Cumming & Fletcher, 2004).

An athlete, in consultation with his/her coach/sport psychologist, should establish practice and competition short- and long-term goals. These goals should be specific, measurable and realistic (Bull et al., 1996; Moran, 2004). They should be process (e.g. movement during the event), performance (e.g. improving on previous performance) and outcome orientated (e.g. playing to full potential/coming first in the event) (Miller, 1997; Weinberg & Gould, 2007). Goals should be written down and rewarded when achieved. They should however remain somewhat flexible, as life and sporting goals often change over time (Potgieter, 1997).

2.4. PST programs, psychological skills and psychological well-being

With PST programs training a greater level of psychological skills than single PST interventions, it is logical to deduce that these programs will impact differently on

aspects of health. While research has investigated the relationship between psychological skills and some components of mental health such as mood (Meyers & Sterling, 2003) the impact of PST programs on psychological well-being has not been measured. This is discussed in part by Kirschenbaum et al. (1995) and confirmed by a widespread literature search on websites such as Pubmed, Ebschohost, Psychinfo and Sabinet. One fundamental link is that both psychological skills and psychological well-being are trainable psychological concepts, essential for health and performance in general life and in sport contexts.

2.5. Résumé

This chapter provided a review of the literature on psychological skills training programs and psychological skills, and outlined links between PST package programs, psychological skills and psychological well-being. The next chapter will examine psychological well-being, as well as provide further associations between psychological skills and positive mental health.

CHAPTER THREE

LITERATURE REVIEW

PSYCHOLOGICAL WELL-BEING

3.1. Introduction

This chapter reviews the paradigm shift which has occurred in health and the extensive research conducted on psychological well-being. It discusses the recent change in research focus from a subjective to an objective conception of psychological well-being, and the development and utilization of Ryff's scale. It furthermore discusses possible links between the concepts of psychological skills and psychological well-being.

3.2. Health

The World Health Organization defined health as not only the absence of illness but a complete state of mental, physical and social well-being (World Health Organization, 1946). This led to a change in focus from an overemphasis of the medical model towards the development of a public health model (Conway & Macleod, 2002; Pretorius, 1998; Wissing & Van Eeden, 1998). Explorations by researchers such as Antonovsky (1979, 1987) and Strumpfer (1990, 1995) resulted in a further paradigm shift in health management strategies from an illness treatment *pathogenic* orientation to a health promotion and illness prevention *salutogenic/fortigenic* approach. As

outlined by Antonovsky (1979, 1987), salutogenesis is the study of health rather than the study of disease and focuses on the origin of health. As proposed by Strumpfer (1990, 1995), fortigenesis refers to the source of strength. The pathogenic orientation is necessary and effective if the focus is on the treatment of illness. In contrast the salutogenic approach focuses on health promotion.

Our argument is concerned with this paradigm shift with special reference to mental health. For example the common cold of mental disorders, depression, which is closely associated with stress, anxiety and destructive lifestyles, is currently affecting 121 million people worldwide (World Health Organization, 2007). Whereas previous healthcare interventions for depression, anxiety and stress focused predominantly on psychopharmological medication, contemporary approaches have utilized psychological well-being promotion strategies (Conway & Macleod, 2002; Edwards, 2005). Although effective, medication can have varying side effects resulting in possible addiction and toxicity of the human system. Natural methods of health promotion compliment the body, immune system and improve biopsychosocial well-being at a much reduced financial and physiological cost. Exercise is a cost effective health promotion strategy (Biddle, Fox & Boutcher, 2000).

Exercise movements such as “Walk for Life” are examples of the awareness of exercise as a health promotion intervention strategy. Studies have suggested that exercise improves self-esteem, self-perception, anxiety and stress (Fox, 2000a; Scully et al., 1998), with recent research demonstrating that physical activity can be as

effective as psychopharmological medication in the treatment of mild to moderate depression (Biddle, Fox & Boutcher, 2000; Bulgatz, 2005).

At a physiological level, physical activity guards against coronary heart disease, hypertension as well as some forms of cancer and diabetes (Scully et al., 1998), with one practical example being the heartbeat of a trained individual returning to a rate of normal function faster than untrained individuals (Sinyor, Schwartz, Peronnet, Brisson & Seraganian, 1983). Health intervention strategies include general well-being promotion related to eating healthily, taking care of oneself, accessing social support and using problem solving techniques.

As a component of general health and well-being, psychological well-being has been widely researched and evaluated over the last two decades (Berger, 1994, 1996, 2001; Keyes, Shmotkin & Ryff, 2002; Ryff, 1989a, 1989b; Ruini, Ottolini, Rafanelli, Tossani, Ryff & Fava, 2003; Wissing & Van Eeden, 1998).

3.3. Psychological well-being

Psychological well-being refers to positive mental health (Edwards, 2005). Research has shown that psychological well-being is a diverse multidimensional concept (MacLeod & Moore, 2000; Ryff, 1989b; Wissing & Van Eeden, 2002), which develops through a combination of emotional regulation, personality characteristics, identity and life experience (Helson & Srivastava, 2001). Psychological well-being can increase with age, education, extraversion and consciousness and decreases with neuroticism (Keyes et al., 2002).

In terms of gender, research has suggested that there is no significant difference between men and women on measures of psychological well-being (Roothman, Kirsten & Wissing, 2003). Furthermore, the perception of physical health and spirituality can mediate the relationship between context and psychological well-being (Temane & Wissing, 2006a, 2006b).

Psychological well-being has undergone extensive empirical review and theoretical evaluation (Wissing & Van Eeden, 1998). There is currently no single consensual conceptual understanding of psychological well-being. Bradburn's (1969) initial understanding of psychological well-being provided a depiction of the difference between positive and negative affect. Preliminary research was mainly concerned with the experiences of positive and negative affect, subjective well-being and life satisfaction that were formed around the Greek word '*eudemonia*', which was translated as 'happiness' (Ryff, 1989b). Happiness was described as the equilibrium between positive and negative affect. Many early scales, such as Diener, Emmons, Larsen & Griffen's (1985) Satisfaction with Life Scale on which a vast amount of research was conducted, used this initial subjective conception of well-being (Conway & Macleod, 2002; Diener et al., 1985). The Satisfaction with Life Scale requires participants to indicate a cognitive rather than affective response in relation to global satisfaction with their quality of life.

Other assessment measures have including Antonovsky's (1993) Sense of Coherence Scale with adaptations by Frenz, Carey and Jorgensen (1993), the Fortitude Scale (Pretorius, 1998), Social Readjustment Scale (Holmes & Rahe, 1967) and Beck's Depression Inventory (Beck, Ward, Mendelson, Mock & Erbaugh, 1961). The Sense

of Coherence Scale assesses comprehensibly, meaningfulness and manageability. The Fortitude Scale measures self-appraisals, family appraisals and support appraisals. The Social Readjustment Scale evaluates present experiences of stress in terms of significant life events. The Beck's Depression Inventory assesses emotional distress in the form of depression.

Despite extensive evaluation and assessments, experts have indicated that psychological well-being is a diverse multidimensional concept, with exact components still unknown (MacLeod & Moore, 2000; Ryff, 1989b; Wissing & Van Eeden, 2002). Ryff has extensively researched the objective understanding of psychological well-being.

3.3.1. Ryff's objective psychological well-being conception

Waterman (1984) and Ryff's (1989b) work suggests '*eudemonia*' was perhaps incorrectly translated as happiness. Carol Ryff's (1989b) research has brought about a shift in focus from a subjective to an objective conception of psychological well-being. Her research is theoretically and conceptually grounded on Maslow's (1968) conception of self-actualization, Rogers' (1961) view of the fully functioning person, Jung's (1933) formulation of individuation, Allport's (1961) conception of maturity, Erikson's (1959) psychosocial stage model, Buhler's (1935) basic life fulfilment tendencies, Neugarten's (1973) descriptions of personality change in adulthood and old age, and Jahoda's (1958) six criteria of positive mental health, as well as additional more meaningful connotations of '*eudemonia*', such as realizing potential through some form of struggle. Ryff's (1989b) research has resulted in a new

objective psychological well-being measurement being developed (Conway & Macleod, 2002; Keyes et al., 2002; Ruini et al., 2003; Ryff, 1989b; Ryff & Keyes, 1995), with the following components autonomy, personal growth, environmental mastery, purpose in life, positive relations with others and self-acceptance. This scale has been regarded as the best objective measure of positive mental health (Conway & Macleod, 2002).

3.3.1.1. Psychological well-being components

Ryff's components of objective psychological well-being are outlined separately below for explanation and clarification purposes. When unpacked there appears to be a relationship between Ryff's psychological well-being components and the psychological skill components previously outlined, with psychological well-being components seemingly inter-related with various psychological skills components. A further association is that a variety of techniques including breathing and self-talk are used to improve both psychological skills and psychological well-being (Berger, 1994, 1996, 2001; Stelter, 1998, 2000, 2001; Wann & Church, 1998; Weinberg & Gould, 2007).

3.3.1.1.1. Autonomy

Autonomy is the regulation of one's own behaviour through an internal locus of control (Ryff, 1989b; Ryff & Keyes, 1995). A fully-functioning person has a high level of internal evaluation, assessing the self on personal standards and achievements while not relying on the standards of others. They do not strive for endorsement from

other individiuals (Ryff, 1989b), are focused on their own beliefs and are less swayed by others people's ideas. A high level of autonomy suggests independence with a low level suggesting concern over self-perception. Internal locus of control is an important component of motivation (Weinberg & Gould, 2007) with athletes' generally requiring autonomy, personal insight and objectivity in order to sustain self-confidence and belief. Autonomy is also linked to self-determined motivation in sport participation (Huang & Jeng, 2005).

3.3.1.1.2. Personal growth

Personal growth is the ability to develop and expand the self, to become a fully functioning person, to self-actualize and accomplish goals (Ryff, 1989b; Ryff & Keyes, 1995). To achieve peak psychological functioning one must continue to develop the self through growth in various facets of life (Ryff, 1989b). This requires one to continually evolve and solve problems thereby expanding one's talents and abilities. An elevated level of personal growth is associated with continued development while a depleted level is suggestive of a lack of growth. Sportspeople with a growth mindset realize hard work yields results (Dweck, 2005). A growth mindset requires openness to a variety of new and diverse experiences. Athletes, who are humble but confident, are constantly striving for personal growth and holistic development (Weinberg & Gould, 2007); they generally use positive and negative performances, as well as goals achieved, to enhance personal growth. Personal growth is potentially the psychological well-being dimension that is closest to eudemonia (Ryff, 1989b).

3.3.1.1.3. Environmental mastery

Environmental mastery refers to choosing and controlling the surrounding and imagined environment through physical and/or mental actions (Ryff, 1989b; Ryff & Keyes, 1995). While a high level of environmental mastery reflects control over one's context, a low level is related to inability to successful control one's environment (Ryff, 1989b). A mature individual is generally able to interact and relate to a variety of people in diverse situations and adapt to various contexts upon demand. Being in control of physiological and cognitive arousal can improve an athlete's control and understanding of their surroundings, as well as their interactions with others. Imagery results in improved self-awareness as well as enhanced situational and environmental understanding (Potgieter, 1997; Weinberg & Gould, 2007). Environmental mastery means being able to control complex environmental and life situations (Ryff, 1989b) and to seize opportunities which present themselves. It often requires the ability to step out of one's 'comfort zone' when striving for optimal sporting performance.

3.3.1.1.4. Purpose in life

Purpose in life refers to the perceived significance of one's existence and involves the setting and reaching of goals, which contribute to the appreciation of life (Ryff, 1989b; Ryff & Keyes, 1995). Mental health includes awareness that one has a greater goal and purpose in life (Ryff, 1989b). Purpose in life creates direction, thereby eradicating despondency. Goals are an important part of striving for success (Miller, 1997). Maturity involves having a clear sense of intentionality (Ryff, 1989b). When athletes sustain focus, attention and concentration, set realistic goals and aim to be

more holistic, they seek a greater goal for themselves and often then also assist others. The setting and achieving of goals can be inspirational and motivational in nature (Potgieter, 1997; Weinberg & Gould, 2007).

3.3.1.1.5. Positive relations with others

Having positive relations with others is an essential component in the development of trusting and lasting relationships as well as belonging to a network of communication and support (Ryff, 1989b; Ryff & Keyes, 1995). A calm and relaxed approach reflects maturity, leads to improved interactions and better consideration of others. While good relations result in an understanding of others, poor relations can cause frustration (Ryff, 1989b). The ability to have good human relations is one key feature of mental health with pathology often characterized by impairment in social functioning (American Psychiatric Association, 2000). Communication is an important part of team interactions (Miller, 1997; Potgieter, 1997). In group/team settings, positive relations with others often results in increased knowledge, empowerment and improved sporting performance.

3.3.1.1.6. Self-acceptance

Self-acceptance is the most recurring aspect of psychological well-being. It is a fundamental feature of mental health and an element of optimal functioning (Ryff, 1989b; Ryff & Keyes, 1995). Healthy levels of self-acceptance create a positive attitude and improved satisfaction with life (Ryff, 1989b). Moderate levels of confidence lead to greater achievement and acceptance (Wann & Church, 1998;

Weinberg & Gould, 2007), with positive feedback from others important in the maintenance of self-confidence and belief. Self-acceptance is a key component of self-actualization, enhanced psychological functioning and development (Ryff, 1989b). It entails accepting the past and present as well as maintaining direction for the future.

3.3.1.2. Research using Ryff's scale

Ryff's scale has been translated into various languages, received some international cross-cultural validation and been used in a variety of research settings (Keyes & Ryff, 2003; Lindfors, 2002; Plaut, Markus & Lachman, 2002; Staudinger, Fleeson & Baltes, 1999).

It has been extensively applied to evaluate life change. Particular focus has included: the well-being of Canadian elderly people (Clarke, Marshall, Ryff & Rosenthal, 2000), mental and physical health in later parts of life (Heidrich & Ryff, 1993a), the psychological adjustment of young adults (Heidrich & Ryff, 1993b), the older self (Heidrich & Ryff, 1996), social structures and quality of life in adults (Keyes & Ryff, 1998), the change in self-concept through life's transition (Kling, Ryff & Essex, 1997), coping and well-being in later life (Kling, Seltzer & Ryff, 1997), variations of the self in adult and elderly life (Ryff, 1991), successfully growing older (Ryff, 1989a), understanding of positive health and life experience (Ryff & Essex, 1992), explorations into areas of life and their value (Ryff & Heidrich, 1996), evaluation of middle aging (Ryff, Lee, Essex & Schmutte, 1994), autonomy and well-being during life transition (Showers & Ryff, 1996), positive mental health in adult life (Ryff,

1995), importance of women achieving midlife career dreams (Carr, 1997), contours of psychological well-being in women (Ryff, 1997), perceived life span and adult personality (Fleeson & Baltes, 1998; Fleeson & Heckhauser, 1997), life management approaches (Freund & Baltes, 2002), self-discrepancy across the life cycle (Heidrich, 1999), different routes of adult development (Helson & Srivastava, 2001), the midlife well-being and health impact of early parental separation or loss (Maier & Lachman, 2000), psychological well-being and distress for adults of alcoholics (Tweed & Ryff, 1991) and parental self-evaluation (Ryff, Schmutte & Lee, 1996; Shmutte & Ryff, 1994).

Research has also focused on the positive mental health continuum (Keyes, 2002; Ryff & Singer, 1998), health and social factors (Heindrich & Ryff, 1996; Marmot, Ryff, Bumpass, Shipley & Marks, 1997), psychological distress and depression (Li, Seltzer & Greenberg, 1999; Rafanelli, Park, Ruini, Ottolini, Cazzaro & Fava, 2000), rheumatoid arthritis (Mangelli, Gribbon, Buchi, Allard & Sensky, 2002), impact of caring for others (Marks, 1998), psychotherapy and well-being (Fava, 1999; Fava, Rafanelli, Grandi, Conti, Belluardo, 1998; Ryff & Singer, 1996) as well as the impact of community and contextual factors on well-being (Heidrich & Ryff, 1995; McKinley, 1999; Plaut et al., 2002; Smider, Essex & Ryff, 1996; Staudinger et al., 1999).

Ryff's scale has been used in South Africa over the last five years. The first study was to establish preliminary South African norms with university students (Edwards, Ngcobo & Pillay, 2004). This research involving 430 university students with a mean age of 22.23, yielded a standard deviation of 4.6 and range of 16-48 years, with South

African sample means lower on all measures than United States' sample means. South African sample mean and standard deviation findings for psychological well-being dimensions were: autonomy (mean 13.0 and standard deviation 3.5), personal growth (13.7 and 2.7), environmental mastery (12.1 and 3.2), purpose in life (9.8 and 3.1), positive relations with others (10.7 and 3.3), self-acceptance (12.6 and 2.6) and total psychological well-being (12.0 and 3.1). Spearman's analysis showed all dimensions correlated significantly with each other at the 1% level of significance. All correlations were modest ranging from 0.14 (purpose in life and autonomy) to 0.33 (environmental mastery and autonomy). Principle component factor analysis revealed that a single factor of psychological well-being accounted for 35,22% of the variance and that all components were moderately correlated with this one factor, extending from 0.47 (purpose in life) to 0.65 (autonomy and environmental mastery). The reliability analysis revealed an overall alpha coefficient of 0.63.

The second study was to compare psychological well-being amongst different types of sport and exercise (Edwards et al., 2004) confirming previous research regarding the impact of sport and exercise on psychological well-being. Subsequent research using Ryff's scale has been undertaken in individual and team sport settings as well as in the assessment and promotion of health amongst soccer players, gym members, runners, surfers and hockey players (Danariah, 2007; Davidson, 2007; Edwards et al., 2004; Edwards et al., 2005). The scale was used to evaluate a mutual aid programme for emergency personal (Mbutho, 2005) and to assess a psychological well-being intervention for people living with HIV and Aids (Edwards, 2004).

Adaptations of Ryff's scale featured in an investigation into the use of exercise as a medium for mental health promotion among institutionalised children (Chetty, 2007; Mnguni, 2005) and to assess a yoga psychological well-being program for people living with HIV and Aids (Williams, 2006).

3.3.2. Psychological well-being, physical activity, sport and exercise

The relationship between physical activity and psychological well-being has been noted in many studies (Biddle et al., 2000; Bydawell, 2006; Edwards et al., 2004; Edwards et al., 2005; Hayes & Ross, 1986; Malebo, Van Eeden & Wissing, 2007; Scully et al., 1998).

Research has demonstrated that psychological well-being is promoted through regular exercise and sport, which occurs for at least twenty minutes a day, three or more times a week (Scully et al., 1998). Regularly exercising hockey players, health club members and runners were found to be more psychologically well than irregular exercisers (Edwards et al., 2005). Similar improved psychological well-being has been found with swimming, yoga and fencing (Berger & Owen, 1998), rugby (Maynard & Howe, 1987), karate and weight training (McGowan, Pierce & Jordan, 1991). In addition, Krawczynski and Olszewski (2000) were able to demonstrate the longitudinal effectiveness of a physical activity program on the psychological well-being of persons over sixty years of age.

Improved psychological well-being seems to be most especially associated with regular, moderate intensity exercise interventions where the type, intensity and

duration of the exercise programs are tailored to suit the particular exercisers. Eastern knowledge has resulted in the development of "soft, slow" moderate exercise for improving health. Non-competitive movements involving rhythmic abdominal breathing of twenty to thirty minutes duration in comfortable, predictable contexts as in Tai Chi, Pilates, Yoga, dance, aerobic exercise and resistance training, which is performed in a slow, controlled way, in individual and group settings seem to be particularly effective (Berger, 1994, 1996, 2001; Stelter, 1998, 2000, 2001).

As a form of exercise, deep, full, slow breathing is one of the most natural forms of mental health promotion (Edwards, 2005), with conscious breathing and meditation often leading to infinite spiritual experiences and insights (Edwards, 2006). Its effectiveness can be experienced immediately. Workshops on breathing techniques for health promotion are being offered at various International Conferences. Titles include "A workshop on breathing methods in sport psychology", "The evaluation of a psychology of breathing workshop", "Breath based stress management and health promotion" and "A psychology of breathing" (Edwards & Edwards, 2005, 2006, 2007b, 2007c).

The personal valuing of exercise is an important factor that should be taken into account as people repeat behaviour which is motivational (Edwards & Fox, 2005). Exercise should be a meaningful experience (Edwards, 2002) with positive connotations focused on by the sport psychologist with the athlete. One example is the phenomenon "runners high" which is a heightened ecstatic emotional sensation experienced by runners, when they focus on their natural surroundings (Sachs & Buffone, 1984).

3.4. Résumé

This chapter provided literature on the shift in the health paradigm, psychological well-being, Ryff's subjective psychological well-being conception, relationship between psychological well-being and psychological skill components. The next chapter will provide the methodology of the study.

CHAPTER FOUR

METHODOLOGY

4.1. Introduction

This methodology chapter is concerned with the development, implementation and evaluation procedure for the PST program, as well as the design, measuring instruments, data analysis techniques and ethics of the study.

4.2. PST program

4.2.1. Program development, implementation and evaluation procedure

The effectiveness of programs is inadequately evaluated at times due to insufficient planning, implementation and assessment measures. For these reasons, a structured, systematic approach, based upon Potter's (1999) work was used in the development, implementation and evaluation of the PST program. This involved a needs assessment (investigating the research area), planning and procedure (formulating and developing the program), outcome evaluation (assessing the effectiveness of the program with qualitative and quantitative measures) and process evaluation (examining the program's success/failure).

4.2.1.1. Needs assessment

As outlined in the problem statement and motivation, there was a need to implement PST interventions in South Africa and evaluate their effectiveness and impact on psychological well-being. This need was initially recognized at youth track athlete level, but was also utilized with adult athletes and individuals at a community workshop. This enabled assessment and the promotion of health, well-being and skills at individual, group and community, elite and non-elite levels. The need to investigate the relationship between psychological skills and psychological well-being, led to experts being asked to participate in the research.

4.2.1.2. Program planning and procedure

While various PST programs for athletes have been developed, as reviewed, few are as highly focused and structured as Wann and Church's (1998) program. Relevant adjustments were made to Wann and Church's program with in-depth training of goal setting and motivation, as well as more psychological skill training techniques added to their existing program. It was considered that these components were an important part of holistic psychological skills training which would be of benefit to participants. The program covered physiological arousal, cognitive arousal, mental imagery, attention, concentration, self-confidence, goal setting and motivation. Some skills were combined for didactic purposes, namely attention and concentration, and goal setting and motivation. In each case the program presentation was adapted to suit high school participants, adult elite sportspersons and community workshop participants.

4.3. Design

The final triangulated design used both qualitative and quantitative methods, and consisted of two interventions and two case studies. This had the advantage of examining the program from different perspectives and collecting diverse data from individual, group and community participants and contexts.

4.3.1. Interventions

4.3.1.1. School group intervention

4.3.1.1.1. Design

The school group intervention included a randomized experimental and control group repeated measures design with pre-test (T1) eight weeks before the start of the athletics season's training, post-test (T2) at the end of the program and before the season's training began, and follow-up testing (T3) at the end of the season. Before and after session, different process measurements (Pm) were used to evaluate the progress of the participants during the PST program. This design is schematically represented as follows.

Randomization	Experimental group	PST program	Athletics season	
	Control group			PST program
		T1 Pm	T2	T3 Pm

4.3.1.1.2. Intervention process

The school group intervention was originally proposed for a large sample of high school track athletes. This sample was chosen as their events could be measured quantitatively. Three schools, one private girls school, one public girls school and one public boys school, whose learners represented the multicultural population of South Africa, with African, Indian, Coloured and White learners, were contacted in the urban, relatively economically developed Durban North area and invited to partake in the research. Due to other involvements including busy sport and study schedules, two of the three schools did not commit to the study. The head sports coach for the participating public girls school obtained permission from the school principal, before identifying participants for the study. The actual intervention process consisted of eight stages.

4.3.1.1.2.1. Stage one: contact with school participants

An informational letter (Appendix A) and research consent form (Appendix B) were sent to the participants' parents. Participants, who returned the signed parental consent form and signed assent, were allowed to partake in the program. The school sample consisted of 16 female 100 metre participants, who also participated in various other sporting activities. Owing to the sample size being sufficient for efficient group interventions, it was decided to continue with this smaller sample and increase the qualitative research aspects. The demographics of the school sample ranged from grades 10 to 12, with the participants ages ranging from 16 to 18 years.

4.3.1.1.2.2. Stage two: school group intervention pre-test

Eight weeks before the athletics season began, biographical information was collected (Appendix C) and school participants were assessed on both quantitative and qualitative outcome (T1) measures (Appendices D, E, F, G and H). With the assistance of the school head coach, whose main role consisted of the distribution and collection questionnaires, initial assessment data (T1) was collected over a period of 1 week.

A daily training schedule was provided to the school participants, and they were asked to complete the training schedule between the pre- and follow-up testing (Appendix I).

4.3.1.1.2.3. Stage three: experimental and control group allocation

As often happens in actual program implementation ideal randomized control conditions were not possible. Small numbers and student examinations resulted in a quasi-experimental design with the process of allocation to experimental and control groups based on student availability rather than randomisation. The experimental group consisted of 9 participants (4 grade 12 pupils who requested to be in the experimental group due to matriculation trial examinations, together with 5 pupils in grades 10 and 11). The control group consisted of 7 participants (grades 10 and 11 pupils).

4.3.1.1.2.4. Stage four: PST program for school experimental group participants

Seven weeks before the season's training began, the PST program was commenced with the school experimental group. The program consisted of six weekly sessions, covering the six psychological skill topics. Each session was run during the week and ranged from one to two hours. The sessions were all structured into the following format: formal instruction to introduce the concept and theories, interactive discussion, concept practice and homework assignment. Participants, who were in the same grade or had contact with one another at school, reminded each other about and discussed the program at school forming an interactional supportive group environment outside the scheduled psychological skills training sessions. Before and after each session the participants were assessed using both quantitative and qualitative process measures relevant for the particular session concerned (Appendices J, K, L and M, N, P, R, T, V, X and Y). At each session each participant received an educational handout of the session (Appendices O, Q, S, U, W, and Z) including suggested homework, which was explained to them in comprehensive detail. Throughout this time the control group received no intervention. The following interactive account of the experimental group sessions includes the perceptions of participants and researcher.

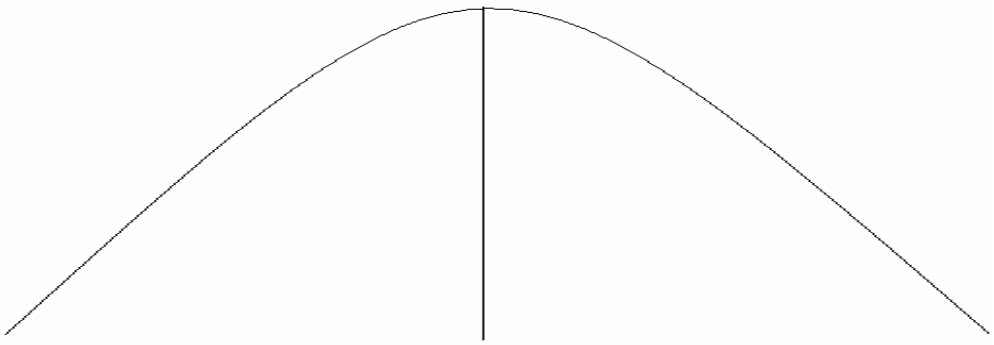
4.3.1.1.2.4.1. Session 1: physiological arousal

The first session on physiological arousal, conducted in the school gymnasium, was attended by seven of the nine experimental group participants. Due to school and personal commitments two learners were not present. None of the participants had

received any previous sport psychology training and an introductory overview of sport psychology and PST programs was provided. This overview explained the natural utilization of psychological skills on a daily basis, the composite nature of psychological skills and PST programs as well as the impact of PST on sporting performance. The overlapping nature of psychological skills and PST techniques was reiterated throughout the PST program.

The concept of arousal was explained at a presentation level appropriate for high school learners, a procedure which was utilized during the program. This explanation outlined physiological and cognitive arousal as inseparable, inter-linking experiences, trained independently for clarification purposes.

The arousal continuum, together with potential positive and negative arousal experiences, was discussed with participants who shared life and sporting examples thereby creating an effective group interaction, an environment which was maintained throughout the PST program. An inverted U hypothesis diagram, displayed below, was used to visually illustrate the inverse relationship between physiological arousal and performance.



Low arousal hinders performance | Moderate arousal related to optimal performance | High arousal hinders performance

The zone of optimal functioning theory was used to further illustrate the arousal performance relationship. Participants shared past experiences of being in the zone.

The utilization of breathing to increase and decrease physiological arousal, by shortening and lengthening the in- and out-breath, was explained. After a practical demonstration, participants used breathing to heighten and lower their physiological arousal levels. A group discussion of experiences followed. Participants expressed interest in the breathing techniques.

The benefits of progressive relaxation were outlined. Participants completed a progressive relaxation exercise which involved tensing then relaxing the following muscle groups, in order, for five seconds each.

1. right hand and fingers
2. right forearm
3. right upper arm
4. left hand and fingers
5. left forearm
6. left upper arm
7. head and face
8. shoulders
9. chest
10. stomach and abdomen
11. right upper leg
12. right lower leg
13. right foot and toes
14. left upper leg
15. left lower leg
16. left foot and toes

The value of combining slow breathing, and association of meaning with progressive relaxation, was emphasized during the exercise.

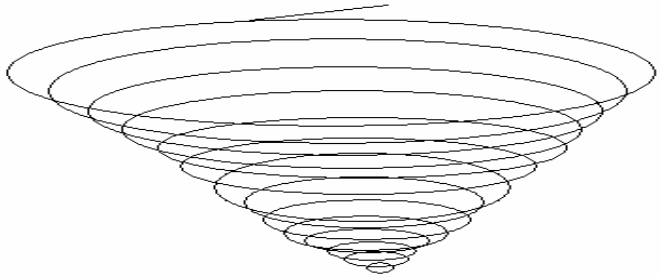
In closing, homework was provided that outlined the importance of regular practice of physiological arousal training techniques.

4.3.1.1.2.4.2. Session 2: cognitive arousal

Eight participants were present for the cognitive arousal session. A detailed

explanation of the concept of cognitive arousal, and the importance of moderate cognitive arousal prior to and state of "no mind" during an event, was provided.

Theoretical underpinnings of cognitive arousal were conveyed using the A-B-C model of event reaction. Practical examples were used to clarify the model. Negative and positive thought patterns, resulting in downward and upward spiralling effects respectively, were explained diagrammatically.



Thought stopping which commences after the first negative thought, changes a downward pattern of negative thinking into an upward spiral of positive thinking

The group then discussed thought stopping and positive self-talk techniques, providing both positive and negative life/sporting thought experiences. The participants split into pairs and read out negative statements, including "Your start is too slow", "Your stride is uneven", "Your breathing is incorrect" and "You are not fast enough", to their partners who practiced thought stopping then positive self-talk in response. The learners expressed their interest in CBT and its value in sport/everyday situations.

Meditation was discussed with the group and participants then found a quiet space, closed their eyes, removed all unwanted thoughts and meditated on a single positive point of their choice. As a closing exercise participants used positive self-talk to encourage each other.

Homework exercises expressed the value of consistently rehearsing cognitive arousal training and meditation. To ensure comprehensive psychological skills training was offered, missed sessions were made available to participants throughout the program.

4.3.1.1.2.4.3. Session 3: mental imagery

Eight participants were present at the third session. The mental imagery and subsequent sessions were conducted on the sports field, which allowed for practical imagery training and situational learning. The concept of mental imagery, as well as bioinformational and psychoneuromuscular theories, was used to illustrate the link between imagery and movement.

Internal and external imagery, and their relative subjectivity and objectivity, were discussed with the participants. Learners practiced internal and external imagery, with particular focus on the enjoyment, meaning and vividness of the images. They reported the value of using imagery and self-reflective objectivity in everyday life.

As a homework exercise participants were encouraged to continually rehearse imagery in order to better understand patterns of movement as well as to combine imagery with relaxation techniques.

4.3.1.1.2.4.4. Session 4: attention and concentration

The attention and concentration session was attended by eight learners. The four types of attentional focus: broad, narrow, internal and external, were explained in detail to the group. Participants firstly shared situations where they had maintained attention and concentration, then discussed internal and external distractible factors.

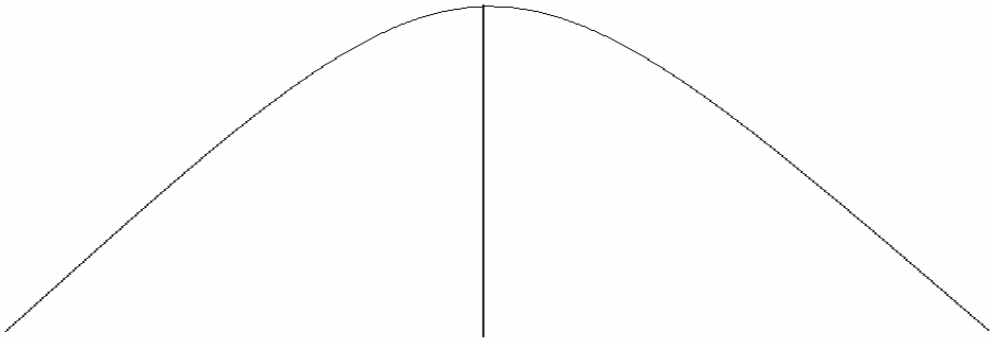
Concentration training techniques were outlined and demonstrated with learners who practiced attentional focus by sitting on the sport grandstand, then standing at the race start line. They practiced eye control, focusing on a specific object of choice, which was followed by the tracking of objects on the sports field.

Participants then separated into pairs and used cue words such as “stay focused” to concentrate on a dot on the back of their handout page. At the same time a partner attempted to distract them by reading out negative statements including “You are not focused on this task”, “You are unable to concentrate for a long period of time”, “You are becoming distracted” and “You are losing concentration”. As a closing exercise, learners practiced thought stopping then positive self-talk to maintain attention and concentration.

Participants expressed their enjoyment of the session, particularly the attention and concentration grid assessment exercise. Homework outlined the importance of both enhancing and maintaining their attention and concentration through the use of practical training techniques.

4.3.1.1.2.4.5. Session 5: self-confidence

Due to hockey fixtures, only three participants were present at the fifth session. Learners requested the session continue, despite low attendance. The self-confidence continuum was compared to the arousal continuum and further illustrated by the following diagrammatical drawing.



Under confidence hinders performance	Optimal self-confidence related to desired performance	Over confidence hinders performance

Diagram describing the inverse relationship between self-confidence and sporting performance

Participants shared examples where the various confidence levels had resulted in positive/negative sporting outcomes. A description of athletes, who are humble yet confident, was provided to the group to reiterate the value of optimum self-confidence.

A detailed discussion on self-confidence training techniques followed. Participants then practiced positive self-talk, while maintaining an optimal level of self-confidence. Learners analyzed a personal experience of optimal self-confidence and

performance. They visualized themselves, in detail, winning their athletic event at different levels of competition. For easier accessibility during difficult sporting situations, they paired their scenarios with a meaningful experience.

Learners reported the session to be most valuable. Homework exercises expressed the importance of maintaining optimal self-confidence levels, in order to produce peak performance.

4.3.1.1.2.4.6. Session 6: goal setting and motivation

The goal setting and motivation session was attended by all nine participants, where the establishment of desired goals was explained. Factors which can influence motivation were discussed, and the value of having an internal and external locus of control was emphasized. The following analogy, that while athletes have core abilities, both training and learning new skills can enhance sporting ability, was used to explain entity theory and incremental learning perspectives. An in-depth group discussion, on the importance of coaches providing positive feedback, followed.

Participants were asked to review their motivational levels, by analyzing the importance of having a balance between an internal and external locus of control. They remembered past goals and set or adjusted future life and/or sporting goals.

Homework exercises required reflection on the link between motivation and goal setting. Participants expressed their enjoyment of the final session and PST program as a whole.

4.3.1.1.2.5. Stage five: school group intervention post-test

At the end of the intervention the experimental and control group school participants were re-assessed (T2) using the quantitative and qualitative outcome measures (Appendices D, E, F, G, H and AA). The experimental group evaluated the experience of being in the PST group (Appendix BB) and PST program (Appendix CC). Examination commitments resulted in missing data from some control group participants.

4.3.1.1.2.6. Stage six: school experimental group PST review session

The experimental group met for a PST review session during their athletics season (between T2 and T3). Five of the nine participants were present. During the session the psychological skills were re-discussed, with the experience, use of PST and its impact on sport and life explored. The participants appeared to retain a vast amount of conceptual, theoretical knowledge about the psychological skills and PST techniques. Participants emphasized the value of the review session.

4.3.1.1.2.7. Stage seven: school group intervention follow-up testing

At the end of the athletics season, the school experimental and control participants were re-assessed (T3) using the quantitative and qualitative outcome measures (Appendices D, E, F, G and H).

4.3.1.1.2.8. Stage eight: PST program for school participant control group

The control group received the intervention after re-assessment (T3). The PST program was run in the same manner as was the case with the experimental group. Due to school, sporting and social commitments only three control group participants completed session 1, two completed sessions 2, 3 and 4, with one participant completing all 6 sessions. Despite small group size, sessions were constructive and individual attention was provided, with positive results achieved by the participants who completed sessions.

4.3.1.2. Community workshop intervention

With the added motivation of promoting community health and well-being, the PST program was run as a workshop for general public participants (including dancers, athletes and gym members) at a health and fitness seminar in Empangeni. At the onset of the workshop, the PST program was introduced to the workshop participants, with written consent and biographical information acquired from five adult participants, 3 female and 2 males. The psychological skills outcome evaluation preceded and succeeded the PST program (Appendix D) and participants were provided with educational handouts (Appendices O, Q, S, U, W and Z). A shortened six topic PST program was conducted over an hour and a half period. Theoretical conceptions were explained using diagrams, with the PST techniques outlined then practiced. Participants encouraged each other and established a support group environment, where diverse ideas were shared in relation to various sport settings.

4.3.2. Case studies

Case studies were utilized to collect in-depth individual information from the adult elite participants about the PST program and from the experts about the conceptual relationship between psychological skills and psychological well-being.

4.3.2.1. Adult elite sportspersons

A KwaZulu-Natal and South African male cricket player and female swimmer, who were both 27-years-old, were asked to participate in the study. For qualitative research purposes these participants were chosen on the basis of their established relationship with the researcher, experience in youth sport, sport psychology understanding, insight into and willingness to discuss their psychological skills training experiences.

Participant information letters (Appendix A) were provided and written consent (Appendix B) was acquired. All six psychological skills were covered in the same format as the school intervention. The PST program was however conducted individually over three weekends with biographical information (Appendix C), pre-testing (quantitative and qualitative outcome measures, appendices D, E and F), session 1 and 2 conduced together on the first weekend, session 3 and 4 undertaken together on the second weekend, and session 5, 6, post-testing (quantitative and qualitative outcome measures (appendices D, E, F, G, AA) and evaluation of the PST program (Appendix CC) conducted on the third weekend. Educational handouts were provided at each session (Appendices O, Q, S, U, W, and Z). Due to their sport and exercise experience, in-depth discussions and valuable knowledge sharing occurred.

Participants expressed their enjoyment in the program. They completed follow-up testing 2 months after their post-test.

4.3.2.2. Sport psychology experts

Sport psychology experts have extensive knowledge in their area of expertise and are able to provide in-depth understanding and explication of the relationship between concepts. It is for these reasons that 5 experts, 1 female and 4 males, comprised of local and international sport psychologists, were asked to comment on the relationship between psychological skills and psychological well-being. All experts were known to the researcher, had extensive qualifications, expertise, research and practical experience in the area of sport psychology. It was explained that the information would be kept confidential. Information was collected via confidential email format.

4.4. Measuring instruments

4.4.1. Quantitative outcome measures

4.4.1.1. Ryff's psychological well-being scale (Appendix D)

Ryff's (1989b) standardized psychological well-being scale was used as an outcome measure to assess the school group intervention (at T1, T2 and T3) and elite adult participants (at pre-, post and follow-up test) on the six dimensions of psychological well-being: autonomy, personal growth, environmental mastery, purpose in life, positive relations with others and self-acceptance. The scale was initially constructed

as a twenty item questionnaire and has been standardised in 3, 9 and 14-item forms. The 3-item version was used in this research. Previous research in the United States of America (USA), using telephone interviews on a nationwide representative adult sample over twenty-five years of age, indicated high levels of internal consistency on the six subscales as follows: autonomy .83, personal growth .85, environmental mastery .86, purpose in life .88, positive relations with others .88 and self-acceptance .91. They have high levels of correlation with the 20-item parent scale: autonomy .97, personal growth .97, environmental mastery .98, purpose in life .98, positive relations with others .98 and self-acceptance .99 (Ryff & Keyes, 1995). During initial assessment construction, the Cronbach alpha coefficients of 117 participants for the twenty item scale were high: autonomy .88, personal growth .81, environmental mastery .81, purpose in life .82, positive relations with others .83 and self-acceptance .85 (Ryff, 1989b).

Previous studies using Ryff's psychological well-being scale have been conducted in South Africa (Bydawell, 2006; Danariah, 2007; Davidson, 2007; Edwards, 2004; Edwards et al., 2004; Edwards, Ngcobo & Pillay, 2004; Edwards et al., 2005; Mbutho, 2005).

4.4.1.2. Bull's mental skills questionnaire (Appendix E)

The most comprehensive available assessment of psychological skills is Bull's (1986) mental skills questionnaire, which was used as an outcome measure to assess the school group intervention (at T1, T2 and T3), elite adult (at pre-, post- and follow-up test) and community workshop intervention participants (before and after the

workshop) on psychological skills. The questionnaire measures: imagery, mental preparation (goal setting), self-confidence, anxiety and worry management, concentration, relaxation and motivation (Bull et al., 1996; Snauwaert, 2001). The questionnaire has 28 items and assessed participants along a six point Likert scale, ranging from strongly agree to strongly disagree. The scale has been translated into Dutch, where it was assessed with 219 athletes and shown to have generally high Cronbach alpha levels of .80, .64, .62, .61, .59, .72 and .72 for the six subscales (Snauwaert, 2001). Bull's scale has been utilized in South Africa (Danariah, 2007).

4.4.1.3. Time measurement (Appendix H)

The school group intervention participants' speed in seconds, over their track distance (100 metres), was measured at T1, T2 and T3.

4.4.2. Qualitative outcome measures

Each school group intervention (at T1, T2 and T3) and elite adult participant (at pre-, post and follow-up test) described their understanding of psychological well-being (Appendix F) and psychological skills training (Appendix G).

The school group intervention (at T2) and elite adult sportspeople (at post-test) described their experience of autonomy, personal growth, environmental mastery, purpose in life, positive relations with others and self-acceptance (Appendix AA), since T1 (in the case of the school participants) or pre-test (for the cricket player and swimmer).

After the PST program the school group experimental participants were asked to describe their experience of the group (Appendix BB).

After the intervention the school group intervention and adult elite sportspeople were asked to assess the PST program by completing the following questions (Appendix CC),

1. How did you experience the program?
2. What did you appreciate about the program?
3. How do you think the program can be improved?

4.4.3. Quantitative process measures

4.4.3.1. Relaxation measures (Appendix M)

The ability to use relaxation before and after session 1 was assessed using the relaxation measures of heart rate and number of breaths per minute.

4.4.3.2. Competitive State Anxiety Inventory-2 (CSAI-2) (Appendix G)

One of the best available assessments of arousal, anxiety and self-confidence is the Competitive State Anxiety Inventory-2 (CSAI-2), which was constructed by Martens et al. (1990). This inventory was used as a process measure to assess physiological, cognitive arousal and self-confidence. The CSAI-2 is a twenty-seven-item questionnaire, which assessed participants along a five point Likert scale, ranging from ‘not at all’ to ‘very much so’. It has three subscales: cognitive anxiety, somatic

anxiety and self-confidence. The reliability of the three subscales is high ranging between .79 and .90. High Cronbach alphas of between .79 to .83 for cognitive anxiety, .82 to .83 for somatic anxiety and .87 to .90 for self-confidence were found during assessment construction (Martens et al., 1990). The somatic anxiety subscale (Appendix N) was used to assess physiological arousal skill before and after session 1, the cognitive anxiety subscale (Appendix P) was used to assess cognitive arousal skill before and after session 2, and the self-confidence subscale (Appendix V) was used to assess self-confidence skill before and after session 5. The CSAI-2 has been utilized in South Africa (Andrew, Grobbelaar & Potgieter, 2007).

4.4.3.3. Sports imagery questionnaire (SIQ) (Appendix R)

Hall, Mack, Paivio and Hausenblas's (1998) sports imagery questionnaire was used as a process measure to assess mental imagery ability before and after session 3. It has thirty items with five subscales, which are motivational specific, motivational general-mastery, motivational general-arousal, cognitive specific and cognitive general. Each question is rated along a seven point Likert scale ranging from rarely to often. Initial assessment during questionnaire construction revealed high Cronbach alpha levels for the five subscales of .88, .83, .70, .85 and .75 respectively (Hall et al., 1998). The SIQ has been used in South Africa (Basson, 2004).

4.4.3.4. Concentration grid (Appendix T)

A concentration grid was used as a process measure to assess attention and concentration ability before and after session 4. The block grid design contains digits

ranging from 1 to 99, which have been scrambled in the grid. The participants' time to acquire numbers 0 to 49 (pre-session) and 50-99 (post-session) was measured. Concentration grids have been used at length in Eastern Europe (Weinberg & Gould, 2007). Concentration grids are currently being utilized in South Africa (Edwards & Edwards, 2007a).

4.4.3.5. Perception of success questionnaire (POSQ) (Appendix X)

Roberts, Treasure and Balague's (1998) POSQ (adult version) was used as a process measure to assess motivation and goal setting ability before and after session 6. The scale assesses both ego and task orientation. It is a twelve-item questionnaire with 6 ego and 6 task questions (Moran, 2004), which assesses participants along a five point Likert scale ranging from strongly agree to strongly disagree. The scale has high internal reliability for the orientations, with high alpha coefficients of .98 for task orientation and .97 for ego orientation, and inter-orientation correlation of .08 (Roberts et al., 1998). Adaptations of the ego and task orientation scale questions are currently being used in South Africa (B.J.M. Steyn, personal communication, 22 August 2007).

4.4.3.6. Self-theory questionnaire (Appendix K)

Dweck's 3 and 8-item self-theory questionnaires assess entity and incremental theory, along a six point Likert scale ranging from strongly agree to strongly disagree (Dweck, 1999). Two separate validation studies on the 3- and 8-item questionnaires revealed correlational coefficient values ranging between .83 and .92 (Levy,

Stroessner & Dweck, 1998). The research of Biddle, Wang, Chatzisaray and Spray (2003) on 352 participants revealed high Cronbach alphas of .74 for entity and .80 incremental theory questions. This 3-item applied sport setting scale was used to assess motivational aspects of entity and incremental theory before and after session 6. An extensive literature search by the researcher, revealed no published literature on the use of Dweck's 3 and 8-item self-theory questionnaires in South Africa.

4.4.4. Qualitative process measures

At T1 the school group intervention participants were given a diary and asked to keep a detailed record of their training, learning experiences and emotions per week over the season between T1 and T3 (Appendix I).

Before (Appendix J) and after (Appendix K) each session the school group intervention and elite adult participants were asked to complete what the psychological skill (depending on the session either physical arousal, cognitive arousal, mental imagery, attention, concentrations, self-confidence, motivation and goal setting) meant to them.

After each session the school group intervention and elite adult sportspeople were asked to describe their experience of the session (Appendix L),

4.4.5. Qualitative sport psychology expert question (Appendix DD)

Sport psychology experts were asked to provide their view on the relationship

between psychological skills and psychological well-being.

4.5. Data analysis techniques

Quantitative and qualitative data analysis techniques were used to elicit the most comprehensive results.

4.5.1. Quantitative technique

If parametric testing is used when sample is small, not homogenous and normally distributed then the probability of a Type 1 error is larger than the alpha level used (Heiman, 1996). Non-paramedic testing can yield valuable results for small sample studies. Owing to its sample size it could not be assumed that the sample was normally distributed or representative of the population, therefore non-parametric testing was chosen. Pearson correlations, Mann-Witney (non-parametric equivalent of t-test for two independent samples) and Wicoxon Signed Ranks Tests (non-parametric equivalent of t-test for dependent samples) were used to analyze the school group and community workshop intervention data. All quantitative data was analyzed using the SPSS version 15 statistical data analysis package.

4.5.2. Qualitative technique

Qualitative data analysis involves firstly condensing, then highlighting and expanding qualitative information. The qualitative data from the school group and community workshop intervention, elite adult sportspeople and sport psychology experts' case

studies, were coded and analyzed using content analysis. This refers to a method of studying and analyzing the meanings of communications in a systematic objective way. The major communication units in this research were meanings expressed in recorded words obtained. Content analysis can use counting (frequencies) to understand how frequently responses or pieces of information occur (Kerlinger, 1978; Lewin, 1979). In this research a frequency of one indicated that the theme occurred once, a frequency of two twice etc. Furthermore, the researcher's observations and objective experience of the PST program are outlined in the data results.

4.6. Ethics

Ethical clearance was acquired from the University of Pretoria campus. Detailed participant information was provided to all participants, as well their parents when relevant. Informed consent/assent was acquired from each participant/parent. The intervention was fully explained to all participants who were free to withdraw from the study at any time. The questionnaires and data are securely kept. No names were divulged and each participant's data was coded. Quantitative results were presented only in group format. All information was kept and presented in a confidential manner.

4.7. Résumé

This methodology chapter was concerned with the development, implementation and evaluation procedure for the PST program, design, measuring instruments, data

analysis techniques and ethics of the research. The next chapter will cover the results of the study.

CHAPTER FIVE

RESULTS

5.1. Introduction

This chapter provides the results of the research. It is divided into intervention and case study sections.

In the following tables Bull's mental skills questionnaire subscales are coded as follows: imagery ability (ia), mental preparation (mp), self-confidence (sc), anxiety and worry management (awm), concentration ability (ca), relaxation ability (ra) and motivation (m). Ryff's psychological well-being subscales are coded as: autonomy (au), personal growth (pg), environmental mastery (em), purpose in life (pl), positive relations with others (pr) and self-acceptance (sa).

The process quantitative measures are coded in the following manner: physiological arousal measure of heart rate (pha1), breaths per minute (pha2), CSAI-2 somatic anxiety subscale (pha3), CSAI-2 cognitive anxiety subscale (ca), SIQ (im), attention and concentration grid (ac), CSAI-2 self-confidence subscale (sc), POSQ (gm1) and Self-theory Questionnaire (gm2). A decrease in pha1, pha2 and ac results in a positive improvement.

School group intervention pre-test is marked as T1, post-test as T2 and follow-up as T3. The number 1 or 2 behind the psychological well-being and mental skills

questionnaire subscale codes refers to pre-test T1 (if there is a 1 behind it) or post-test T2 (if there is a 2 behind it).

Frequency (Freq) indicates the number of times responses were recorded. The single asterisk (*) indicates significant findings at the five percent level of significance. Double asterisks (**) indicate significant findings at the one percent level.

For audit trail purposes, full transcriptions for all data appearing in abbreviated form in tables can be found in the appendix.

5.2. Interventions

5.2.1. School group intervention

Table 1. Psychological skills means and standard deviations (comparative data) - Mann-Witney Test for experimental and control group (*N=12*)

Component	**ia1**		**mp1**		**sc1**		**awm1**		**ca1**		**ra1**		**m1**		**msqtotal1**	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Experimental	19.13	2.95	15.00	2.27	19.25	2.66	16.75	4.20	19.63	4.81	19.13	3.40	19.63	2.67	128.50	14.82
Control	15.75	4.99	17.75	6.24	18.75	2.06	17.50	1.29	19.25	2.63	14.25	4.65	16.75	4.57	120.00	18.38
Component	**ia2**		**mp2**		**sc2**		**awm2**		**ca2**		**ra2**		**m2**		**msqtotal2**	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Experimental	19.37	2.20	16.88	3.00	17.50	3.25	15.13	4.73	19.50	3.42	17.75	2.87	20.00	3.02	126.13	16.37
Control	16.50	6.61	12.50	5.45	15.00	4.00	16.00	3.37	18.75	2.87	13.25	7.76	14.00	5.83	106.00	16.08

* p<.05, ** p<.01

Table 1 refers to means and standard deviations of the 8 experimental and 4 control group participants. Results compare pre- (T1) and post-test (T2) assessment data.

The Mann-Witney Test indicated no asymptotic significant differences between experimental and control groups on imagery ability (p = 0.732), mental preparation (p = 0.147), self-confidence (p = 0.300), anxiety and worry management (p = 0.668), concentration ability (p = 0.665), relaxation ability (p = 0.197), motivation (p = 0.058) and overall mental skills (p = 0.174). The experimental group experienced a slight decrease in overall mental skills, compared to the control group who displayed a relatively larger decrease at pre-test (T1). The unexpected decrease in both groups could reflect over-inflated perceptions on initial testing.

Table 2. Psychological skills training meaning evaluation of experimental group (*N=9*)

Component	Component T1	Freq	Component T2	Freq
Psychological skills training	➢ Improves performance ➢ Mental training for competition ➢ Improves self-confidence ➢ Increases self-esteem ➢ Trains cognitions/emotions ➢ Improves psychological skills ➢ Improves daily activities	**3** **3** **2** **1** **1** **1** **1**	➢ Development of mental skills ➢ Effective performance ➢ Improves daily life ➢ Self-control ➢ Self-confidence ➢ Motivation ➢ Setting achievable goals ➢ Interaction with others ➢ Correct mindset ➢ Mental and physical abilities ➢ Personal growth ➢ Psychologically stability ➢ Enhanced physical performance	**3** **2** **2** **1** **1** **1** **1** **1** **1** **1** **1** **1** **1**

Table 2 refers to the meaning of PST for the experimental group at pre- (T1) and post-testing (T2). At pre-test, meaning included the training of sport psychological and daily skills. At post-test, meaning incorporated training psychological skills, was life

skill orientated, concerned with interpersonal relationship, and demonstrated a holistic biopsychosocial approach.

Table 3. Psychological skills training meaning evaluation of the control group (*N=6*)

Component	Component T1	Freq	Component T2	Freq
Psychological skills training	➢ Trains cognitions ➢ Improves skills ➢ Understanding of physical and mental skills ➢ Mind/body dualism ➢ Mental stability ➢ Coping with pressure ➢ Mental goals	**1** **1** **1** **1** **1** **1** **1**	➢ Application of skills ➢ Challenging yourself ➢ Learning psychological skills ➢ Being determined ➢ Reaching goals	**2** **2** **1** **1** **1**

Table 3 refers to the meaning of PST for the control group at pre- (T1) and post-testing (T2). At pre-test, meaning was centred on training physical and mental skills. At post-test, meaning was concerned with training psychological skills, challenging oneself and achieving goals. While a change in meaning occurred, a holistic shift was not apparent in the control group post-testing.

Table 4. Psychological skill process measurements means and standard deviations – Wilcoxon Signed Ranks Test for experimental group (*N=8*)

Experi-mental group	**pha1**		**pha2**		**pha3**		**ca**		**im**		**ac**		**sc**		**gm1**		**gm2**	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Before session	69.63	17.99	18.50	6.14	28.63	5.10	23.38	4.98	154.75	16.85	486.38	125.91	26.13	3.87	41.75	7.94	31.50	2.88
After session	63.25	21.95	11.38*	3.93	33.88*	2.47	31.50*	4.28	166.13*	20.00	395.88	64.34	30.38**	3.25	42.50	8.28	31.38	3.34

* p<.05, ** p<.01

Table 4 refers to the means and standard deviations of the 8 experimental group participants before and after session psychological skill process assessments. The Wilcoxon Signed Ranks Test indicated significance at the 1% alpha level for breaths

per minute (pha2) (p = 0.012), somatic anxiety (pha3) (p = 0.018), cognitive anxiety (ca) (p = 0.012), imagery (im) (p = 0.036) and significance at the 5% alpha level for self-confidence (sc) (p = 0.011). There was no significance on the physiological arousal measure of heart rate (pha1) (p = 0.236), attention and concentration (ac) (p = 0.263), perception of success (gm1) (p = 0.581) and self-theory (gm2) (p = 0.655).

Table 5. Before and after session evaluation of meaning of psychological skills - experimental group (*N=9*)

Component	Component Pre-session	Freq	Component Post-session	Freq
Physiological arousal	➢ Arousal and changes in heart rate	**2**	➢ Optimum middle arousal level	**5**
	➢ How body relates to different emotions	**1**	➢ Finding optimum arousal level for best performance	**4**
	➢ Correct mindset for peak performance	**1**	➢ Controlling physiology	**2**
			➢ Effect on heart rate	**2**
	➢ Don't know	**1**	➢ Low and high arousal	**2**
	➢ Sparking up emotions	**1**	➢ Physiology changing when tense	**1**
	➢ Being awake and alive	**1**		
	➢ Changing relaxed state	**1**	➢ Learning techniques for relaxation	**1**
			➢ Controlling breathing	**1**
			➢ Enhancing emotional self and mindset	**1**
			➢ Psychological or physical change in emotion	**1**
			➢ Functioning of hormones during anxiety or excitement	**1**
			➢ State of being	**1**
Cognitive arousal	➢ I don't know/confused	**3**	➢ Positive state of mind	**6**
	➢ Motivated	**1**	➢ Relaxed	**1**
	➢ Anxiety level before/ during competition	**1**	➢ No self-doubt	**1**
			➢ Cognitive anxiety level	**1**
	➢ State of mind	**1**	➢ Pattern of thinking	**1**
	➢ Correct arousal level	**1**	➢ Motivation	**1**
	➢ Self-belief	**1**	➢ Replacing negative thoughts with positive thoughts	**1**
	➢ Emotional state	**1**		
			➢ Arousal before/during practice/competition	**1**
Mental imagery	➢ Mental pictures	**3**	➢ Internal/external imagery	**5**
	➢ Creating image before competition about performance	**3**	➢ The way you see yourself perform	**4**
	➢ Thinking before a game		➢ Relaxation when using imagery for performance	**1**
	➢ Mental imagery for physical action	**1**		
		1	➢ Picturing my strategy mentally/physically	**1**
	➢ Imagine participating, thoughts/feelings before/during a game	**1**	➢ Mental imagery detail	**1**
			➢ Imagining emotional and	**1**

			physical state before/ during a game ➢ Finding/rectifying mistakes mentally ➢ Gaining performance knowledge	 **1** **1**
Attention and concentration	➢ Attention-being fully aware. Concentration- focusing on a task ➢ Attention/concentration-focusing on task until correct ➢ Attention- focusing one object. Concentration-focusing for period of time ➢ Directly liked. Attention- listen/ /remember things. Concentration- how long you can sustain attention before being distracted ➢ Attention-full concentration. Concentration- full attention. ➢ Attention- attention captured. Concentration- focus on one thing	**2** **1** **1** **1** **1** **1**	➢ Attention-focusing on object for a short period. Concentration- focusing on object for long period ➢ Attention-track/focusing on object. Concentration- focusing on task, while being aware of surrounding, not getting distracted ➢ Attention-on several things. Concentration-focusing one point ➢ Attention- focusing on one-thing. Concentration- having full attention on the task at hand	**3** **2** **1** **1**
Self-confidence	➢ Being sure of yourself/abilities ➢ Being confident, starting a goal, feeling positive ➢ Being comfortable, positive about yourself, capabilities and performance ➢ Confidence in yourself ➢ Feeling positive about your performance	**4** **1** **1** **1** **1**	➢ Self-belief/realizing your potential ➢ Moderate self-confidence ➢ Changing negative thoughts to positive thoughts ➢ Self-belief/being humble ➢ Self	**3** **3** **1** **1** **1**
Goal setting and motivation	➢ Self-motivated to achieve ➢ Goal setting- setting realistic and attainable, short and long-term performance goals. Motivation-the driving force behind performance ➢ Goal setting-setting logical time orientated goals. Motivation-encouragement ➢ Goal setting- setting and achieving goals. Motivation-positiveness that spurs you on ➢ Goal setting- Setting long or short term goals. Motivation-psyching yourself up ➢ Getting psyched about something. Having long, short realistic goals ➢ Goal setting-setting a goal you want to achieve. Motivation-getting psyched	**1** **1** **1** **1** **1** **1** **1**	➢ Motivation and goal setting-influenced by personality traits, setting long/ short term goals for achievement ➢ Goal setting-attainable goals. To obtain goals for motivation/ driving force ➢ Goals achievable, time oriented, rewarded. Motivation influenced by personality, external and internal motivation ➢ Goal setting– Setting long or short-term goals. Motivation – getting psyched up ➢ Being positive, setting goals for motivation ➢ Goal setting-setting goal/level wanting to achieve. Motivation-psyching yourself up	**1** **1** **1** **1** **1** **1**

Table 5 refers to the 9 experimental group participants' psychological skill before and after session evaluation. Before the physiological arousal session the meaning of arousal focused on a physiological/emotional state. After the session it was concerned with the arousal continuum, optimal arousal for performance, as well as personal experience of arousal and performance. At the start of the cognitive arousal session it was somewhat uncertain and was centred on emotions. At the end it was concerned with creating a positive mindset. Prior to the mental imagery session, meaning was centred on creating mental pictures in order to improve performance. At the end of the session it included the importance of imagery detail, internal and external imagery, as well as finding and rectifying sporting mistakes. Before the attention and concentration session it summarized the conceptual idea of attention as focus and concentration as maintaining focus. After the session more participants understood this conceptual idea and were aware of distractible factors. At the start of the self-confidence session meaning was centred on self-belief. At the end of the session it was broader, with participants understanding how optimal self-confidence produces desired performance. Prior to the goal setting and motivation session, the meaning of goal setting and motivation was experienced broadly. After the end of the session it included the importance of motivation in goal setting, as well as the utilization of both intrinsic and extrinsic factors.

Table 6. Athletic performance times and standard deviations (comparative data) - Mann-Witney Test for experimental and control group (*N=4*)

	T1		T2	
Group	**Mean**	**SD**	**Mean**	**SD**
Experimental	17.15	1.56	16.98	0.11
Control	17.16	3.54	17.50	1.64

* p<.05, ** p<.01

Table 6 refers to the means and standard deviations of the 2 experimental and 2 control group participants who completed pre- and post-test time measurements. The Mann-Witney Test indicated no asymptotic significant differences between experimental and control groups on time (p = 1.000). While sample size is small, the experimental groups' time decreased, compared to the control groups' time which increased. Qualitative feedback suggested the PST program improved participants' athletic ability and assisted them with other sport and exercise activities.

Table 7. Psychological well-being means and standard deviations (comparative data) – Mann-Witney Test for experimental and control group (*N=13*)

Component	**au1**		**pg1**		**em1**		**pl1**		**pr1**		**sa1**		**total1**	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Experimental	13.38	3.11	15.13	2.47	12.25	1.83	14.13	1.13	16.13	1.46	15.50	2.33	86.50	5.32
Control	13.20	2.59	14.20	5.93	13.40	2.70	13.60	4.16	15.40	1.82	14.40	2.19	84.20	16.47
Component	**au2**		**pg2**		**em2**		**pl2**		**pr2**		**sa2**		**total2**	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Experimental	13.75	2.38	15.00	4.04	13.13	1.46	13.75	3.37	15.38	1.60	15.38	1.30	87.63	6.19
Control	11.60	2.30	11.20	4.09	10.80	4.97	14.20	0.84	14.20	2.17	16.00	1.87	82.00	10.70

* p<.05, ** p<.01

Table 7 refers to the means and standard deviations of the 8 experimental and 5 control group participants. Results compare pre- (T1) and post-test (T2) assessment data. The Mann-Witney Test indicated no significant differences between experimental and control groups on autonomy (p = 0.208), personal growth (p = 0.086), environmental mastery (p = 0.602), purpose in life (p = 0.706), positive relations with others (p = 0.155), self-acceptance (p = 0.708) and total psychological well-being (p = 0.239). The experimental group experienced an increase in total psychological well-being compared to the control group who experienced a decrease.

Table 8. Psychological well-being meaning evaluation of experimental group (*N=9*)

Component	Component T1	Freq	Component T2	Freq	Component T3	Freq
Psychological well-being	➢ Stability ➢ Positive mindset ➢ Motivation ➢ Mental health ➢ Aware/proud of one's skills ➢ Performing optimally ➢ Coping with stress	**2** **2** **1** **1** **1** **1** **1**	➢ Mental health ➢ Positive approach ➢ Psychological skills ➢ Mentally prepared ➢ Motivation ➢ Experiences ➢ Understanding oneself ➢ Optimal performance ➢ Psychological stability	**3** **3** **3** **3** **1** **1** **1** **1** **1**	➢ Positive mindset ➢ Motivation ➢ Self-esteem ➢ Controlling one's state of mind ➢ The mind controlling performance ➢ Inner peace ➢ Psychological balance	**4** **1** **1** **1** **1** **1** **1**

Table 8 refers to the meaning of psychological well-being for the experimental group at pre- (T1), post- (T2) and follow-up testing (T3). At pre-test, meaning included stability and having a positive mindset. At post-test, meaning indicated growth, incorporating various mental health and psychological skill aspects as well as having a positive approach. The follow-up test was consistent with T2, providing evidence that perceptions of well-being development were being maintained.

Table 9. Psychological well-being meaning evaluation of control group (*N=6*)

Component	Component T1	Freq	Component T2	Freq
Psychological well-being	➢ Body/mind correction ➢ Controlling physiology ➢ Mental stability ➢ Positive mindset	**1** **1** **1** **1**	➢ Confidence ➢ I don't know ➢ Dedicated/hard working ➢ Mental health	**2** **1** **1** **1**

Table 9 refers to the meaning of psychological well-being to the control group at pre- (T1) and post-testing (T2). Meaning appeared mind/body orientated at the pre-test. While post-test responses included the aspect of mental health, there was uncertainty and no overall shift.

Table 10. Correlational matrix of psychological well-being and mental skills questionnaire subscales - Pearson's correlation for experimental and control group (*N=13*)

	au	pg	em	pl	pr	sa	ia	mp	sc	awm	ca	ra	m
au													
pg	.377												
em	.203	.415											
pl	.644*	.620*	.355										
pr	-.109	.328	.169	.307									
sa	.088	.447	.255	.332	.198								
ia	.239	.630*	-.184	.457	-.031	.053							
mp	.512	.541	.489	.635*	.032	.181	.395						
sc	-.060	-.007	.205	.052	.275	.075	-.292	.100					
awm	-.204	.185	.513	-.001	.403	-.019	-.315	-.168	.380				
ca	-.022	.055	.048	-.303	.047	.122	-.101	.018	.549	.237			
ra	.300	.291	.169	.435	.447	.009	.060	.070	.614*	.514	.236		
m	.432	.533	.294	.554*	.299	.299	.372	.466	.660*	.272	.413	.821**	

* p<.05, ** p<.01

Table 10 refers to the correlation between the psychological well-being and mental skills questionnaire subscales. The data was collected at the pre-test (T1) assessment of the 8 experimental and 5 control group participants. Significant correlation at 1% level of significance was found between motivation and relaxation ability (0.82). There were significant correlations at the 5% alpha level between autonomy and purpose in life (0.64), personal growth and purpose in life (0.62), personal growth and imagery ability (0.63), purpose in life and mental preparation (0.64), purpose in life and motivation (0.56), self-confidence and relaxation ability (0.61), as well as self-confidence and motivation (0.66).

Table 11. Psychological well-being component evaluation - comparative data of experimental and control group (*N=12*)

Component	Experimental group	Freq	Control group	Freq
Autonomy	➢ Independent ➢ Confident ➢ Self-reliant ➢ Self-controlled ➢ Visualizing ➢ Self-fulfilled ➢ Motivated	**2** **2** **2** **2** **1** **1** **1**	➢ I haven't ➢ I don't know	**3** **1**
Personal growth	➢ Grown as a person ➢ Enlightened ➢ Improved my skills ➢ Been positive ➢ Better mentally prepared ➢ More knowledgeable ➢ Improved my sport ➢ Controlled arousal ➢ Increased self-confidence ➢ Controlled mental imagery	**2** **2** **2** **1** **1** **1** **1** **1** **1** **1**	➢ Goal determined ➢ Achievement ➢ I don't know ➢ Wanting to be fitter	**2** **1** **1** **1**
Environmental mastery	➢ Less distractible ➢ In control of my environment ➢ Can control feelings ➢ Awareness of surroundings ➢ Using imagery ➢ Meditation ➢ Involved with my environment	**3** **2** **1** **1** **1** **1** **1**	➢ Mastered my environment relatively well ➢ Tried harder to fit into the environment. ➢ Trying to take control of situations ➢ I don't know ➢ Hasn't affected me yet	**1** **1** **1** **1** **1**
Purpose in life	➢ I have a purpose and goals ➢ Do well in sport and academics ➢ Focus better on my life ➢ Set realistic, attainable goals ➢ To serve God by using my skills ➢ Self-value ➢ Good in my relationships ➢ Succeed/staying motivated ➢ Has improved/grown more positive	**2** **1** **1** **1** **1** **1** **1** **1** **1**	➢ To do my best ➢ I don't know ➢ Finish school/study/succeed ➢ Have confidence	**2** **1** **1** **1**
Positive relations with others	➢ Have had close relationships ➢ Developed more relationships ➢ More confident in interactions ➢ Helping others with PST ➢ More relaxed ➢ Creating positiveness in myself and others ➢ Friendlier ➢ Its still the same ➢ Relate better to others ➢ Understand/helping others	**3** **2** **2** **2** **2** **1** **1** **1** **1** **1**	➢ Interacted relatively well with others ➢ More relaxed ➢ People say more positive things about me and are friendlier ➢ I liked being with people ➢ Being competitive has made me want to improve on personal aspects	**1** **1** **1** **1**

Self-acceptance	➢ Improved self-acceptance ➢ Proud of myself ➢ I can motivate and relax myself ➢ I am still the same ➢ Believe that I can perform well ➢ Must have right mindset ➢ Feels good ➢ Win/achieve, as long as I do my best	**3** **1** **1** **1** **1** **1** **1** **1**	➢ I have started to accept myself and my goals ➢ More accepting of myself ➢ I accept I can be good if my confidence improves ➢ I do accept myself	**1** **1** **1** **1**

Table 11 refers to the experimental and control groups' experience of the psychological well-being components change from pre- (T1) to post-testing (T2). The table provides evidence of growth on psychological well-being aspects as well as positive relationships between psychological skills and well-being components. On all the components the experimental group experienced more holistic change with the control groups' change less definitive. Concerning autonomy, the experimental group reported a greater sense of self-belief, were motivated and using mental imagery at post-testing (T2). On personal growth, the experimental group reported overall development with improved insight and psychological skills such as physiological and cognitive arousal, self-confidence and mental imagery. For environmental mastery, the experimental group experienced enhanced environmental awareness and control through PST techniques including physiological and cognitive arousal, attention and concentration as well as mental imagery. Concerning purpose in life, the experimental group had experienced clear direction and had set personal goals, used attention and concentration, were confident and motivated. For positive relations with others, the experimental groups' experience ranged from being unchanged to having a deeper understanding of other peoples' emotions, being confident, motivated, focused, with an understanding of physiological arousal. On self-acceptance, the experimental groups' experience ranged from being unchanged to feeling proud, having a healthy

sense of self-acceptance, feeling confident, motivated and focused on physiological and cognitive arousal.

Table 12. Evaluation of experiences of each psychological skills training session – experimental group evaluation (*N=9*)

Component	Response	Freq
Physiological arousal	➢ Relaxing, I feel calm	**3**
	➢ Good, learnt the concept of arousal and how to relax	**2**
	➢ Very relaxing and tension was removed	**1**
	➢ I reflected on my breathing and I now have improved control	**1**
	➢ Successful, I learnt breathing techniques to improve performance	**1**
	➢ Learned a lot about correct level of arousal for peak performance	**1**
	➢ Insightful	**1**
	➢ Informative and interesting	**1**
Cognitive arousal	➢ Improved my self-confidence and belief	**2**
	➢ Positive thoughts were empowering	**2**
	➢ I felt in control during the thought stopping	**1**
	➢ Educational on negative/positive thoughts and performance	**1**
	➢ Good, educational. Learnt about having a positive mindset, about optimal arousal and motivation	**1**
	➢ Changing negative thoughts to positive made me feel happy	**1**
	➢ Feel focused and relaxed	**1**
Mental imagery	➢ Calming, relaxing, educational	**1**
	➢ Enjoyable, focused on my competition, imaged victory	**1**
	➢ Very interesting in incorporating breathing, vividness of images	**1**
	➢ Ok	**1**
	➢ Educational on how to mentally imagine/prepare for events	**1**
	➢ Interesting idea of internal and external imagery	**1**
	➢ Interesting, informative, felt excited after thinking about competing	**1**
	➢ Improved internal and external imagery	**1**
Attention and concentration	➢ Enjoyable	**2**
	➢ Learned link between concentration and arousal	**1**
	➢ Good to focus and be cognitively stimulated	**1**
	➢ Very interesting, motivating, feeling focused	**1**
	➢ Good, bit tired	**1**
	➢ Cognitively stimulating for mediation and concentration	**1**
	➢ Actively involved	**1**
	➢ Enjoyable, but assessment time didn't decrease	**1**
Self-confidence	➢ Understand optimal self-confidence	**3**
	➢ Good, interesting discussion	**2**
	➢ Good	**2**
	➢ Put effort into session	**1**
	➢ Interesting, visualisation was uplifting	**1**
	➢ Important for my self-confidence	**1**
	➢ Relaxing, which I needed	**1**
	➢ Interesting	**1**
	➢ Set myself goals	**1**
Goal setting and motivation	➢ Thought provoking on setting performance goals, it was motivation	**1**
	➢ Interesting, insightful on personality	**1**
	➢ Motivating	**1**
	➢ Fine	**1**

	➢ Interesting, thought provoking ➢ Interesting, improved my understanding of goal setting and motivation ➢ Enjoyed other sessions more ➢ Good, interesting	**1** **1** **1** **1**

Table 12 refers to the 9 experimental group participants' evaluation of the psychological skills training sessions. Session 1 was reportedly interesting, conceptualised physiological arousal, was effective in teaching breathing techniques and relaxed the participants. Session 2 was educational and empowering, utilizing various PST techniques. Session 3 was informative, explained internal and external imagery and the value of vividness in imagery. Session 4 was cognitively stimulating and challenging. Session 5 was reportedly effective in relating optimal self-confidence to desired performance. Session 6 was thought provoking in linking motivation to goal setting.

Table 13. Evaluation of the psychological skills training group as experienced by the experimental group (*N*=9)

Component	Response	Freq
What was your experience of the psychological skills training group?	➢ Enjoyable, interactional ➢ Generated/shared diverse information ➢ Improved my understanding of PST techniques ➢ Improved understanding of peoples emotions ➢ Confirmed own ideas ➢ Individually could also have be beneficial ➢ It improved my mental skills	**5** **5** **3** **2** **1** **1** **1**

Table 13 refer to the 9 experimental group participants' evaluation of the PST group. The participants' main responses to the PST group indicated that the intervention was enjoyable and interactional, with other responses indicating it improved psychological skills and understanding of other peoples' emotions.

Table 14. Experimental groups' evaluation of the PST program as a whole (*N=8*)

Component	Response	Freq
How did you experience the program?	➢ Insightful ➢ Educational/informative ➢ Enjoyable ➢ Extremely interesting ➢ Motivational ➢ Interactional experience ➢ Exciting ➢ Created personal growth ➢ Thought-provoking	**3** **3** **2** **2** **2** **1** **1** **1** **1**
What did you appreciate about the program?	➢ Educational ➢ Enlightening ➢ Appreciated of understandable teaching style ➢ Handouts helped recollection ➢ Full explanations from onset ➢ Appreciative of opportunity to be in program ➢ Improved performance ➢ Will assist sport/life in the future ➢ Personal growth, improved autonomy and self-acceptance	**4** **3** **2** **1** **1** **1** **1** **1** **1**
How do you think the program could be improved?	➢ Nothing ➢ Lengthier sessions ➢ Could be done individually ➢ Smaller groups ➢ Simpler handout ➢ Trained with/in other sports/contexts	**3** **2** **1** **1** **1** **1**

Table 14 refers to the 8 experimental group participants' evaluation of the PST package program. The PST program was found to be an enjoyable, educational experience, which enhanced aspects of life, psychological skills and psychological well-being. Participants appreciated its educational, understandable form and the use of handouts. Responses indicated that sessions should be longer, handouts simpler, individual sessions would be beneficial and the PST program should be applied to other sports in different contexts.

5.2.1.1. Daily training schedules

Daily training schedules were returned by four experimental group members and one control group members. Daily training schedules as well as general participant

discussions revealed that both experimental and control group participants were competing in various other sports on a regular basis, therefore the variable of exercise as such could not have impacted on psychological well-being.

5.2.1.2. Example of one school participant's data profile

As revealed in my daily training schedule, I enjoy a variety of sports at school and in other settings. For me psychological well-being and PST was primarily concerned with performance. My initial idea of arousal centred on my heart rate. Through the PST program I realized arousal exists along a continuum, which was interesting. I learnt to control my breathing and relax more. Through mental imagery I was able to visualize my performance, improving imagery vividness through techniques such as breathing, which I learnt in the first session. I discovered concentration is focusing for a period of time without being distracted by internal or external factors, which was insightful. Self-confidence for me was about finding the right balance and realizing I needed to assess my own arousal levels, in relation to my confidence. Through the PST program I realized goals need to be rewarded, and my motivational levels are affected by an internal and external locus of control. This will be helpful for general life situations. At the end of the program I felt psychological well-being was about knowing and controlling your skills. Psychological skills training was now about harnessing these skills and using them in various situations. I have an improved understanding of my surroundings and realize the goals I would like to achieve. I am now able to control my emotions. I am focused on God and the joy associated with my faith. At the re-test I felt psychological well-being was about controlling my

psyche and PST about training cognitions. The PST program was a worthwhile experience.

5.2.2. Community workshop intervention

Table 15. Psychological skills means and standard deviations – Wilcoxon Signed Ranks Test for community workshop participants (*N=5*)

Component	**ia**		**mp**		**sc**		**awm**		**ca**		**ra**		**m**		**msqtotal**	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Pre-test	21.60	2.51	16.80	6.06	17.80	6.42	15.60	6.73	16.60	7.80	13.60	5.08	18.80	5.36	120.80	29.79
Component	**ia**		**mp**		**sc**		**awm**		**ca**		**ra**		**m**		**msqtotal**	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Post-test	20.20	3.03	19.40	5.08	17.20	6.30	16.80	8.98	18.80	6.26	17.40	5.08	17.80	5.76	127.60*	35.93

* p<.05, ** p<.01

Table 15 refers to the means and standard deviations of the 5 workshop participants who completed the pre- and post-assessment. The Wilcoxon Signed Ranks Test indicated asymptotic significance differences with regard to overall psychological skills (p = 0.042), with no particular significant differences on imagery ability (p = 0.141), mental preparation (p = 0.144), self-confidence (p = 0.715), anxiety and worry management (p = 0.498), concentration ability (p = 0.141), relaxation ability (p = 0.078) and motivation (p = 0.317). While not significant, results indicated an increase in mental preparation, anxiety and worry management, concentration and relaxation ability at post-testing.

5.3. Case studies

5.3.1. Adult elite sportspersons

5.3.1.1. Joey's story

I have played sport since my youth. At the initial pre-test, psychological well-being was about dealing with situations in my life. PST was about training cognitions in order to improve performance. At the first session I felt arousal was about my physical and mental approach. It was pleasing to learn techniques to control my arousal levels. Imagery was about pre-seeing events and situations, thus aiding my sporting preparation. I enjoyed using internal and external imagery perspectives. The attention and concentration session helped me to focus on intricate details. I set healthy goals and I am working on my self-confidence. After the PST program, psychological well-being was about coping with life's pressure and PST about learning techniques for improved performance. I maintained this understanding at the follow-up test. This program was enlightening, and it improved my insight and understanding of others. My goals are more focused. I enjoyed doing the PST program and learning the PST techniques, and feel the program should be used in different exercise and sporting contexts.

5.3.1.2. Sandy's story

I have been competed at an international level for a while. For me at the pre-test psychological well-being was about harmony and PST about using my psyche to

perform optimally. The physiological arousal session was interesting, and I enjoyed the theories and techniques. I focused on positive aspects in the cognitive arousal session and worked through my performances. Mental imagery has always been an interest of mine and it was good to relive the experience. Attention and concentration is important and it is critical to not be distracted. Understanding confidence and its various levels is necessary, and remembering past events and levels of confidence helps me comprehend its necessity. It was good to discuss and clarify sport and life goals. At post-test, psychological well-being was about having a balance and dealing with facets of life. PST was about honing skills and controlling aspects of arousal. I feel that the program assisted my development somewhat. I am happy with my direction in life and level of personal understanding. I have good support structures and I am able to control my environment. My psychological well-being and PST understanding was well maintained at the follow-up test. I enjoyed the PST program. It was good to focus on the skills and feel PST should be done on an on-going basis.

5.3.2. Sport psychology experts

5.3.2.1. Sport psychology expert 1

“I believe that a sport psychologist should be a trained psychologist because psychological skills in sport cannot be separated from everyday life skills. With such an approach it is assumed that psychological skills should contribute to overall psychological well-being.”

5.3.2.2. Sport psychology expert 2

"Sports psychological skills training is generally used as a strategy for enhancing performance, particularly where the performance requires cognitive appraisal and engagement. These skills which include imagery and arousal management and usually are bound to the performance or event. Sometimes more general skills such as goal setting are used that lead up to events and these are more behavioural in orientation.

Definition of well-being - often termed subjective well-being as it is perceptual construct and often associated with life satisfaction (Diener).

My belief is that consideration of the whole athlete is the key to peak performance. Although coaches often aspire to this concept, in practice it is not fully backed up. I have no evidence apart from exchanges with sport psychologists but believe that generally psychological skills are delivered to enhance performance rather than deal with the psychological welfare of the individual. If they improve performance then success breeds confidence and this indirectly could improve well-being. However, understanding self, encouraging self-determination and autonomy, mastery approaches to improvement are critical and at least in the first stages more concerned with the skills of the coach. A good coach will operate a style whereby athletes experience these positive states and eventually will show athletes how to develop themselves in these terms. In that sense they could be regarded as skills but probably more accurately they should be described as self education."

5.3.2.3. Sport psychology expert 3

"I have quite a few ideas around this question of yours and I hope that I do not sound that confused. In sport motivation they refer to the inverted-U theory to show the relationship between arousal and sport performance. If physical activity is thus the psychological skills and the 'performance' the psychological well-being, there is a defined relationship, this means that at a certain point (maximal level) any more exercise will lead to burnout, etc. Psychological skills for the athlete is very necessary if all will lead to a better self-esteem, self-actualization and hence a strong psychological well-being. For this there is definitely a need for well- trained educators/ coaches/sport psychologists to be well trained in these skills to the level they are qualified to administer. Skills such as arousal control (progressive relaxation, systematic desensitisation, hypnosis), anxiety, burnout, staleness, injuries, etc. to name a few. Those athletes who are familiar and treated as such definitely have an advantage over those without the people with that kind of skills."

5.3.2.4. Sport psychology expert 4

"I think that mental skills have an important role to play in psychological well being. Mental skills' training is about teaching a person to have more control over their thoughts and feelings. Many people feel like their lives, thoughts and feelings are totally out of control and they don't know how to change this situation. By teaching people how to control thoughts and behaviours, I think you are enhancing their sense of well being, mastery and self-esteem. You are giving them practical handles on how to go about changing themselves and coping with life problems. Knowing that you

have the inner resources to cope with a situation produces a sense of well being. Mental skills give people access to resources they might not have been aware that they had.

Also there is a lot of research showing that a positive mental attitude can buffer against stress and depression – by teaching people how to control their mental attitude, focus on the right things and cope with anxiety, you are helping them reduce stress and the myriad of problems associated with it. Being able to relax yourself and calm your mind are essential tools to enhance psychological well being."

5.3.2.5. Sport psychology expert 5

"You have asked for my views on the relationship between psychological skills and psychological well-being in the context of psychological skills training with youth athletes.

The question seems to have many aspects to it. I am not sure whether my answer should be mainly experiential or conceptual. However as terms and concepts are formed from experience I will try to include both conceptual and experiential aspects in my answer, beginning conceptually and continuing experientially for the sake of clarity.

It is helpful to keep instructional, knowledge and relevancy key words in mind when analyzing any question. The instructional keywords request an answer that is experiential and descriptive, the knowledge keywords are contained individually and

collectively in such terms as ‘psychological’, ‘well-being’, ‘skills’ ‘training’ and ‘youth athletes’, and the relevancy keywords request an answer on a specific relationship between concepts in a particular referential context.

The question is complicated by the fact that answers are sought to a relationship between different sorts of concepts, which can be subsumed under two second order concepts of ‘psychology’ and ‘athletics’ and will to some extent depend on one’s definition of these terms. By psychology I understand an original study of the all that is connotated by the terms “psyche’ as well as a modern scientific discipline, spawned from philosophy and physiology, with its focus on human behaviour, experience and relationships. ‘Youth athletes’ would presumably be concerned mainly with primary and secondary educational youth sports and exercise, particularly track and field events and therefore more individualistic than team orientated.

By different sorts of concepts I understand psychological skills to refer to naturally occurring behaviours and psychological skills training to refer to a programme or package that is psychologically orientated and concerned with the training of skills such as arousal control, imagery, goal setting, concentration and confidence. Skill acquisition implies some developmental and/or learning process such as riding a bicycle, involving increasing competence in particular behavior becomes usually learned in conscious chunks which become automatic and grooved as skill levels improve. Psychological well-being presumably refers rather to some changing state of positive mental health. So we are concerned with an answer concerning youth athletics involving a relationship between program, process and state variables.

It is helpful to interrogate any question to gain some idea of the assumptions/philosophy/morality/dynamics behind the question. Why is the question asked? Why is this knowledge needed? What are the primary motivations? Are the reasons scientific, conceptual, experiential, practical, personal? Is the main goal to explicate the concepts, improve youth sport in terms of health, performance or both? Are we concerned with scientific, basic, applied, quantitative, and/or qualitative research? What moral values and ethical principles are involved? Assuming inclusive, holistic, scientific, research, health and performance orientated motivations are the focus of the study, is the methodology mainly correlational as implied in the term "relation" or inferential in the concern with the effect of an independent process variable such as skills training on a state such as wellbeing? Have the main concepts been operationally defined as is the usual case in positivistic, quantitatively oriented behavioural research or are they more elastic as required in the flow of qualitative orientated research? To what extent do the concepts overlap? Is well-being a skill? Is imagery a state?

The Yerkes Dodson law and Progogine's transformational theory state that health and performance can increase up to an optimal point following which there will be diminishing returns. Is there an optimal level of psychological skills training in relation to other components, physical, social, spiritual? Where does one draw the line? What sort of boundaries, if any, exist and or need to be postulated between psychological, physical and spiritual skills. Presumably some level of well-being and ability is needed for skills training. How conscious and/or verbal is the process? What about such nonverbal energetic, felt sense, organic factors?

If psychological skills are naturally occurring behaviours such as arousal, concentration and imagination that can be learned, what are the necessary, sufficient, optimal, contextual conditions for learning such skills? The answer also depends on whether we also view well-being as a form of skill.

An inclusive/integral/relational answer is based on the assumption that psychological wellbeing itself is a form of psychological skill that includes such traditional objective dimensions as autonomy and self-acceptance as well as more subtle dimensions as breathing, gesturing, sensing, valuing, ordering, balancing, prioritizing values, etc.

Concerning the assumption that the state of psychological well-being is a dependent variable to be promoted through psychological skills training, from an experiential point of view, I know that the more competitive I become while using various skills the more vulnerable I become to obsessive training, perfectionistic mindsets with the result that well-being tends to diminish, and indeed injury can occur, unless I re-order values, priorities etc. I have observed similar patterns in friends and persons I have coached, so it seems important to train values, life and health skills, as well as performance skills, which include the fun factor. On the other hand, it is an experiential, health orientated, psychological well-being skill to exercise to the point of optimum enjoyment in order to experience energy flow and the afterglow of psychological well-being that runs through the body/mind,/soul/spirit – probably also related to various other psychological dimensions such as runners high, physical dimensions related to neurochemicals like serotonin and endorphins, social dimensions such as team spirit and spiritual dimensions such as the transcendent experience of running to the breath and glory of God. From a more grounded,

phenomenological perspective, whether a top or weekend athlete, the body does not lie and listening to its music is a life priority.

A holistic, balanced approach will also have optimum benefits for people in general, most of whom are not, and do not aspire to be, top athletes, exercise irregularly and live increasingly sedentary lifestyles. The focus is therefore on teaching psychological skills and well-being as life skills to channel human destructiveness into creativity, to develop society and all peoples of planet earth. In this way sport may realize its truest values as well as promote human evolution and spiritual development. One can think of many other aspects of the relationship between psychological skills and psychological well-being, which could be demonstrated further with Ven diagrams, graphs and experiential anecdotes, but this should suffice for my answer at present. I am happy to provide further information if needed."

Table 16. Sport psychology experts' views of the relationship between psychological skills and psychological well-being (*N*=5)

Component	Response	Freq
What is the relationship between psychological skills and psychological well-being?	➢ **Psychological skills are inseparable from daily life skills**	**3**
	➢ **Some psychological well-being components are associated with the coach, such as autonomy through encouragement**	**3**
	➢ **PST provides practical tools for life and well-being**	**2**
	➢ **Psychology training is important when conducting PST**	**1**
	➢ **PST contributes to overall psychological well-being**	**1**
	➢ **PST enhances performance and skills for events**	**1**
	➢ **Psychological well-being associated with satisfaction in life**	**1**
	➢ **Psychological skills generally used for enhancement of performance rather than well-being**	**1**
	➢ **If psychological skills improves performance then it increases e.g. confidence then well-being**	**1**
	➢ **Psychological skills is also about self-education**	**1**
	➢ **Inverted U hypothesis, arousal and performance**	**1**
	➢ **If physical activity is like psychological skills and psychological well-being and as with performance, can lead to burnout**	**1** **1**
	➢ **Improved psychological skills leads to improved self-esteem and psychological well-being**	**1**
	➢ **PST is an advantage**	**1**
	➢ **Psychological skills has an important role to play in psychological well-being**	**1**

	➢ **PST is about teaching a person to have more control over emotions and feelings, improving mastery, well-being and self-esteem**	**1**
	➢ **Provides resources people may not have known had they not received PST**	**1**
	➢ **Buffer for stress and depression**	**1**
	➢ **Relaxation and calmness essential tools for psychological well-being**	**1**
	➢ **Conceptual and experiential aspects**	**1**
	➢ **Under concepts of psychology, athletics and definition**	**1**
	➢ **Psychological skills are psychologically orientated**	**1**
	➢ **Program, process and state variables**	**1**
	➢ **Yerkes Dodson Law-health and performance curve**	**1**
	➢ **Presumably some form of well-being is needed for skills training**	**1**
	➢ **Psychological well-being is a psychological skill**	**1**
	➢ **From experience, when more competitive it leads to decrease in well-being**	**1**
	➢ **Depends on level of competition**	**1**
	➢ **Spiritual development**	**1**

Table 16 refers to the 5 sport psychology experts' tabulated responses to the question "What is the relationship between psychological skills and psychological well-being?" Expert responses suggested that the relationship between psychological skills and psychological well-being is dependent on how the concepts are defined, and in what context, for example psychological well-being may be a psychological skill. Experts stated psychological skills are part of general life skills, trained for specific settings such as sport and exercise, usually associated more with performance outcomes than well-being, with spirituality an important aspect. They envisaged both correlational and causative relationships in both directions. Psychological skills can improve psychological well-being, with psychological well-being required for psychological skills to be effective. Lastly, experts suggested training in psychology is important when conducting PST and that sport coaches have an integral role to play in PST.

5.4. Résumé

This results chapter provided the intervention and case study data results. The next

chapter will integrate the results and present the discussion and conclusion of the study.

CHAPTER SIX

DISCUSSION AND CONCLUSION

6.1. Introduction

This chapter provides the discussion and conclusion for the study, outlines the limitations, describes ongoing research and suggests recommendations for future research.

6.2. Discussion

6.2.1. Psychological skills training program

Significant between group findings were not obtained with regard to experimental and control group measures probably due to small sample size, inadequate randomisation and extraneous variables such as other academic and sporting commitments. However, in general and with special reference to within group measures, the PST program appeared to improve psychological skills at individual, group and community level, confirming previous literature on PST programs and demonstrating the efficacy of this program. The effectiveness of the sessions was generally evident with some level of quantitative and/or qualitative improvement on every one of the school experimental groups' psychological skills. The school group intervention participants appeared to not only learn PST techniques, but also gain broader life skills, in a cascading transfer of training effect, which constitutes an important aspect

of youth PST programs. The program specifically improved some participants' understanding of other peoples' emotions, with objectivity and eagerness to learn observed. The review session was useful in re-discussing the PST techniques and confirming PST as a continuous learning process.

Feedback suggested school experimental group participants generally found the program to be an important component of sports training and an enjoyable, understandable, educational experience. Feedback suggested sessions were interesting, thought provoking, empowering and effective in teaching techniques in an overlapping manner. It was reported that sessions consisted of sufficient conceptual and practical components, which effectively communicated the various training techniques. Elite adult athlete's case studies provided external validation, again confirming that the program was effective and suitably packaged in terms of theory, knowledge and application. Feedback suggested handouts were a useful and valuable part of the PST program.

The research demonstrated the transferability and adaptability of PST programs to different life, health and sporting contexts, for shorter or longer time periods when necessary. This finding was endorsed by participants' recommendation that the program should be implemented in diverse settings with different sports to improve psychological skills, well-being and sporting performance.

It appears the chosen process and outcomes measures were effective in assessing the program in a holistic and specific manner. Although school group intervention time measurements were generally not well attended, the data collected was usable. The

school group intervention daily training schedules were important in examining the link between sport and psychological well-being. Quantitative data analysis was useful in providing a quantified approach and overall understanding, with the qualitative data analysis distinguishing and amplifying participant's understandings and experiences.

Constructive useful feedback from school group intervention participants suggested handouts could have been written in a more simplistic fashion and that the program could have been longer with more individual and group sessions.

6.2.2. Impact of PST program on psychological skills

The outcome quantitative results and qualitative meaning of psychological skills for the experimental group appeared to show more positive change and was more holistic at post-testing, in comparison with the control group. Psychological skills are a holistic concept, with diversified understanding an important aspect of PST (Wann & Church, 1998; Weinberg & Gould, 2007).

The experimental group's before and after quantitative process evaluation, which displayed general and significant improvements; attests to the value of PST programs (MacDougall et al., 2001). The development of each psychological skill was observed throughout the PST program as discussed below.

After the physiological arousal session, meaning was centred on the optimal level of arousal for peak performance and the personal experience of arousal and performance,

as outlined in texts by Hanin (1980, 1986, 1997), Potgieter (1997), Wann and Church (1998). Enjoyment in the use of breathing techniques as well as Jacobson's (1929, 1976) progressive relaxation exercises, culminated in practical awareness and improvement on the quantitative and qualitative measures.

The ability to comprehend, report on past negative thinking, eagerness to rectify negative thinking and create positive thinking, suggested increasing maturity during the cognitive arousal session. Practice in Meichenbaum's (1985) thought stopping and positive self-talk techniques were actualised in the improvement in cognitive arousal skill ability. After the session, focus was placed on creating and maintaining a positive mindset; a key element in cognitive arousal control (Beck, 1976; Feltham, 1999).

Participants' interest in using internal and external imagery combining subjective and objective understandings was noticeable. Comprehension of some essential principles underlying imagery was evident as theory was shifted into holistic practice. Realization of the importance of creating meaningful vivid images outlined by Lang (1977, 1979) and Nideffer (1985) was apparent in the participants' improvement on the imagery quantitative assessment, with awareness of finding and rectify sporting mistakes evident on the post-session qualitative assessment.

The race lane provided a practical venue conducive for effective attention, concentration and directional learning, demonstrating Nideffer's (1985) theory on directional focus. The participants' skill in maintaining focus through distractions

was evident in general post-assessment improvement. This is an important part of focus maintenance (Harris & Harris, 1984; Weinberg & Gould, 2007).

After the self-confidence session, experience gain included maintaining optimal levels for peak performance. Despite small numbers through low attendance, results indicated a significant overall shift in quantitative and qualitative measures, which confirmed improved understanding and eagerness to participate, an attribute of optimum self-confidence.

At post-testing the participants' understanding of goal setting included motivation. This is an important element when setting sporting objectives (Moran, 2004). While the quantitative entity and incremental learning perspectives did not appear to improve, understanding of internal and external locus of control was enhanced.

Community workshop intervention participants displayed a significant improvement in overall psychological skills after the hour and a half session, demonstrating the potential immediate effectiveness of PST programs. Furthermore, elite adult sportsperson case studies revealed an improvement in psychological skills.

Enhancement of psychological skills in participants at individual, group and community level is consistent with PST literature (Sanchez & Lesyk, 2001; Wann & Church, 1998; Weinberg & Gould, 2007). It confirmed the hypotheses that the PST program would improve the psychological skills in the school group and community workshop intervention, as well as with adult elite case study participants.

6.2.3. Psychological skills training and performance

Although sample size was small and no significant result was achieved, performance times of the experimental group improved in comparison to the control group. This was in the expected direction, in keeping with literature on PST and performance (Weinberg & Gould, 2007) as well as experts' views on PST. Furthermore feedback suggested the PST program improved participants' athletic ability and assisted them with other sport and exercise activities. As discussed, the same PST program can train sport at different competitive levels or be adapted and utilized in different sporting contexts upon requirement.

Results are similar to a recent study undertaken by Pieterse and Potgieter (2006), which observed the effect of a five session PST program, which comprised of arousal, imagery, concentration and goals setting, on the athletic performance of six 1500 metre youth athletes, as assessed on time measurements. Results indicated that after the PST program there was a significantly overall group effect, with significant individual performance improvements in four of the six athletes.

6.2.4. Impact of psychological skills on psychological well-being

The school experimental group's psychological well-being appeared to improve in comparison to the control group. At post-test the experimental group's responses were more diverse, holistic and concerned with psychological skills. This suggested that growth in meaningful experience had occurred during the PST program. The experimental group continued to maintain this growth as evident at follow-up

assessment. Case study data also suggested the PST program improved the meaning of psychological well-being for the adult elite participants.

Research has revealed that support groups improve psychological well-being (Bhana, 1998; Mthembu, 2001; Patel, 2003; Rappaport, 1985). While the support group environment formed would have contributed to the improvement in psychological well-being of the experimental group, the improvement in psychological well-being evident in adult elite case studies, suggests the PST program improved psychological well-being independent of any possible group effect.

6.2.5. Relationship between psychological skills and psychological well-being

In view of the fact that the scales were independently standardised with high alpha coefficients, as was expected, psychological well-being components on the one hand and psychological skill components on the other were significantly positively correlated. Quantitative results from the school group intervention correlational matrix suggested personal growth can be an imagined experience and purpose in life may involve mental preparation for expected and unexpected events. The literature review suggested goal setting is an important component in purpose in life. Motivation is an aspect of goal setting, with results suggesting motivation is an essential part of having a purpose in life. Qualitative findings from post-test experience of psychological well-being components, indicated positive relationships between autonomy and mental imagery, self-confidence as well as motivation, personal growth and physiological arousal, cognitive arousal, mental imagery as well as self-confidence, environmental mastery and physiological arousal, cognitive

arousal, mental imagery, attention as well as concentration, purpose in life and attention, concentration, self-confidence, motivation as well as goal setting, positive relations with others and physiological arousal, confidence as well as motivation, and self-acceptance and physiological arousal, cognitive arousal, confidence as well as motivation. Results therefore empirically validate that each psychological well-being component is positively related to multiple psychological skill components and vice versa.

At a conceptual level, experts suggested psychological skills are part of general life skills, trainable for specific settings such as sport, usually associated with performance outcomes rather than health. This takes us back to the introductory chapter and notion that psychological skills are everyday techniques that can be trained in various settings, which, in the context of sport, have been extensively researched in relation to performance. If they are being defined in a health context then the relationship might be concerned more with general well-being and application of skills for health.

Experts proposed that some form of psychological well-being is required for psychological skills to be effective. Psychological skills improve psychological well-being and vice versa. It was suggested that PST techniques can improve psychological skills and psychological well-being, with examples being breathing, thought stopping and positive self-talk techniques. Lastly, as discussed in the interventions, experts emphasised that coaches have a vital role to play in PST.

The question posed in the motivation as to whether psychological skills and psychological well-being are related, seems to have been answered. Above results suggest that psychological skills and psychological well-being are overlapping concepts with interrelated components. Both psychological skills and psychological well-being are required for life, sport, health and performance.

6.2.6. Sport psychology in South Africa

This research demonstrated the applicability of PST programs in South Africa. It revealed the value of implementing programs for youth. Participants expressed value and enjoyment in having had the opportunity to receive sport psychology and PST. Furthermore, the research confirmed the value of PST programs with elite and non-elite athletes for the improvement of psychological skills.

The program was useful as a community workshop intervention in health promotion. This suggests that psychological skills training can be combined with existing community interventions involving health, sport and exercise. The program established the importance of working with groups for the improvement of psychological skills, especially in South Africa, where wonderful opportunity exists to optimise and integrate diverse local knowledge perspectives, expertise and skills.

6.2.7. Support groups and empowerment

Throughout the school experimental group sessions, a supportive group environment was maintained. The sport coordinator helped in the collection of assessment data,

which appeared to further improve the supportive environment. An encouraging environment was also formed at the community workshop intervention resulting in diverse knowledge sharing.

The environment formed by school intervention and community workshop intervention was conducive for the general development of knowledge, sharing of ideas, with specific deeper understanding of human emotions experienced by some the school experimental group participants. This confirms literature by Bhana (1998), Patel (2003), Rappaport, (1985) and Mthembu, (2001) with regard to meaningful therapeutic interactions occurring in support groups.

6.3. Conclusion

Based on the discussion the following conclusions can be drawn. Firstly, the PST program appeared to be a valuable intervention at all levels for promotion of sport, health and psychological skills. It added to the undeveloped research on sport psychology in South Africa and the growth needs of the field as a whole.

The PST program appeared to be specifically associated with the improvement of psychological skills, health, sport and performance at youth level. From a performance perspective, with regard to local and international competition, youth athletes in South Africa need to receive sport psychology, PST programs and life skill training.

PST programs, which use a broader range of psychological skills than single PST interventions, are more likely to improve psychological well-being and transfer skills into life, health and sporting contexts. The importance of investigating this conceptual relationship was for local and international benefit. At a theoretical and conceptual level, the interventions and case studies suggested the relationship between psychological skills and psychological well-being is dependent on how and in what context the concepts are defined, and supported the notion that multiple causal and correlational relationships may exist between psychological well-being and psychological skills both in themselves and between their components. Essentially both concepts are psychological variables, each necessary for health and performance, with spirituality an essential component noted by experts and participants.

From an experiential perspective it has been a privilege and pleasure to be able to conduct this research and add to theoretical and practical knowledge. As evident, PST programs have great potential as a community intervention. Further research needs to be implemented on PST programs in order to refine their implementation and effectiveness.

6.4. Limitations of the study

The first limitation of the study was school sample size. Although sufficient schools were approached, it was unfortunate that only one school was able to commit to the study. Adaptations made to the design, provided more opportunity for diverse valuable knowledge and data to be collected. Although African, Indian, Coloured and White learners in the sample represented the multicultural South African context the

sample was biased in terms of its economically developed and urban school context. Therefore any generalizations inferred from the presents study should be treated with caution.

Secondly, due to school participants partaking in examinations, sport and other extra curricular activities, it was difficult to coordinate times when participants could be present at every session. While sessions could have been organised on weekends, this would have been affected by interschool matches. Despite constraints most of the participants received comprehensive PST.

6.5. Recommendations

This study provides a foundation for future research and intervention in South Africa where programs need to be implemented to enhance health and sporting performance of adult athletes and for the growth and development of young sportspeople. More PST interventions should be promoted with parents, principals and sport coaches and implemented in schools to promote life, health, sport and psychological skill training. It is suggested that more in-depth, community PST programs with multiple outcome and process measures be implemented to further evaluate the effect of PST programs as a health intervention strategy. Non-exercising samples could be useful as control. At present research is continuing with sports such as rugby and cricket.

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Appendices

Appendix W: Session 5 – Self-confidence handout

Appendix X: Perception of Success Questionnaire

Appendix Y: Self-theory questionnaire

Appendix Z: Session 6 – Goal setting and motivation handout

Appendix AA: Psychological well-being subscales outcome measure

Appendix BB: PST group evaluation

Appendix CC: PST program evaluation

Appendix DD: Letter to experts and question asked

Appendix EE: Qualitative data

The school participants were given the letter A and a number (e.g. participant A 1 etc).

Attached please find all the experimental and control group participants' raw qualitative data from T1, the six sessions, T2, program evaluation, T3, and daily raining schedules.

The cricket player and swimmer were given the letter B and a number (e.g. participant B 18 etc).

Attached please find all the cricket player and swimmers' raw data from the pre-test, six sessions, post-test, program evaluation and re-test T3.

The sport psychology experts were given a number a letter C and a number (e.g. expert C 1 etc).

Appendices

Appendix A

University of Pretoria

Pretoria 0002 Republic of South Africa
http://www.up.ac.za

FACULTY OF HUMANITIES

Dept Biokinetics, Sport and Leisure Sciences
Tel: 012- 420-6040 Fax: 012-420-6099
www.bsl.up.ac.za

Participant information letter

University of Pretoria
Pretoria
0002

DPHILL IN HUMAN MOVEMENT SCIENCE: SPORT PSYCHOLOGICAL SKILLS TRAINING AND PSYCHOLOGICAL WELL-BEING IN YOUTH ATHLETES

Dear parent/legal guardian and participant we are asking you to help evaluate the effectiveness of a psychological skills training program. Participation is completely voluntary and participants must be between the age of 16 and 18. Participants who together with their parents/legal guardians sign the consent form will be allowed to participate in the study. The participant's parents/legal guardians will be contacted to ensure that consent was given. Participants can be both male and female who partake in the 100, 200, 400, 800 and 1500 metre athletic track events. Participants, who are using performance-enhancing substances, which includes creatine, will not be allowed to participate in the study. Participants who compete at a local or provincial level and not at an international level will be allowed to participate in the study.

Participants will be randomly allocated to either an experimental or control group. The experimental group will receive the psychological skills training program at the start of the season and the control group after the season has ended. Both groups will receive the psychological skills training program.

The psychological skills training program will involve one session a week for six weeks and will cover topics such as mental imagery, goal setting, concentration, arousal management and relaxation.

Participants will be asked to complete questionnaires and questions before, during and after the season and before, during and after each session, which will evaluate the effectiveness of the psychological skills training program and its impact on psychological well-being.

All participants' information will be kept confidential. Participants are free to withdraw at any stage of the process.

If you or your parent/legal guardian has any questions feel free to contact me on 0845118096.

Many thanks

David Edwards

Appendix B

University of Pretoria

Pretoria 0002 Republic of South Africa
http://www.up.ac.za

FACULTY OF HUMANITIES

Dept Biokinetics, Sport and Leisure Sciences
Tel: 012- 420-6040 Fax: 012-420-6099
www.bsl.up.ac.za

Consent form

University of Pretoria
Pretoria
0002

DPHILL IN HUMAN MOVEMENT SCIENCE: SPORT PSYCHOLOGICAL SKILLS TRAINING AND PSYCHOLOGICAL WELL-BEING IN YOUTH ATHLETES

CONSENT TO PARTICIPATE IN RESEARCH

Dear parent/legal guardian and participant, we are asking you to take part in this research so that we can evaluate the effectiveness of a psychological skills training program and to observe the effect of this program on psychological well-being.

This research will be conducted by David Edwards and is promoted by Prof. B. Steyn.

Participants must be between the age of 16 and 18. If you agree to allow your child to participate and if they agree to be in this study they will be randomly assigned to either an experimental or control group. The experimental group will be asked to complete a six session psychological skills training program before the athletic season and the control group after the season.

The research will begin before the athletic season and end six weeks after the completion of the athletic season. They will be asked to complete questionnaires before, during and after the process.

If you allow your child to participate and they agree, you will be increasing the understanding of sport psychological skills training and psychological well-being.

Participation is completely confidential. The results will be reported in a group category. The data may be used for future research, but no names will be kept with the data.

In your child decides to participate they can withdraw at any stage of the process.

You or your child may ask any questions about the study. David Edwards is available on 0845118096.

Signing your name means that you agree to allow your child to participate in this study.

I,……...……..…….. parent/ legal guardian of .....…….…….……..agree to allow my child to participate in this study evaluating the effectiveness of a sport psychological skills training program and observing the effect of this program on psychological well-being. I understand that my child's participation is entirely voluntary, confidential, that they can withdrawal at any time and that the nature of the research has been explained to me. If I have any questions I can call David Edwards on 0845118096.

…….. ……
Signature of Parent/Legal guardian Date

…….. ……
Signature of Participant Date

Contact phone number of parent/legal guardian……..

Appendix C

University of Pretoria

Pretoria 0002 Republic of South Africa
http://www.up.ac.za

FACULTY OF HUMANITIES

Dept Biokinetics, Sport and Leisure Sciences
Tel: 012- 420-6040 Fax: 012-420-6099
www.bsl.up.ac.za

Biographical information

Participant code:

Age:

Gender:

Population group:

Grade:

Track event:

Years of participation:

Level of previous participation:

Any performance enhancing substance:

Appendix D

Psychological well-being questionnaire

Participant code:

The following set of questions deals with how you feel about yourself and your life. Please remember that there are no right or wrong answers.

Circle the number that best describes your present agreement or disagreement With each statement	Strongly Disagree	Disagree Some-what	Disagree Slightly	Agree Slightly	Agree Some-what	Strongly Agree
1. I tend to be influenced by people with strong opinions	1	2	3	4	5	6
2. I think it is important to have new experiences that challenge how you think about yourself.	1	2	3	4	5	6
3. In general I feel I am in charge of the situation in which I live.	1	2	3	4	5	6
4. I live life one day at a time and don't really think about the future.	1	2	3	4	5	6
5. Maintaining close relationships has been difficult and frustrating for me.	1	2	3	4	5	6
6. When I look at the story of my life, I am pleased with how things have turned out.	1	2	3	4	5	6
7. I have confidence in my opinions, even if they are contrary to the general consensus.	1	2	3	4	5	6
8. For me, life has been a continuous process of learning, changing and growth.	1	2	3	4	5	6
9. The demands of everyday life often get me down.	1	2	3	4	5	6
10. Some people wander aimlessly through life, but I am not one of those people.	1	2	3	4	5	6

11. People would describe me as a giving person willing to share my time with others.	1	2	3	4	5	6
12. I like most aspects of my personality.	1	2	3	4	5	6
13. I judge myself by what I think is important, not by the values of what others think is important.	1	2	3	4	5	6
14. I gave up trying to make big improvements or changes in my life a long time ago.	1	2	3	4	5	6
15. I am quite good at managing the many responsibilities of my daily life.	1	2	3	4	5	6
16. I sometimes feel as if I've done all there is to do in life.	1	2	3	4	5	6
17. I have not experienced many warm and trusting relationships with others.	1	2	3	4	5	6
18. In many ways, I feel disappointed about my achievements in life.	1	2	3	4	5	6

Appendix E

Mental skills questionnaire

Participant code:

Please complete the following questions related to mental skills. Please be as honest as possible. There are no right or wrong answers.

	Strongly Disagree					**Strongly agree**
Imagery ability						
1. I can rehearse my sport in my mind.	1	2	3	4	5	6
2. I rehearse my skills in my head before I use them.	1	2	3	4	5	6
3. It is difficult for me to form mental pictures.	6	5	4	3	2	1
4. I can imagine how movement feels.	1	2	3	4	5	6
Mental preparation						
5. I always set myself goals in training.	1	2	3	4	5	6
6. I always have very specific goals.	1	2	3	4	5	6
7. I always analyse my performance after I complete my performance.	1	2	3	4	5	6
8. I usually set goals that I achieve.	1	2	3	4	5	6
Self-confidence						
9. I suffer from lack of confidence about my performance.	6	5	4	3	2	1
10. I approach all competitions with confident thoughts.	1	2	3	4	5	6
11. My confidence drains away as competitions draw nearer.	6	5	4	3	2	1
12. Throughout competitions I keep a	1	2	3	4	5	6

positive attitude.						
Anxiety and worry management						
13. I often experience fears about losing.	6	5	4	3	2	1
14. I worry that I will disgrace myself in competitions.	6	5	4	3	2	1
15. I let mistakes worry me when I perform.	6	5	4	3	2	1
16. I worry too much about competing.	6	5	4	3	2	1
Concentration ability						
17. My thoughts are often elsewhere during competition.	6	5	4	3	2	1
18. My concentration lets me down during competition.	6	5	4	3	2	1
19. Unexpected noises put me off my performance.	6	5	4	3	2	1
20. Being easily distracted is a problem for me.	6	5	4	3	2	1
Relaxation ability						
21. I am able to relax myself before a competition.	1	2	3	4	5	6
22. I become too tense before competition.	6	5	4	3	2	1
23. Being able to calm myself down is one of my strong points.	1	2	3	4	5	6
24. I know how to relax in difficult circumstances.	1	2	3	4	5	6
Motivation						
25. At competitions I am usually psyched enough to complete well.	1	2	3	4	5	6
26. I really enjoy a tough competition.	1	2	3	4	5	6
27. I am good at motivating myself.	1	2	3	4	5	6

28. I usually feel that I try my hardest.	1	2	3	4	5	6

Appendix F

Participant code:

What does psychological well-being mean to you?

Appendix G

Participant code:

What does psychological skills training mean to you?

Appendices H

Participant code:

Speed in seconds over distances _____.

Appendix I

Daily training schedule

Participant code:

The participants will be given a diary and asked to keep a detailed record of their training, learning experiences and emotions per week over the season.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

Appendix J

Participant code:

Depending on the session: What does (physiological arousal/cognitive arousal/mental imagery/attention and concentration/self-confidence/goal setting and motivation) mean to you?

Appendix K

Participant code:

Depending on the session: What does (physiological arousal/cognitive arousal/mental imagery/attention and concentration/self-confidence/goal setting and motivation) mean to you now?

Appendix L

Participant code:

How did you experience the session?

Appendix M

Relaxation measures

Participant code:

Pre-session heart rate (Beats/minute)	**Post-session heart rate (Beats/minute)**
_____	_____

Pre-session breathing (No of breathes/minute)	**Post-session breathing (No of breathes/minute)**
_____	_____

Appendix N

Competitive State Anxiety Inventory 2 (CSAI-2)

Participant code:

Please complete the following questions related to anxiety. Please be as honest as possible. There are no right or wrong answers.

	Not at all	Somewhat	Moderately so	Very much so
1. I feel nervous.	1	2	3	4
2. I feel jittery.	1	2	3	4
2. My body feels tense.	1	2	3	4
4. I feel tense in my stomach.	1	2	3	4
5. My body feels relaxed.	1	2	3	4
6. My heart is racing.	1	2	3	4
7. I feel my stomach sinking.	1	2	3	4
8. My hands are clammy.	1	2	3	4
9. My body feels tight.	1	2	3	4

Appendix O

Session 1 Arousal - Physiological aspects

Arousal is a physiological and emotional experience, which exists along a continuum (Weinberg & Gould, 2007). In other words, arousal refers to what we experience as our current level of energy. Depending on various factors such as the individual athlete's expectancies, attitude and motivations, arousal may become linked to either negative or positive emotions. For example, low arousal can be associated with a positive experience of relaxation or a negative feeling of apathy. High arousal may be associated with positive feelings of euphoria or negative anxiety experiences. Somatic anxiety is the negative bodily experience of a heightened state of arousal.

The inverted U hypothesis suggests that moderate arousal has a positive effect on performance, with low or high arousal hindering athletic ability (Wann & Church, 1998). Hanin's (1980, 1986, 1997) theory of arousal and performance suggests that the optimum level of arousal differs amongst individuals and occurs in an athlete's zone of optimal functioning (Potgieter, 1997).

Arousal can be regulated and optimized through breathing and progressive relaxation. It is important to understand and be able to regulate one's own arousal levels in order to enter one's zone of optimal functioning and perform optimally.

Breathing

Smooth, deep, full breathing creates optimum arousal and performance. To create and experience centeredness, one should focus on breathing with the belly rather than the chest. Breathing methods regulate arousal and performance as well as emotional states associated with arousal, whether these be positive or negative. In order to heighten arousal the in-breath should be longer than the out-breath. In order to lower arousal the out-breath should be longer than the in-breath. Breathing exercises should be done daily for twenty to thirty minutes. Breathing rate is approximately a quarter of one's heartbeat per minute. One may measure the length of the in- and out-breath with a watch, or better still, by heartbeat. For example if one is feeling negative heightened arousal in the form of bodily anxiety, one may overcome this by breathing in to the count of 3 heartbeats or seconds and out to the count of 6 heartbeats or seconds.

Progressive relaxation

Relaxation exercises also help with heightened arousal in the form of anxiety. These become especially powerful when combined with other techniques such as breathing, imagery etc. Progressive relaxation as develop by Jacobson (1929, 1976) involves tensing then relaxing specific muscle groups (Wann & Church, 1998). Through progressive relaxation athletes learn to relax muscle groupings and differentiate between tension and relaxation, which cannot occur simultaneously (Weinberg & Gould, 2007).

Tense for 5 seconds and then relax the following muscle groups three times. It is important to concentrate on the relaxation experience. Progressive relaxation should be done twice daily. The following order can be modified.

7. right hand and fingers
8. right forearm
9. right upper arm
10. left hand and fingers
11. left forearm
12. left upper arm
7. head and face
8. shoulders
9. chest
10. stomach and abdomen
11. right upper leg
12. right lower leg
13. right foot and toes
14. left upper leg
15. left lower leg
16. left foot and toes

Homework

1. Understand how arousal affects performance,
2. Understand how moderate arousal creates optimal performance,
3. Understand how individuals have different levels of optimal arousal. It is important to find one's own zone of optimal functioning,
4. Practice smooth, deep, full breathing and progressive relaxation exercises daily,
5. If anxiety is experienced, recognized the anxiety. Practice breathing and relaxation in order to restore optimum arousal.

Appendix P

Competitive State Anxiety Inventory 2 (CSAI-2)

Participant code:

Please complete the following questions related to anxiety. Please be as honest as possible. There are no right or wrong answers.

	Not at all	Somewhat	Moderately so	Very much so
1. I am concerned about this competition.	1	2	3	4
2. I have self-doubts.	1	2	3	4
3. I am concerned that I may not do as well in this competition as I could.	1	2	3	4
4. I am concerned about losing.	1	2	3	4
5. I am concerned about choking under pressure.	1	2	3	4
6. I'm concerned about performing poorly.	1	2	3	4
7. I'm going to reach my goal.	1	2	3	4
8. I'm concerned that others will be disappointed with my performance	1	2	3	4
9. I'm concerned I won't be able to concentrate.	1	2	3	4

Appendix Q

Session 2 Arousal – Cognitive aspects

As discussed in session 1, arousal is both a physiological and psychological energy experience. This session will focus predominately on the cognitive aspects of arousal control. For optimal performance to occur, athletes should be experiencing moderate levels of cognitive arousal prior to an event (Weinberg & Gould, 2007). During the event, their minds should be clear of all unwanted thoughts and in a state of "no mind". They should be in their zone of optimal functioning and focused on the task at hand. However at times, this harmonious balance can be negatively affected by faulty cognitions about the event. Ellis's A-B-C model of reaction to events suggests that it is not the event itself which causes this emotional reaction, but the individual's perception of the event (Corey, 2001; Gilliland, James & Bowman, 1994). Negative thought patterns can heighten arousal levels, create cognitive anxiety and self-doubt. This can have a direct effect on sporting performance (Potgieter, 1997), both in preparation for and during the event.

Theories of cognition developed by Beck (1976), confirm the importance of identifying and changing these faulty thought patterns (Feltham, 1999). It is also essential to learn techniques such as meditation. The above should be done in conjunction with other techniques such as breathing, progressive relaxation and mental imagery.

Cognitions
Think back to time when you experienced negative thoughts in practice or performance. These thoughts general begin with a single negative thought, which then turns into a downward spiral of negative thinking. When this first negative thought is experienced one should identify that thought. One should then use a key word such as "stop" or "no". This first step is called thought stopping (Meichenbaum, 1985). A second step is to change the pattern of thinking from negative to positive. The use of positive statements is called positive self-talk (Wann & Church, 1998; Weinberg & Gould, 2007).

Try identifying, saying "stop" or "no" and then changing your pattern of thinking with the following negative statements:

"You are not fit enough"
"You are too lazy"
"You are going to choke"
"Your start is too slow"
"Your legs feel too heavy"
"Your stride is uneven"
"Your breathing is incorrect"
"You are not relaxed enough"
"You are not fast enough"
"You are not going to win"

Meditation
Mediation relaxes the body, and clears and focuses the mind. Find a quiet place. Sit or stand in a comfortable position. Close your eyes and relax. Practice firstly clearing, then focusing your mind on a single positive point.

Homework
1. Understand how negative thought patterns can have a direct impact on athletic performance.
2. Understand the importance of identifying and changing these negative thoughts into positive thoughts.
3. Understand that before the event one should be experiencing a moderate level of cognitive arousal.
4. During performance an athlete should have "no mind".
5. Practice using positive self-talk and meditation.

Appendix R

Sports imagery questionnaire (SIQ)

Participant code:

Please complete the following questions related to mental imagery. Please be as honest as possible. There are no right or wrong answers.

1. I make up new plans/strategies in my head.

1 Rarely	2	3	4	5	6	7 Often

2. I image the atmosphere of winning a championship (e.g., the excitement that follows winning a championship).

1 Rarely	2	3	4	5	6	7 Often

3. I image giving 100% during a game.

1 Rarely	2	3	4	5	6	7 Often

4. I can re-create in my head the emotions I feel before I compete.

1 Rarely	2	3	4	5	6	7 Often

5. I image alternative strategies in case my event/game plan fails.

1 Rarely	2	3	4	5	6	7 Often

6. I imagine myself handling the stress and excitement of competitions and remaining calm.

1 Rarely	2	3	4	5	6	7 Often

7. I imagine other athletes congratulating me on a good performance.

1 Rarely	2	3	4	5	6	7 Often

8. I can consistently control the image of a physical skill.

1 Rarely	2	3	4	5	6	7 Often

9. I image each section of a game (e.g., attack/defense).

1 Rarely	2	3	4	5	6	7 Often

10. I image the atmosphere of receiving a medal (e.g., the pride, the excitement, etc.).

1 Rarely	2	3	4	5	6	7 Often

11. I can easily change the image of a skill.

1 Rarely	2	3	4	5	6	7 Often

12. I image the audience applauding my performance.

1 Rarely	2	3	4	5	6	7 Often

13. When imaging a particular skill, I consistently perform it perfectly in my mind.

1 Rarely	2	3	4	5	6	7 Often

14. I image myself winning a medal.

1 Rarely	2	3	4	5	6	7 Often

15. I imagine the stress and anxiety associated with competing.

1 Rarely	2	3	4	5	6	7 Often

16. I image myself continuing with my game plan, even when performing poorly.

1 Rarely	2	3	4	5	6	7 Often

17. When I image a competition, I feel myself getting emotionally excited.

1 Rarely	2	3	4	5	6	7 Often

18. I can mentally make corrections to physical skills.

1 Rarely	2	3	4	5	6	7 Often

19. I imagine executing entire plays just the way I want them to happen in a game.

1 Rarely	2	3	4	5	6	7 Often

20. Before attempting a particular skill, I imagine myself performing it perfectly.

1 Rarely	2	3	4	5	6	7 Often

21. I imagine myself being mentally tough.

1 Rarely	2	3	4	5	6	7 Often

22. When I image a game that I am to participate in, I feel anxious.

1 Rarely	2	3	4	5	6	7 Often

23. I imagine myself appearing self-confident in front of my opponents.

1 Rarely	2	3	4	5	6	7 Often

24. I imagine the excitement associated with competing.

1 Rarely	2	3	4	5	6	7 Often

25. I image myself being interviewed as a champion.

1 Rarely	2	3	4	5	6	7 Often

26. I image myself to be focused during a challenging situation.

1 Rarely	2	3	4	5	6	7 Often

27. When learning a new skill, I imagine myself performing it perfectly.

1 Rarely	2	3	4	5	6	7 Often

28. I imagine myself being in control in difficult situations.

1 Rarely	2	3	4	5	6	7 Often

29. I imagine myself successfully following my game plan.

1 Rarely	2	3	4	5	6	7 Often

30. I image myself working successfully through tough situations (e.g., a difficult match, a sore ankle, etc.).

1 Rarely	2	3	4	5	6	7 Often

Appendix S

Session 3 - Imagery

Session 1 and 2 focused on the regulation of arousal. This session will look at the use of imagery. Imagery is the cognitive recreation and rehearsal of a sport and exercise action or experience (Gill, 2000). Such imagery increases concentration, self-confidence, controls arousal and improves sporting performance (Potgieter, 1997; Weinberg & Gould, 2007).

Imagery helps an athlete understand his/her own athletic ability and movement. It should be experienced both psychologically and physiologically (Sacket, 1934). Lang's (1977, 1979) bioinformational theory suggests that imagery is most successful when both the stimulus preposition; i.e. thinking about the athletic stadium, the track, the crowd and the other athletes, as well as response preposition; i.e. actually standing in the stadium and on the athletic track, are experienced by the athlete.

Imagery has a direct effect on athletic movement. Carpenter's (1894) psychoneuromuscular theory states that during the imagery process small amounts of neuromuscular activity, similar to but on a smaller scale than actual performance, are experienced by the athlete.

There are two main types of imagery. During internal imagery athletes view their athletic performance from their own vantage point (Potgieter, 1997). For example, in your visualization you may experience each moment of running your race, taking off tracksuit, putting on track shoes, getting to the starting line, hearing the starter's pistol, feeling the wind in your hair as you increase speed and that ecstatic sensation as you cross the finish line. When practicing external imagery athletes view their performance from an external, objective viewpoint. For example, you may clearly and calmly imagine yourself sitting on the grandstand watching yourself run, mentally recording how relaxed you look, the economy of your running style, the flow of perfect movement, your running through the tape at the finishing line. Both internal and external types of imagery are valuable and should be rehearsed in order (Weinberg & Gould, 2007).

The experience and creation of meaning associated with imagery is an essential part of the imagery process and should not be neglected (Weinberg & Gould, 2007). When practicing imagery it is important to make the image as vivid as possible and to control emotions and performance associated with the image.

Imaging ability can be improved by having a structured approach to visualizing an event and by using memory aids such as music (Nideffer, 1985). Imagery should be performed in conjunction with breathing, progressive relaxation, positive self-talk and meditation.

Practice

Firstly, make sure you understand how developing the skill of visualizing a mental picture of a successful sporting performance leads to improvement in the actual performance. Secondly, find yourself a quiet place. Thirdly practice the use of internal and then external imagery. Imagine being in a variety of settings and scenarios i.e. different practice sessions and competitions. Fourthly, once you have developed clear understanding of the process and skill in the technique, practice the imagery in conjunction with the breathing techniques, progressive relaxation, positive self-talk and meditation, discussed in the first two sessions. Finally, continue practicing until you have a clear image of an enjoyable, meaningful and successful sporting performance.

Homework

1. Understand that imagery helps an athlete to comprehend his/her own movement.
2. Understand that both cognitive and physiological aspects of imagery are important.
3. Understand the importance of the experience and meaning associated with imagery.
4. Imagery should be practiced in conjunction with other techniques such as breathing, progressive relaxation, positive self-talk and meditation.
5. Practice sharpening imagery ability by using memory aids such as music.
6. Practice imagery at home, before and after practice and competition.
7. To facilitate future rehearsal, make a detailed, moment to moment, recording of all important images for success in your particular event

Appendix T

Concentration grid

Participant code:

32	**42**	**39**	**34**	**99**	**19**	**84**	**44**	**03**	**77**
37	**97**	**92**	**18**	**90**	**53**	**04**	**72**	**51**	**65**
95	**40**	**33**	**86**	**45**	**81**	**67**	**13**	**59**	**58**
69	**78**	**57**	**68**	**87**	**05**	**79**	**15**	**28**	**36**
09	**26**	**62**	**89**	**91**	**47**	**52**	**61**	**64**	**29**
00	**60**	**75**	**02**	**22**	**08**	**74**	**17**	**16**	**12**
76	**25**	**48**	**71**	**70**	**83**	**06**	**49**	**41**	**07**
10	**31**	**98**	**96**	**11**	**63**	**56**	**66**	**50**	**24**
20	**01**	**54**	**46**	**82**	**14**	**38**	**23**	**73**	**94**
43	**88**	**85**	**30**	**21**	**27**	**80**	**93**	**35**	**55**

Appendix U

Session 4-Attention and concentration

The first three sessions discussed physiological arousal, cognitive arousal and imagery. This session will focus on attention and concentration. These are interlinking skills, which can be used interchangeably. Attention involves focusing one's mental ability on a current task. Concentration involves sustaining this attention over a period of time, while being aware of the environment and situation at hand (Harris & Harris, 1984; Weinberg & Gould, 2007).

Nideffer (1985) views attention along two continuums: width and direction. He describes four types of attentional focus: broad, narrow, internal and external. An example of broad internal focus is an athlete planning his/her race strategy. An illustration of broad external focus is an athlete viewing the athletic stadium. An example of narrow internal focus is an athlete controlling arousal or breathing. An illustration of narrow external focus is an athlete focusing on his/her race lane (Potgieter, 1997; Weinberg & Gould, 2007).

Attention and concentration can be disrupted by incorrect thought patterns, faulty cognitions about previous events, misinterpretations or inability to control arousal, anxiety, exhaustion, visual and auditory distractions (Weinberg & Gould, 2007).

An athlete's attention and concentration can be improved by using thought stopping, positive self-talk, cue words, routines, simulation training, eye control, athletic skills and race strategies (Moran, 2004; Weinberg & Gould, 2007).

Focusing attention and concentration
Firstly practice using broad and narrow, internal and external attentional focus.
Secondly practice eye control, by focusing on any specific object of your choice.
Thirdly establish a cue word such as "stay focused". Concentrate on the dot on the back of this page, while a partner attempts to distract you by reading out the following statements:

"You are not focused on this task"
"You are unable to focus"
"You are shifting your focus"
"Your mind is wandering"
"You are thinking about other things"
"You are unable to concentrate for a long period of time"
"You are becoming distracted"
"You are losing concentration"
"These comments are affecting you"
"You have shifted your focus from the task at hand"

Fourthly practice using thought stopping and positive self-talk with the above statements while focusing on attention and concentration.

Homework

1) Understand how attention and concentration are interlinking skills that can be used interchangeably.
2) Understand broad, narrow, internal and external attentional focus.
3) Understand that attention and concentration can be disrupted by internal and external distractions.
4) Experience how attention and concentration can be enhanced through a variety of techniques, some of which were discussed in previous sessions.
5) Practice using broad, narrow, internal and external attentional focus.
6) Practice eye control and staying focused
7) During the athletic season practice establishing routines, simulation training, athletic skills and developing a race strategy/plan.
8) Practice improving your attention and concentration ability and see what works for you.

Appendix V

Participant code:

Competitive State Anxiety Inventory 2 (CSAI-2)

Please complete the following questions related to anxiety. Please be as honest as possible. There are no right or wrong answers.

	Not at all	Somewhat	Moderately so	Very much so
1. I feel at ease.	1	2	3	4
2. I feel comfortable.	1	2	3	4
3. I feel self-confident.	1	2	3	4

4. I feel secure.	1	2	3	4
5. I'm confident I can meet the challenge.	1	2	3	4
6. I'm confident about performing well.	1	2	3	4
7. I feel mentally relaxed.	1	2	3	4
8. I'm confident because I mentally picture myself reaching my goal.	1	2	3	4
9. I'm confident of coming through under pressure.	1	2	3	4

Appendix W

Session 5 – Self-confidence

The previous sessions covered physiological arousal, cognitive arousal, imagery, attention and concentration. This session will focus on self-confidence. Self-confidence is the belief in one's ability to successfully complete an athletic event (Weinberg & Gould, 2007).

As previously discussed, psychological skills exist along a continuum. It is important to find/utilize the level of skill, which creates optimal performance. Moderate levels of self-confidence produce the best sporting results. Low levels of confidence can be caused by a lack of practice, poor self-belief and faulty thought patterns. It can result in a self-fulfilling prophecy where a person believes they will not succeed at a task and they therefore do not (Goldstein, 1994). On the other end of the scale, overconfidence can cause athletes to become complaisant about their ability. It can result in them not wanting to practice, not listening to their coaches and not wanting to improve their skills. They may believe they know all there is to know about their sport and think they do not require further skills/training.

It is important to understand how a moderate level of self-confidence produces peak performance. It helps athletes to believe in their ability and to realize their talent. Humble but confident athletes are constantly striving. They realize that they can always learn new techniques and improve their skills. They comprehend the important of having an open mind and utilizing not only traditional techniques, but a variety of methods from different sports and cultures. They value the importance of spirituality and the need to develop their minds and themselves as human beings. They strive to become balanced and harmonious athletes who can adapt and switch on and off their skills when required.

As a skill, self-confidence can be improved through positive self-talk, imagery, regulation of arousal, being physically conditioned, acting confidently and remembering past sporting achievements (Weinberg & Gould, 2007).

Improving self-confidence
Firstly spend some time thinking about the importance of confidence, and how under/over confidence can hamper performance. Secondly practice positive self-talk, experiencing a moderate level of confidence. Thirdly think back to a time when you experienced a moderate level of self-confidence and how you performed. Fourthly visualize yourself in detail winning your athletic event at a practice, school and provincial meeting.

Homework
1. Understand the importance of self-confidence.
2. Understand that like some other psychological skills a moderate level of self-confidence is optimum, with under or overconfidence hampering performance.
3. Understand self-confidence can be improved using a variety of techniques discussed in previous sessions.
4. Practice experiencing a moderate level of self-confidence using these techniques.
5. Practice visualizing yourself wining various athletic events at a variety of different athletic meetings.

Appendix X

Perception of Success Questionnaire

Participant code:

The following questionnaire assesses ego and task orientation. Please be as honest as possible. There is no right or wrong answers.

When playing sport, I feel most successful when….

	Strongly Disagree		Neutral		Strongly agree
1. I beat other people.	A	B	C	D	E
2. I am clearly superior.	A	B	C	D	E
3. I am the best.	A	B	C	D	E
4. I work hard.	A	B	C	D	E
5. I show clear personal improvement.	A	B	C	D	E
6. I outperform my opponents.	A	B	C	D	E
7. I reach a goal.	A	B	C	D	E
8. I overcome difficulties.	A	B	C	D	E
9. I reach personal goals.	A	B	C	D	E
10. I win.	A	B	C	D	E
11. I show other people I am best.	A	B	C	D	E
12. I perform to the best of my ability	A	B	C	D	E

Appendix Y

Self-theory questionnaire

Participant code:

Read each sentence below and then circle the *one* number that shows how much you agree with it. There are no right or wrong answers.

1. You have a certain level of ability in sport and you cannot really do much to change that level.

1 Strongly Agree	2 Agree	3 Mostly Agree	4 Mostly Disagree	5 Disagree	6 Strongly Disagree

2. Even if you try, the level you reach in sport will change very little.

1 Strongly Agree	2 Agree	3 Mostly Agree	4 Mostly Disagree	5 Disagree	6 Strongly Disagree

3. To be good at sport you need to be naturally gifted.

1 Strongly Agree	2 Agree	3 Mostly Agree	4 Mostly Disagree	5 Disagree	6 Strongly Disagree

4. How good you are at sport will always improve if you work at it.

1	2	3	4	5	6
Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree

5. If you put enough effort into it, you will *always* get better at sport.

1	2	3	4	5	6
Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree

6. To be successful in sport you need to learn techniques and skills and practice them regularly.

1	2	3	4	5	6
Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree

Appendix Z

Session 6 – Goal setting and motivation

The previous sessions covered physiological arousal, cognitive arousal, imagery, attention, concentration and self-confidence. This final session will look at motivation and goal setting. Motivation is the force and focus of an athlete's energy (Weinberg & Gould, 2007). It can be interpreted in terms of entity theory or incremental learning perspectives (Dweck, 2005). Goal setting is the establishment of desired objectives, with the achievement of these goals dependent upon factors such as motivation (Moran, 2004).

Motivation is influenced by personality traits and situational factors (Weinberg & Gould, 2007). An athlete who exhibits an internal locus of control, attributes success/failure to his/her own characteristics. An athlete, who has an external locus of control, perceives success/failure as being dependent upon environmental factors rather than individual traits. It is important to find a balance between the two. Situational factors such as the level of competition, venue and coach will also influence an athlete's motivational level. An athlete should have the right mindset and be focused on the event. Coaches should encourage their athletes and provide constant constructive feedback.

An athlete, in consultation with his/her coach/sport psychologist, should establish both practice and competition, short and long term goals. These goals should be specific, measurable and realistic (Bull, Albinson & Shambrook, 1996; Moran, 2004). They should be process (movement during the athletic race), performance (performing better than own previous goals) and outcome orientated (coming first in the athletic race) (Weinberg & Gould, 2007). Goals should be written down and rewarded when achieved. They should however be somewhat flexible, as over time objectives can change (Potgieter, 1997).

Being motivated and establishing goals

Firstly think about your own motivation level. Do you adopt more of an internal or external locus of control? Understand the importance of having a balance between the two. Think about past athletic achievements and how far you have come as an athlete.

Secondly remember past goals you have set up for yourself. Think about the importance of setting and writing down goals. If you have not set goals before, establish and write down short and long-term goals, which you would like to achieve. These should be process, performance and outcome orientated. Your goals should be specific, measurable, action-related, realistic and timetabled. If you have already set goals you may wish to adapt your existing goals using the above information and the discussion, which has just taken place.

Homework

1. Understand the importance of motivation and goal setting.
2. Understand the importance of finding a balance between internal and external perspectives of control.
3. Think about your own motivation level, past athletic achievements and everything that you have achieved so far.
4. Try to follow the goals, which you have set as closely as possible.
5. Reward yourself when you achieve these goals.
6. Remember goals should be somewhat flexible as objectives can change over time.

Appendix AA

Participant code:

Since the first assessment how have you experienced your:

1) Autonomy
2) Personal growth
3) Environmental mastery
4) Purpose in life
5) Positive relations with others
6) Self-acceptance

Appendix BB

Participant code:

What was your experience of the psychological skills training group?

Appendix CC

Participant code:

1. How did you experience the program?

2. What did you appreciate about the program?

3. How do you think the program can be improved?

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Appendix DD

15 Intrepid Avenue
Empangeni
3880
South Africa

Re: Sport psychological skills training and psychological well-being in youth athletes

Dear

I am currently researching a DPhil in Human Movement Science (Sport Psychology) through the University of Pretoria, South Africa. My study is on sport psychological skills training and psychological well-being in youth athletes. As part of my study I am researching sport and exercise psychology expert's views on the relationship between psychological skills and psychological well-being. I am collecting this qualitative data via email format. All information will be kept and presented in a confidential manner.

Your participation is greatly appreciated

David John Edwards

***Question*:** What is the relationship between psychological skills and psychological well-being?

Answer:

Appendix EE

Experimental group T1 What does psychological well-being mean to you?

Participant A 4: To motivate myself

Participant A 7: This refers to your mental health.

Participant A 8: That you are aware of your skills and ability and you are proud of it.

Participant A 9: With no psychological well being you are not normal.

Participant A 10: Having the right or positive mindset to be able to function in every day life or situations.

Participant A 11: Being able to perform well and have the correct mindset towards sport will help you do your best.

Participant A 12: Head strong, able to deal with stress, etc.

Participant A 13: Mental stability having a good image of oneself & perceiving yourself well, as well as the way you feel about the way in which you act.

Experimental group T1 What does psychological skills training mean to you?

Participant A 4: To boost my self-esteem and physical ability.

Participant A 7: To train the way you think and feel about certain aspects in your life.

Participant A 8: Improving your feelings of yourself which will improve your performance in training.

Participant A 9: I can improve my skills psychologically.

Participant A 10: Training your mind to help you perform mentally better.

Participant A 11: It helps you in everyday activities and helps you learn about yourself.

Participant A 12: Training the mind to adapt in stressful circumstances.

Participant A 13: Training yourself for training i.e. psychologically preparing yourself for competition.

Experimental group Pre-session: What does physiological arousal mean to you?

Participant A 4: Its how the body relates to different emotions.

Participant A 7: To be able to put yourself in the correct state of mind for peak performance.

Participant A 8: Anything that gets your emotions stirring. Something that makes your heart rate change

Participant A 9: ? Don't have a clue.

Participant A 10: Something that sparks up emotions.

Participant A 11: Being awake, alive.

Participant A 12: You get aroused, your heart rate beats faster.

Participant A 13: Waking up from sleep/a state of relaxation.

Experimental group Post-session: What does physiological arousal mean to you now?

Participant A 4: it's the way your body changes when you are tense, you learn ways to feel relaxed. How you control your body to stay the normal rate.

Participant A 7: To be able to control your breathing and physical being to enhance you emotion-self and state of mind.

Participant A 8: Anything that causes psychological or physical change in your emotion & effects your heart rate. Boredom-low arousal. Winning a match-high arousal. Best place to be –middle arousal.

Participant A 9: The way your hormones are if you are anxious or amped or are bored arousal is low & if you are nervous your arousal is high.

Participant A 10: The state you are in & how it can affect your performance.

Participant A 11: Having a low arousal and a high arousal. Finding the right level of arousal to perform better. Being very, relaxed, bored or feeling nervous etc.

Participant A 12: Your emotional state how you are feeling- high/low. Fast/low heart beat. Relaxation-low arousal

Participant A 13: The state you are in i.e. nervousness = high arousal. Calm (extremely) to the state of boredom = low arousal

Experimental group Physiological arousal: how did you experience the session?

Participant A 4: It was good how we learnt to know when we are tense and to relax ourselves.

Participant A 7: It was very relaxing and my tension was removed.

Participant A 8: It made me think about my breathing more and made me a little more able to control it. I am now really relaxed.

Participant A 9: Very relaxed & calm.

Participant A 10: The session was successful as I leant techniques about breathing which influences the way you perform.

Participant A 11: Learned a lot out of the session about getting the correct level of arousal to perform better in an activity. It really got me thinking about the things I've never noticed.

Participant A 12: Informative, interesting, relaxing.

Participant A 13: Good relaxation skills as well as skills 4 amping (increasing) before a game.

Experimental group Pre-session: What does cognitive arousal mean to you?

Participant A 4: I don't know.

Participant A 7: To amp or sike yourself up for a competition.

Participant A 8: The level of anxiety that you feel during or before a competition.

Participant A 9: I don't have a clue!

Participant A 10: The state your mind is in before a certain situation.

Participant A 11: Im not sure but it could mean (I think) having the right level of arousal-be amped believe in yourself.

Participant A 12: How…Um…Confused.

Participant A 13: Cognitive- psychological, arousal-the state you are in (emotional)

Experimental group Post-session: What does cognitive arousal mean to you now?

Participant A 4: It is a time to get relaxed and not to doubt yourself.

Participant A 7: To be able to focus an be in a positive state of mind before a competition.

Participant A 8: Is the level of anxiety n your thoughts.

Participant A 9: The way you think before running a race or doing something. The positives & negatives.

Participant A 10: Getting your thoughts in the right frame of mind in order to function effectively with no negative thoughts.

Participant A 11: Having a positive thought towards the activity you are going to do. It's how to replace the negative thoughts with positive thoughts and how to motivate yourself.

Participant A 12: No response

Participant A 13: The state that you are in (mentally) before a race/before & during arousal.

Experimental group Cognitive arousal: how did you experience the session?

Participant A 4: I learnt not to doubt myself. To always be positive. And to do the best I can do no matter what the competition or what anyone else says.

Participant A 7: I felt in control during the thought stopping. a empowered, enthusiastic and amped after the positive thought were said to me by my peer.

Participant A 8: It was really helpful and positive.

Participant A 9: I was relaxed & learned something new.

Participant A 10: It was interesting to see how negative/positive thoughts can effect your performance, & it taught me to channel my thoughts in a positive direction.

Participant A 11: This session taught me a lot about how to think positively and how to reach the perfect level of arousal to get motivated. It was a good session.

Participant A 12: Stopping negative thoughts as soon as they enter the mind. Reversing its and being and feeling positive about yourself.

Participant A 13: I am not concerned that others with my performance because it is my performance- I can focus & relax

Experimental group Pre-session: What does mental imagery arousal mean to you?

Participant A 4: It is the way we think and have all the ideas in our heads before a game.

Participant A 7: Creating a picture or image in your mind about your performance or game plan.

Participant A 8: Anything you can see in your head that can be done as a physical action.

Participant A 9: Pictures that you imagine in your head.

Participant A 10: Being able to see and picture your thoughts.

Participant A 11: Getting an certain picture in your mind and planning to keep that image to have a good performance during a game.

Participant A 12: To be able to image participating, what my thoughts are before/during game. To perfect moves before the game and to carry it out successfully.

Participant A 13: Mental pictures, being able to imagine things.

Experimental group Post-session: What does mental imagery arousal mean to you now?

Participant A 4: To think about what you are going to do before a game and what other people are thinking about you. To calm yourself down and do what you imagined in your head.

Participant A 7: Picturing both mentally and physically your plan of action or strategy from an internal and external point of view.

Participant A 8: How something looks from your own point of view what you can see yourself doing & being able to watch yourself performing a skill.

Participant A 9: The way you see yourself perform. It's an image you have in your head.

Participant A 10: Being able to picture an event in your mind in detail.

Participant A 11: Imaging something, before actually performing it and how I think it would be or someone else.

Participant A 12: Imagining your emotional and physical status before, during and after competing. Being able to see mistakes and perfect them mentally.

Participant A 13: Ability to imagine/gain knowledge of performance from mental images & other perspectives.

Experimental group Mental imagery: how did you experience the session?

Participant A 4: It was calming, relaxing learned about new things.

Participant A 7: I enjoyed this session because it teaches you to become focused on your competition and imagining a victory always feels good.

Participant A 8: It was very interesting & it is something that I tend to do in my sub-conscious. It was very interesting t incorporated breathing into the imagery & see how much more vivid the image becomes.

Participant A 9: Ok

Participant A 10: This session taught me how to mentally interpret what I would wish to happen in the event I'm participating in.

Participant A 11: I found it very interesting as it showed me that you could imagine something before performing it from your own perspective or someone else's.

Participant A 12: Interesting, informative exciting after thinking about competing.

Participant A 13: Can control images better & view it (image) from other perspectives.

Experimental group Pre-session: What does attention and concentration mean to you?

Participant A 4: Attention-to concentrate on something until you get it right. Concentration-to put your mind to one thing until you have gotten it.

Participant A 7: Attention- the ability to focus all your thoughts on one particular objective. Concentration- the period of time you can focus for.

Participant A 8: Attention and concentration are directly linked. Attention- is when you can listen and take in and remember things. Concentration- how long you can sit or listen or do something before you get distracted or agitated.

Participant A 9: Attention-having full concentration. Concentration-having your full attention.

Participant A 10: Attention-being fully aware. Concentration-being able to set your mind to focus on a task.

Participant A 11: Attention- fully aware. Concentration-being focused on something.

Participant A 12: Attention- when someone has captured your attention. Concentration-your mind is purely focus on one thing.

Participant A 13: Attention. Concentration

Experimental group Post-session: What does attention and concentration mean to you now?

Participant A 4: Attention-focusing on one thing for a short period of time. Concentration- focusing on something over a long period of time.

Participant A 7: Attention- to be able to focus on a particular thing. Concentration- to be able to focus for a long period of time on the task at hand.

Participant A 8: Attention-Ability to look and think of one thing only. Concentration-ability to focus on a task and be aware of what's around you and not get distracted.

Participant A 9: Attention-on several things. Concentration-focusing on one point.

Participant A 10: Attention-being able to concentrate on one certain task. Concentration- being able to clear your mind & pay attention to the task at hand while being aware of the environment.

Participant A 11: Attention- only focusing on something (one-thing). Concentration- having full attention on the task at hand.

Participant A 12: Attention-shorter period of time. focus on particular thing. Concentration-on a longer period of time, but still being aware of what's happening around you.

Participant A 13: Attention-focus over a short period of time. Concentration-focus over a longer period of time.

Experimental group Attention and concentration: how did you experience the session?

Participant A 4: Showed me how concentration helps your arousal.

Participant A 7: It was good to focus and exercise my brain.

Participant A 8: Very interesting. Motivating. Makes you focused.

Participant A 9: Very well just a bit tired.

Participant A 10: This session was mind challenging & I learnt to clear my mind & concentrate.

Participant A 11: This was a fun session, got to be more actively involved & had a few laughs.

Participant A 12: Very cool. Enjoyed it.

Participant A 13: Good but my time did not go down!

Experimental group Pre-session: What does self-confidence mean to you?

Participant A 4: Being confident and starting a goal feeling positive.

Participant A 7: Is being comfortable and positive about yourself, your capabilities and how you perform.

Participant A 8: Is being sure of yourself & your abilities.

Participant A 9: Confidence you have in yourself.

Participant A 10: Means being sure of yourself and your abilities.

Participant A 11: To feel positive about your performance or how you going to performance.

Participant A 12: To be confident in what we do and believe in ourselves and believe we can do it.

Participant A 13: Belief in yourself & your abilities.

Experimental group Post-session: What does self-confidence mean to you now?

Participant A 4: it helps you to believe in your ability and realize your potential. it changes your negative thoughts to positive thoughts.

Participant A 7: Is a moderate feeling of comfort and about your capabilities and your performance. Having a moderate sense of what you can achieve.

Participant A 8: It is being sure of yourself & your abilities but not being arrogant or self-destructive.

Participant A 9: Self

Participant A 10: Means being at a state where you are assure of yourself & being able to achieve.

Participant A 11: Being positive but on the right level.

Participant A 12: No response

Participant A 13: Belief in yourself & your ability top do well/perform well.

Experimental group Self-confidence: how did you experience the session?

Participant A 4: I put a lot of thought in this session. Helped to where you should be in self-confidence.

Participant A 7: It was interesting and the visualisation was uplifting.

Participant A 8: It was necessary to boost myself & relax & realize I needed to relax.

Participant A 9: Very well

Participant A 10: Good with interesting discussion.

Participant A 11: Was interesting & taught me that being to self-confident can be a bad thing & being under self-convince can be a bad thing.

Participant A 12: Cool beans! Set myself some goals. Useful info. Positive.

Participant A 13: Good, go moderate self-confidence.

Experimental group Pre-session: What does goal-setting and motivation mean to you?

Participant A 4: Motivation & goal setting-to motivate yourself into doing something you want to achieve.

Participant A 7: Goal setting- to set a target that is realistic & attainable for your short term and long-term performance. Motivation- the driving force behind your performances.

Participant A 8: Goal setting-setting logical pointers and markers to get to in a certain time frame. Motivation-encouragement.

Participant A 9: Goal setting-Is setting a goal & trying your best to meet it. Motivation-positiveness that pushes you forward.

Participant A 10: Goal-setting- Setting things that you want to achieve either long or short term. Motivation- getting yourself psyched up.

Participant A 11: Getting psyched about something. Having long, short & realistic goals.

Participant A 12: No response

Participant A 13: Goal setting-setting a goal you want to achieve/level you want to reach. Motivation-well-wishing psyching someone up.

Experimental group Post-session: What does goal-setting and motivation mean to you now?

Participant A 4: Motivation & goal setting-influenced by personality traits and set long and short term goals that I will achieve.

Participant A 7: Goal setting is the setting of attainable objectives. In order to obtain these targets you must be motivated and have the driving force behind the way you perform.

Participant A 8: Goals should be achievable & within a time limit & should be awarded. Motivation is influenced by personality & can be influenced externally & internally.

Participant A 9: Goal setting-setting goals & having the motivation. Motivation-Direction & intensity that pushes you forward.

Participant A 10: Goal-setting – Setting things that you want to achieve either long or short term. Motivation – getting psyched up.

Participant A 11: Being positive about a something making goals to motivate you.

Participant A 12: No response

Participant A 13: same as previous (Goal setting-setting a goal you want to achieve/level you want to reach. Motivation-well-wishing psyching someone up.)

Experimental group Goal-setting and motivation: how did you experience the session?

Participant A 4: It was putting a lot of thought and understanding how to set goals and motivate myself.

Participant A 7: It was interesting and I leant some new things about my personality when answering the questions.

Participant A 8: I needed the motivation to help with exam stress.

Participant A 9: Ok

Participant A 10: Interesting, thought provoking.

Participant A 11: It was interesting & I learned a lot about goal-setting & motivation.

Participant A 12: Other ones were better.

Participant A 13: Good, interesting.

Experimental group T2 What does psychological well-being mean to you?

Participant A 4: It is to motivate myself and have self-confidence.

Participant A 7: Your mental health an how experience different situations.

Participant A 8: It means knowing your skills and abilities and being positive about them and able to take control o them. It is having a positive attitude, good concentration, self-motivation, self-confidence, to be able to mentally prepare yourself for something & be able to calm yourself down.

Participant A 9: The well being of psychological being.

Participant A 10: Having a healthy positive mindset.

Participant A 11: To perform well & to have the right mind set towards sport.

Participant A 12: Content with our mental state of mind.

Participant A 13: Psychological stability (mental); having a good self-image

Experimental group T2 What does psychological skills training mean to you?

Participant A 4: To control yourself, have self-confidence, motivate yourself and set goals that you can achieve.

Participant A 7: To train yourself to think in a manner that is most profitable and effective to your performance.

Participant A 8: It is the development of the above mentioned abilities in order to improve your abilities in any situation, such as sport, school work and interaction with others.

Participant A 9: Your frame of mind you at before your task.

Participant A 10: Training your mind to help you perform fully and achieve your full potential – i.e. mentally, physically.

Participant A 11: Helps you in everyday activities and help you lean about yourself.

Participant A 12: Training your mind to be psychologically stable.

Participant A 13: using/the use of psychological skills to enhance physical performance.

Experimental Group T3 What does psychological well-being mean to you?

Participant A 4: Motivating yourself and having a high self esteem.

Participant A 7: Not completed

Participant A 8: It is the ability to control your own state of mind. It is when you can convince yourself to be positive & to let your mind control your performance.

Participant A 9: Not completed

Participant A 10: It means having a healthy frame mind and having a positive mindset.

Participant A 11: Not completed

Participant A 12: You are at peace with yourself don't let negative stuff mess with your head.

Participant A 13: A psychological balance.

Experimental Group T3 What does psychological skills training mean to you?

Participant A 4: to set goals that are achievable and to train your mind to always be positive.

Participant A 7: Not completed

Participant A 8: it is training your mind to do this (It is the ability to control ur own state of mind. it is when you can convince yourself to be positive & to let your mind control your performance.)

Participant A 9: Not completed

Participant A 10: Being able to train your mind to perform to its optimum.

Participant A 11: Not completed

Participant A 12: Training your mind to stay positive and prepare yourself for tasks to some.

Participant A 13: Ability to control one's psychological state.

Experimental group Since the first assessment how have you experienced your:

1) Autonomy

Participant A 4: It's being independent.

Participant A 7: I am now able to visualise and have alone time without getting agitated and irritated.

Participant A 8: I can initiate things easier by myself and motivate myself to do things without relying on others.

Participant A 9: The same

Participant A 10: I've been able to rely upon myself to get things done.

Participant A 11: It taught me to be self-confident abut myself & not rely on others on my performance.

Participant A 12: Learnt how to control my muscles and state of mind.

Participant A 13: I can/am able to control the way in which perform, by using psychological skills (i.e. I control it)

2) Personal growth

Participant A 4: Growing as person with yourself.

Participant A 7: I have leant many new things about my personality and myself.

Participant A 8: I have grown in my skills and in my ability to make every situation positive.

Participant A 9: Improved my skills.

Participant A 10: Sports wise I've been able to mentally prepare myself better & I've been able to have more insight.

Participant A 11: I learned more about sport & how to improve it.

Participant A 12: Grown as a person. Able to control my arousal levels and self-confidence has been boosted.

Participant A 13: I don't get as stressed and can control my mental images.

3) Environmental mastery

Participant A 4: being involved with your environment. Being in control of your environment.

Participant A 7: I feel that I am able to be in control of my feelings, emotions and what's happening around me.

Participant A 8: I am aware of my surroundings & can imagine what my surroundings may be like in a given event.

Participant A 9: No response.

Participant A 10: I've learnt to not let exterior circumstances alter my concentration.

Participant A 11: Not to let other things alternate my thoughts. Not to get distracted.

Participant A 12: No response.

Participant A 13: Good, can shut myself off from my surroundings-meditation etc. & not let them affect my performance.

4) Purpose in life

Participant A 4: To do well in my sports and academics.

Participant A 7: I feel I am able to focus better on my life and set goals which are realistic and attainable.

Participant A 8: My purpose is to serve God & I can use these skills to make sure that I am successful.

Participant A 9: I have 1 & goals to meet.

Participant A 10: I've realized that I'm valuable in all teams & relationships that I'm in.

Participant A 11: To do will in everything I do and stay motivated.

Participant A 12: I have a purpose

Participant A 13: Has improved/grown more positive.

5) Positive relations with others

Participant A 4: Have close relationships with others and get to know each other as friends.

Participant A 7: I have developed many more relationships and feel more confident about interacting with other people.

Participant A 8: As I have the ability to make a situation positive I have the ability to help others see the positive side & am therefore friendly & am easily able to make friends & be trusted by them.

Participant A 9: It's still the same.

Participant A 10: Been Able to relate to them & also help them with their preparation before sports events.

Participant A 11: It has brought me closer to people because I am more confident.

Participant A 12: Able to relate with others

Participant A 13: Can relax/calm down, don't get as irritated in annoying situations. Working in a group helped me to understand other people's sporting & psychological concerns; I can calm other people (down)

6) Self-acceptance

Participant A 4: To accept who you are and not degrade yourself. be proud of who you are.

Participant A 7: Not completed

Participant A 8: I accept myself for who I am and I can motivate & relax myself & make myself proud of who I am.

Participant A 9: Im still the same

Participant A 10: I've been able to accept what my skills & abilities are.

Participant A 11: I have accepted that I can do well & perform up to my ability if I have the right set of mind.

Participant A 12: Am able to accept myself it has increased and it feels good.

Participant A 13: I understand more that it's ok if I don't win/achieve what I want to, as long as I try my best.

Experimental group. What was your experience of the psychological skills training group?

Participant A 4: I liked being in a group. Everyone put forward their own opinion. We got to hear different opinions and relate some of them to ourselves. The group also socialized a lot and had a lot of laughs.

Participant A 7: It was more fun being in a group however I feel doing the program individually would have been more profitable. It was good to be able to compare and share the views of all the people in the group.

Participant A 8: It was interesting as I got to see how other people think & feel, which I love. It brought many things to my attention that I do every day but have never thought about. I have always used mental imagery but I had never thought of it as a skill that could be developed.

Participant A 9: I learnt lots of skills & breathing activities. My mental skills also improved.

Participant A 10: Working in a group was good because I was able to get other peoples points of view & the interaction was also beneficial.

Participant A 11: It was fun I got to know a lot of people that I had never known, made lots of friends & learned about self-confidence & levels of arousal. It was cool.

Participant A 12: Cool

Participant A 13: Bonded a lot with the group, helped one 2 understand other people's psychological & sporting concerns. Good o hear other peoples/ thoughts and the way they perceive the different lessons/sessions.

Experimental group Program evaluation

How did you experience the program?

Participant A 4: It was motivational. I enjoyed the program and leant new things.

Participant A 7: It was very informative and I leant many techniques to improve my performance.

Participant A 8: It was extremely interesting and any things w brought to my attention that I do every day but have just never thought about. I have always used mental imagery but I had never thought of it as a skill you could be developed and that was really interesting to me. I love trying to figure out how the human mind works and how different people think & feel about certain issues so this was an amazing experience for me.

Participant A 9: Very well.

Participant A 10: It was really interesting. It opened up a whole new perspective of things and to learnt how much your mind plays a role in your performance.

Participant A 11: This program has been exciting and I learned a lot about being properly prepared for a performance.

Participant A 12: No response

Participant A 13: Motivational; sparked some personal growth. Thought-provoking.

What did you appreciate about the program?

Participant A 4: Learning about new things that I was not aware of. I appreciated having David teach we about these things because he put it in a way that I understand.

Participant A 7: I was able to learn not only about enhancing my performance but also I learnt a lot about myself and my personality.

Participant A 8: that we were given handouts to help us remember everything. That everything was explained to us form the beginning so that we weren't left in the dark./ I appreciate the fact that someone has taken the time to explain all these different skills to me that I didn't event know I possessed.

Participant A 9: It helped me a lot while I played.

Participant A 10: It was awesome learning about all the different mental skills, which will definitely assist my performance in the future.

Participant A 11: It taught me a lot about myself.

Participant A 12: No response

Participant A 13: Personal growth, improved autonomy & self-acceptance.

How did you think the program could be improved?

Participant A 4: I don't think there is anything to do for program to be improved. It covers all the points and has all the basics.

Participant A 7: It would have been a little more profitable I done individually and if the session where not as rushed.

Participant A 8: Maybe increase the amount of time taken on each session so that more time can be spent practicing, understanding and getting used to the skills. Work with smaller groups as even though the group was fairly small there were too many of us to have the individual attention that is needed to ensure that everybody grasps the concepts thoroughly. The handouts could have been written in simpler English that everyone can understand.

Participant A 9: It couldn't be it ws fine.

Participant A 10: Maybe more people could be involved i.e. more people being trained.

Participant A 11: Nothing.

Participant A 12: No response

Participant A 13: Make it applicable to all sports and not just running.

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Daily Schedule

Participant A 4 Experimental group

Please keep a detailed record of all training, learning experiences and emotions per week over the season.

April 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	25 Happy	26 Happy but gloomy	27 happy	28 tired	29 bored	30 restless

May 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1 happy	2 excited	3 Okay & tired	4 happy	5 happy	6 happy	7 bored
8 Excited Week 1	9 happy	10 happy	11 smiley	12 happy	13 excited	14 happy & sad
15 Amped Week 2	16 Overwhelmed with excitement & happy	17 happy	18 happy	19 happy	20 Feeling down	21 cold
22 happy Week 3	23 Relaxed	24 Cold freezing	25 Shaking very cold	26 happy	27 Excited feeling great/basketball	28 bored
29 Happy Week 4	30 Happy & relaxed	31 Happy/basketball				

June 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
			1 Tired & bored	2 Soccer & hockey/feeling great	3 Excited/cold/happy	4 Bored/tired/cold
5 Happy Week 5	6 happy	7 happy	8 happy	9 happy	10 anxious	11 anxious
12 Nervous 4 exam Week 6	13 Nervous 4 exam	14 Happy and relaxed	15 nervous	16 happy	17 relaxed	18 anxious
19 Tired Week 7	20 Tired	21 Scared/tired	22 Scared	23 Scared	24 happy	25 happy
26 Tired	27 tired	28 Tired	29 Over-excited	30 happy		

July 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1 Soccer/ happy	2 happy
3 Sad	4 happy	5 Bored	6 happy	7 Tired	8 Excited	9 overwhelmed
10 happy	11 Bored	12 happy	13 Tired	14 Tired	15 happy	16 sad
17 I/M alright	18 happy	19 Soccer/ happy	20 Soccer/ happy	21 Soccer/ happy	22 Soccer/ happy	23 RElaxed
24 tired	25 Basketball/happy	26 Happy	27 Soccer & basketball/happy	28 Soccer/ happy	29 Relaxed	30 chilling
31 happy						

August 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	1 B-Ball/happy	2 happy	3 Soccer/ happy	4 Soccer/ happy	5 Basketball/happy & tired	6 Bored
7 Tired	8 Athletics day/excited	9 relaxed	10 Soccer/ happy	11 Soccer/ happy	12 Bored	13 Tired
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

September 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1	2	3
4	5	6	7	8	9	10

11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

October 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

November 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

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December 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

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Daily Schedule

Participant A 8 Experimental group

Please keep a detailed record of all training, learning experiences and emotions per week over the season.

April 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	25 Emotion-tired	26 1km walk Outgoing	27 Tackle rugby Accomplishment	28 4km run 5km hike at altitude satisfied	29 Bareback pony riding Full of smiles	30 Relaxed

May 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1 Enthusiastic	2 Normal	3 4km run 18minutes (cross country) accomplishment	4 Knowledgeable	5 100m sprint 16:07 sec spiritual	6 hopscotch & other children's games energetic	7 relaxed
8 P.E. Fitness Latin dancing session calm & relaxed	9 Nervous	10 4km Kersnay run (cross country) 23 mins Fit & fresh	11 Exhausted	12 Edgy (sick)	13 (bronchial pneumonia) (sick) lethargic	14 (sick) conjested
15 (sick) can't concentrate really tired	16 Want to get back into life. Back to school	17 Frustrated as I can't run & that means I can't do zonal trials	18 Really busy got an exam 2moro	19 Excited because I am getting new Latin shoes	20 Climbing the rock-gateway Morning: tired Night: giggly	21
22 Course	23 Hockey	24 Swimming	25 Swimming	26	27	28
29 Latin dancing (45 mins) Psyched!	30	31				

June 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
			1	2	3	4 KZN touch rugby trials (4 hours) certain but exhausted
5 sick	6 sick	7 Sick (exams)	8 exams	9 exams	10	11 KZN touch rugby (2 hours) Accomplishment

12 Latin dancing (45 mins) A cut abose the rest	13	14	15	16 Social, causal dancing (4 hrs) Happily exhausted	17 Touch rugby with the church boys (1 hr) triumphant	18 KZN touch rugby (2 hours) energetic
19 Latin dancing (45 mins) Excited	20	21 Studying lest exam tomorrow excited	22	23	24	25 Natal touch prac 2hrs
26 Latin dancing 45 mins	27	28	29	30		

July 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1	2 Natal touch prac 2hrs
3	4	5	6 Natal touch prac 2 hrs	7	8	9 Natal touch prac 2 hrs
10 Latin dancing 45 mins	11	12	13 Natal touch prac 2 hrs	14	15 Super touch tournament both	16 sixes rugby the whole day days
17 Latin dancing 45 mins sore	18	19	20	21	22	23 Break from touch
24 Latin dancing 45 mins	25	26	27	28	29	30 Break from touch
31 P.E. Beep test level 10 Satisfied						

August 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	1	2	3	4	5	6 Natal touch prac 2 hrs Out of practice
7 Latin dancing 45 mins was incredible P.E. 50 mins walking	8 Sports day! 800m-1st 100m-4th time 16:90	9	10	11	12	13 Natal touch prac 2 hrs Much better
14 Latin dancing 45 mins Professional	15	16	17	18 Faith	19 Builder YAY	20 Conference

21	22	23	24 My birthday!	25	26	27
28	29	30	31			

September 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

October 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

November 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

December 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

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Daily Schedule

Participant A 10 Experimental group

Please keep a detailed record of all training, learning experiences and emotions per week over the season.

April 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	25	26 Hockey match	27 Public holiday	28 Run-tired	29	30

May 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1 Public holiday	2	3 Tennis-good	4 Hockey-ok	5	6	7
8 Tennis-good	9	10 Tennis-fun	11 Hockey match-fun	12	13 Swim/hockey-relaxed	14
15	16 Hockey	17 Tennis	18 Hockey	19	20	21
22	23 Hockey	24 Tennis	25	26 Swim	27	28
29	30 Hockey	31 Tennis				

June 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
			1 Hockey game	2 Hockey game	3	4
5	6 Hockey	7 Tennis	8 Exams	9	10	11
12	13	14	15	16 Public holiday Run	17	18
19	20	21	22	23 Exams end	24	25
26	27	28	29	30		

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July 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

August 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	1	2	3	4	5	6
7	8 Athletics day	9 Public holiday	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

September 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17

18	19	20	21	22	23	24
25	26	27	28	29	30	

October 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

November 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

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December 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

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Daily Schedule

Participant A 13 Experimental group

Please keep a detailed record of all training, learning experiences and emotions per week over the season.

April 2006

Feeling good this week. Nothing to be sad about

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Swimming	25	26 Hockey game	27	28	29	30

May 2006

Been quite down this week

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	2	3 Swimming	4 Swimming	5 Running time trial	6	7
8 Course	9 Softball	10 Swimmimg	11 Hockey game/swimmimg	12	13 Hockey game	14
15 Course	16 Hockey	17 Run/Swimming	18 Hockey/Swimming	19	20	21
22 Course	23 Hockey	24 Swimming	25 Swimming	26	27	28
29	30	31				

June 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Very tired this week			1 Gym/Walk from school - Varsity College/Hockey game	2 Hockey game	3	4
5 Course	6	7	8	9	10	11
12 Course	13 Swimming	14	15 Swimming	16	17	18
19 Swimming	20 Swimming	21 Swimming	22	23	24	25
26	27	28	29 Swimming	30 Swimming		

July 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

August 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

September 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24

25	26	27	28	29	30	

October 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

November 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

December 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1	2	3

4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Daily Schedule

Participant A 7 Experimental group No daily schedule returned

Participant A 9 Experimental group No daily schedule returned

Participant A 11 Experimental group No daily schedule returned

Participant A 12 Experimental group No daily schedule returned

Appendix FF

Control group T1 What does psychological well-being mean to you?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: It means being one with your mind in order to control your body.

Participant A 6: Being stable in your mind.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: That you have a positive mind

Control group T1 What does psychological skills training mean to you?

Participant A 1: They train the way you think about competing & ur train of thought, they help you improve you skills.

Participant A 2: To explain your understanding of physical & mental skills.

Participant A 5: Same as above (It means being one with your mind in order to control your body.)

Participant A 6: Learning how to be stable in your mind when under pressure.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Training your mind to reach goals that you have set for yourself.

Control group Pre-session: What does physiological arousal mean to you?

Participant A 1: Not completed

Participant A 2: Have no clue

Participant A 5: Not completed

Participant A 6: How you are at the time.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Have no clue

Control group Post-session: What does physiological arousal mean to you now?

Participant A 1: Not completed

Participant A 2: To have control, discipline, to control your breathing and relaxation.

Participant A 5: Not completed

Participant A 6: Bringing yourself into the middle of the zone of optimal functioning creating a balance between anxiety & being so relaxed.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: It means being able to control your zone of optimal function and control your heart rate & breathing rate.

Control group Physiological arousal: how did you experience the session?

Participant A 1: Not completed

Participant A 2: Fantastic experience. Helped me a lot in my cases.

Participant A 5: Not completed

Participant A 6: It was very interesting and helpful to sue not only in sport, but other things too.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: It was very nice and I learnt a lot of thing e.g. relaxation, breathing

Control group Pre-session: What does cognitive arousal mean to you?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: I don't know

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: I have no idea

Control group Post-session: What does cognitive arousal mean to you now?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: It is mind imagery so you focus on positive thoughts & relax to perform your best.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Is being able to stop negative thoughts and change them to positive thoughts by telling your brain to stop the thought you. It also deals with meditation.

Control group Cognitive arousal: how did you experience the session?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: It was useful and can be used in lots of things. It was helpful to know how to clear negative so you can do your best.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: It was interesting and I learnt a lot how to control my thought in order for me to perform well.

Control group Pre-session: What does mental imagery arousal mean to you?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: Making plans & picturing what you are going to do.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Imagery is when you visualize something in our mind something that will happen.

Control group Post-session: What does mental imagery arousal mean to you now?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: Picturing the game in your mind & planning how you want it to be so you can perform better & are more relaxed.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Imagery is visualizing a sport move or something and actually using that by applying what they have visualized in they brain.

Control group Mental imagery: how did you experience the session?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: It was weird to watch yourself because you can see your mistakes so it was also very helpful & useful.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: It was very interesting.

Control group Pre-session: What does attention and concentration mean to you?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: How much you are focused on what you are doing.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: It's focusing and concentrating and doing well in what you do.

Control group Post-session: What does attention and concentration mean to you now?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: Attention I show & alert you are now and concentration is ho focus you are for the whole race.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Is being able to concentrate and focus on things and be able to shut any distraction. Also being able to shift your focus from one place to another.

Control group Attention and concentration: how did you experience the session?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 7: It was hard concentration on finding the numbers & staying focused. The skills were interesting can be used often.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Not completed

Control group Pre-session: What does self-confidence mean to you?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: How good you feel about yourself when doing something.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Not completed

Control group Post-session: What does self-confidence mean to you now?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: Believing that you are good enough to de well and achieve.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Not completed

Control group Self-confidence: how did you experience the session?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: It showed me how important it is to be confident and what it can do to help you. it was very useful as well.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Not completed

Control group Pre-session: What does goal-setting and motivation mean to you?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: Setting things that you want to achieve & encouraging yourself to achieve them.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Not completed

Control group Post-session: What does goal-setting and motivation mean to you now?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: Achieving things you set out to do and completing them but being realistic about the goal you set.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Not completed

Control group Goal-setting and motivation: how did you experience the session?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: Helped to set realistic goals and how to go about achieving them. Interesting & useful for other things not only sport.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Not completed

Control group T2 What does psychological well-being mean to you?

Participant A 1: Being confident about yourself

Participant A 2: To be a dedicated hard working person.

Participant A 5: Not completed

Participant A 6: I don't know

Participant A 15: Don't know at all

Participant A 16: Being confident with myself.

Participant A 17: Being mentally healthy

Control group T2 What does psychological skills training mean to you?

Participant A 1: Being able to each your goals.

Participant A 2: It means to apply myself completely.

Participant A 5: Not completed

Participant A 6: Learn skills that you can use in your mind to help you.

Participant A 15: I think determined your self and to beat and do better every time.

Participant A 16: Being able to tackle all types of experiences in all good way.

Participant A 17: Being able to put your mental abilities into use.

Control group T3 What does psychological well-being mean to you?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: Using your mind to help you do better.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Not completed

Control group T3 What does psychological skills training mean to you?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: Helping you to do better in sport.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Not completed

Control group Since the first assessment how have you experienced your:

1) Autonomy

Participant A 1: I haven't yet

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: I haven't yet.

Participant A 15: I don't know

Participant A 16: I haven't

Participant A 17: Not completed

2) Personal growth

Participant A 1: Im more determined in achieving my goals.

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: I have tried to achieve more things and set more goals.

Participant A 15: I don’t know

Participant A 16: It made me more determined to be more fit.

Participant A 17: Not completed

3) Environmental mastery

Participant A 1: I have mastered my environment relatively well.

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: I have tried harder to fit into the environment. I'm in and take control of the situation.

Participant A 15: I don't know.

Participant A 16: Hasn't affected me yet.

Participant A 17: Not completed

4) Purpose in life

Participant A 1: I have to always try my best in everything I do.

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: I don't know

Participant A 15: To finish school study and become a fashion designer and make my dreams come true.

Participant A 16: To be the best I can be and have confidence in who I am and what I can do.

Participant A 17: Not completed

5) Positive relations with others

Participant A 1: I interact relatively well with other people and Ive loosened up.

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: People say more good things about you and are nicer.

Participant A 15: I like being with people.

Participant A 16: They good ‘competition’ making me want to better myself.

Participant A 17: Not completed

6) Self-acceptance

Participant A 1: I have stated to accept myself & my goals.

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: Being more accepting of myself when I play sport and what I do in sport.

Participant A 16: It's made me accept that I can be good if im more confident in myself.

Participant A 15: I do accept myself.

Participant A 17: Not completed

Control group What was your experience of the psychological skills training group?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: It was interesting to hear what other people thought ad about their moments in sport. It helped to show me how different we are and what we are all good at. They were also helpful because the things they said were tips you could use.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Not completed

Control group Program evaluation

How did you experience the program?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: It was very interesting and useful and I learnt a lot of things that will help me to improve in my sport. I think it is beneficial to the schools because it is so helpful in improving in sport. It was better to do it in a group, because you could hear what other people thought.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Not completed

What did you appreciate about the program?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: I appreciated the fact that we were given notes on all the sessions we did, so we can refer to them. The whole program was appreciated because it is so useful, not only in sport.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Not completed

How did you think the program could be improved?

Participant A 1: Not completed

Participant A 2: Not completed

Participant A 5: Not completed

Participant A 6: Some of the questionnaires could be made shorter. It should not only refer to athletics but to other sports as well.

Participant A 15: Not completed

Participant A 16: Not completed

Participant A 17: Not completed

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Daily Schedule

Participant A 6 Control group

Please keep a detailed record of all training, learning experiences and emotions per week over the season.

April 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	25 Hockey trials 3-5 pm excited nervous	26 Hockey	27 Body boarding	28	29	30

May 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	2 Hockey	3	4	5 Running	6 Hockey match	7
8	9	10 Hockey	11	12	13 Hockey match	14
15	16	17 Hockey	18 Hockey	19	20 Hockey match	21
22	23	24	25 Hockey	26	27 Hockey match	28
29	30	31 Hockey				

June 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
			1 Hockey match	2 Hockey match	3	4
5	6	7	8 Hockey practise	9	10 Hockey match	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

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July 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1	2
3 3km hike fun	4 15km like Mentally challenging/amazement thrilled	5 6km hike Exciting/happy	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24 Beep test (7) Exhausted/not excited	25	26 Tennis 1 hr Fun/enjoyed	27	28	29	30
31 Tennis 1 hr						

August 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	1 Athletics	2 Tennis 1& half hr	3	4	5	6
7 Walked 2100m Tennis 1& half hr	8 Athletics day ran Nervous/excited	9	10	11	12	13
14	15	16	17	18	19	20
21 Walked 1850m	22	23 Tennis 1& half hrs	24	25	26 Pilates	27
28 Tennis	29	30	31			Pilates

September 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1	2	3 Pilates 1 hr Fun
4 Tennis 1 & half hrs	5	6 Pilates 45min	7	8 Walked 2 km	9	10

11 Tennis 1 & half hrs	12	13 Tennis 1 & half hrs	14	15	16 Pilates 1 hr	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

October 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

November 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

December 2006

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Daily Schedule

Participant A 1 Control group No daily schedule returned

Participant A 2 Control group No daily schedule returned

Participant A 5 Control group No daily schedule returned

Participant A 15 Control group No daily schedule returned

Participant A 16 Control group No daily schedule returned

Participant A 17 Control group No daily schedule returned

Appendix GG

Cricket player and swimmer T1 What does psychological well-being mean to you?

Participant B 18: Being at ease with who you are and deal with issues well.

Participant B 19: Having a balance in my life, being able to cope with situations and to be able to trust in my own abilities.

Cricket player and swimmer T1 What does psychological skills training mean to you?

Participant B 18: Honing your mind & body to perform better.

Participant B 19: Learning about how best to use my mind to help with performance.

Cricket player and swimmer Pre-session: What does physiological arousal mean to you?

Participant B 18: Body reactions to certain activities.

Participant B 19: Setting your body into a state where in optimal performance can occur-the feeling of anticipation and readiness to compete: e.g. heart rate increasing,

feeling strong and energetic but also relaxation. At a point where you can use the tension created in order to compete.

Cricket player and swimmer Post-session: What does physiological arousal mean to you now?

Participant B 18: Performing at my best level, knowing how muscles react.

Participant B 19: Regulation of physical state. Can be effected by emotional states/motivation. A useful tool where you know how to regulate it in order to get into zone of optimal functioning.

Cricket player and swimmer Physiological arousal: how did you experience the session?

Participant B 18: Got to optimal performance level by relaxation.

Participant B 19: Helped me to become more aware of my body. Interesting to talk about anxiety/arousal. breathing techniques more useful.

Cricket player and swimmer Pre-session: What does cognitive arousal mean to you?

Participant B 18: My mental approach to my game. I think it determines my doubts. Confidence in ability.

Participant B 19: To be mentally alert and focused (optimal zone)-also on a continuum. Can be affected. Affects physiological arousal.

Cricket player and swimmer Post-session: What does cognitive arousal mean to you now?

Participant B 18: Important role in focusing for event.

Participant B 19: Being able to concentrate and focus on an event or skill in a positive manner. Its about how you are thinking about the race and yourself and your abilities.

Cricket player and swimmer Cognitive arousal: how did you experience the session?

Participant B 18: Enjoyed focus on positive thoughts and stopping negative ones.

Participant B 19: It was great to focus on 1 positive aspect-good feeling physically and also helped to mentally relax, but at the same time become excited and ready to race.

Cricket player and swimmer Pre-session: What does mental imagery arousal mean to you?

Participant B 18: Mentally honing particular skills.

Participant B 19: The ability/skill which enables toy to picture yourself in a situation or doing a particular thing. It is about experiencing the emotions/physical sensations of that situation as if they were really happening. It is a way to prepare oneself for practice & competition.

Cricket player and swimmer Post-session: What does mental imagery arousal mean to you now?

Participant B 18: Helps performing under pressure situations, so that it feels you have done it all before.

Participant B 19: Similar to pre-session about linking positive emotions and experiences to new experiences, and being able to use this to prepare for competition. Also helps to focus during training.

Cricket player and swimmer Mental imagery: how did you experience the session?

Participant B 18: Found performing skills beneficial as well as an outsider's perspective of myself.

Participant B 19: I really enjoy mental imagery-it helps to relax and feel positive emotions & exciting situations. I like imagining competitions and the ability to compete well.

Cricket player and swimmer Pre-session: What does attention and concentration mean to you?

Participant B 18: Mainlining concentration through task, stark – finish.

Participant B 19: the ability to focus on tasks and on relevant information to be able to scan info/situations and to exclude things that are distractions.

Cricket player and swimmer Post-session: What does attention and concentration mean to you now?

Participant B 18: Focusing in short bursts. Keeps your focus on NB things rather than wasting attention.

Participant B 19: Concentration and attention is about focusing on a task and being able to maintain that focus. it is useful in helping to relax and/or arouse yourself. Must be something that you can control and use when & how you want-otherwise it can become draining.

Cricket player and swimmer Attention and concentration: how did you experience the session?

Participant B 18: Learn to focus on object without being distracted. Switching on & off.

Participant B 19: I get a bit anxious when I know I am being timed at a new task- always feel more confident when I have done something a few times. But I ca see the benefit of conc. & attention in sporting context & how the ability to concentrate is so important.

Cricket player and swimmer Pre-session: What does self-confidence mean to you?

Participant B 18: Believing in your ability & yourself.

Participant B 19: self-confidence is partly a belief in your abilities and talents, that you can meet and deal any challenge/problems. It is also being at ease with yourself/comfortable with yourself/who you are.

Cricket player and swimmer Post-session: What does self-confidence mean to you now?

Participant B 18: Finding happy medium of not being over confident & no confidence.

Participant B 19: Same as pre-session, but also self-confidence is on a continuum and to find that balance is important, especially in sport where success and performance is so important.

Cricket player and swimmer Self-confidence: how did you experience the session?

Participant B 18: realized my self-confidence can improved, to the benefit of my game.

Participant B 19: it was good to think back on some good performances and feel that confidence again at the same time though there is a flip side where you remember not being confident, but with concentration I could focus only on the experience.

Cricket player and swimmer Pre-session: What does goal-setting and motivation mean to you?

Participant B 18: Goal setting- you can assess your progress as you go along. Motivation is what drives you to perform.

Participant B 19: Goal-setting helps you to clarify where you are going and what you have to do to get there. Need long term and short-term goals. Goals shouldn't always be outcome based i.e. don't just focus on a time. Motivation-an inner drive to reach goals-can be intrinsic or extrinsic.

Cricket player and swimmer Post-session: What does goal-setting and motivation mean to you now?

Participant B 18: Setting goals top each specific part of game very worthwhile.

Participant B 19: Goal setting and motivation are so linked. it is very important to write goals down/or discuss them with someone to help clarify them-otherwise same as before session.

Cricket player and swimmer Goal-setting and motivation: how did you experience the session?

Participant B 18: Learnt a lot, great to set goals.

Participant B 19: Did help me to clarify some goals-always helps when you actually have to say them out loud.

Cricket player and swimmer T2 What does psychological well-being mean to you?

Participant B 18: Being able to control what goes on with your performance, and coping with pressures.

Participant B 19: Having a balance in life. It is ability to cope with your everyday life. Having the ability to.

Cricket player and swimmer T2 What does psychological skills training mean to you?

Participant B 18: Having different parts of preparation and during match performance.

Participant B 19: It is training in skills that can help you to train and compete to the best of your abilities in all situations. Mental skills training is about being able to control tour emotions and thoughts in order to perform.

Cricket player and swimmer T3 What does psychological well-being mean to you?

Participant B 18: Being confident & in control of what you do. Also getting yourself in right frame of mind to perform.

Participant B 19: Having the mental and emotional resources to be able to cope with situations & knowing how to use these resources.

Cricket player and swimmer T3 What does psychological skills training mean to you?

Participant B 18: Training mentally for games gives you the edge to make right decision at right time.

Participant B 19: Learning how to use different mental skills effectively in order to train & compete better. It is also about learning that you have the ability to improve your performance.

Cricket player and swimmer Since the first assessment how have you experienced your:

1) Autonomy

Participant B 18: In charge more now of how I react with all around me.

Participant B 19: I feel that I have control over my life.

2) Personal growth

Participant B 18: Grown in respect of my dealing with people, & have leant more about myself.

Participant B 19: I learnt some new things over the past few weeks through this program and at work. I feel that I have had to grow to accommodate this.

3) Environmental mastery

Participant B 18: Am in more control of what goes on around me.

Participant B 19: U feel that in most things I have had mastery over the environment, but there have been times when I have felt a bit overwhelmed.

4) Purpose in life

Participant B 18: Much clearer of what I would like.

Participant B 19: I am happy doing what I am suppose to be doing at present, but do have some concerns about the future & what God wants for my life.

5) Positive relations with others

Participant B 18: Staying calm helps when getting frustrated, learnt better how to deal with potential problems.

Participant B 19: Have great friends!

6) Self-acceptance

Participant B 18: I am accepting who I am better & realized I don't need at act differently to people.

Participant B 19: I am learning to accept all parts of myself, and at the moment I feel that I do like who I am.

Cricket player and swimmer Program evaluation

How did you experience the program?

Participant B 18: Really enjoyed it. Learnt a lot form the different exercisers in each session.

Participant B 19: I enjoyed the program, even though I knew some of the things it is always helpful to talk to someone and to brush up on some mental skills. I also leant some new things. Made me think about the importance of these skills again.

What did you appreciate about the program?

Participant B 18: Appreciated the different facets of the sessions. A lot of my questions were answered.

Participant B 19: It has made me think more about mental skills and how to use them, it also confirmed for me that most of what I have been doing is correct.

How did you think the program could be improved?

Participant B 18: Using it on more people.

Participant B 19: For someone that doesn't know what these skills are it is quite a lot to learn. Follow-ups at regular intervals could be useful to help people with this. I

know it took me a while to get these skills right and I needed someone to help me often.

Appendix HH

Sport psychology expert C 1

I believe that a sport psychologist should be a trained psychologist because psychological skills in sport cannot be separated from everyday life skills. With such an approach it is assumed that psychological skills should contribute to overall psychological well-being.

Sport psychology expert C 2

Sports psychological skills training is generally used as a strategy for enhancing performance, particularly where the performance requires cognitive appraisal and engagement. These skills which include imagery and arousal management and usually are bound to the performance or event. Sometimes more general skills such as goal setting are used that lead up to events and these are more behavioural in orientation.

Definition of well-being - often termed subjective well-being as it is perceptual construct and often associated with life satisfaction (Diener).

My belief is that consideration of the whole athlete is the key to peak performance. Although coaches often aspire to this concept, in practice it is not fully backed up. I

have no evidence apart from exchanges with sport psychologists but believe that generally psychological skills are delivered to enhance performance rather than deal with the psychological welfare of the individual. If they improve performance then success breeds confidence and this indirectly could improve well-being. However, understanding self, encouraging self-determination and autonomy, mastery approaches to improvement are critical and at least in the first stages more concerned with the skills of the coach. A good coach will operate a style whereby athletes experience these positive states and eventually will show athletes how to develop themselves in these terms. In that sense they could be regarded as skills but probably more accurately they should be described as self education.

Sport psychology expert C 3

I have quite a few ideas around this question of yours and I hope that I do not sound that confused. In sport motivation they refer to the inverted-U theory to show the **relationship** between arousal and sport performance. If physical activity is thus the **psychological skills** and **the 'performance' the psychological well-being, there is a defined relationship,** this means that at a certain point (maximal level) any more exercise will lead to burnout, etc. Psychological skills for the athlete is very necessary if all will lead to a better self-esteem, self-actuallization and hence a strong psychological well-being. For this there is definitely a need for well- **trained** educators/ coaches/sport psychologists to be well trained in these skills to the level they are qualified to administer. Skills such as arousal control (progressive relaxation, systematic desensitisation, hypnosis), anxiety, burnout, staleness, injuries, etc. to

name a few. Those athletes who are familiar and treated as such definitely have an advantage over those without the people with that kind of skills.

Sport psychology expert C 4

I think that mental skills have an important role to play in psychological well being. Mental skills' training is about teaching a person to have more control over their thoughts and feelings. Many people feel like their lives, thoughts and feelings are totally out of control and they don't know how to change this situation. By teaching people how to control thoughts and behaviours, I think you are enhancing their sense of well being, mastery and self-esteem. You are giving them practical handles on how to go about changing themselves and coping with life problems. Knowing that you have the inner resources to cope with a situation produces a sense of well being. Mental skills give people access to resources they might not have been aware that they had.

Also there is a lot of research showing that a positive mental attitude can buffer against stress and depression – by teaching people how to control their mental attitude, focus on the right things and cope with anxiety, you are helping them reduce stress and the myriad of problems associated with it. Being able to relax yourself and calm your mind are essential tools to enhance psychological well being.

Sport psychology expert C 5

You have asked for my views on the relationship between psychological skills and

psychological well-being in the context of psychological skills training with youth athletes.

The question seems to have many aspects to it. I am not sure whether my answer should be mainly experiential or conceptual. However as terms and concepts are formed from experience I will try to include both conceptual and experiential aspects in my answer, beginning conceptually and continuing experientially for the sake of clarity.

It is helpful to keep instructional, knowledge and relevancy key words in mind when analyzing any question. The instructional keywords request an answer that is experiential and descriptive, the knowledge keywords are contained individually and collectively in such terms as ‘psychological’, ‘well-being’, ‘skills’ ‘training’ and ‘youth athletes’, and the relevancy keywords request an answer on a specific relationship between concepts in a particular referential context.

The question is complicated by the fact that answers are sought to a relationship between different sorts of concepts, which can be subsumed under two second order concepts of ‘psychology’ and ‘athletics’ and will to some extent depend on one’s definition of these terms. By psychology I understand an original study of the all that is connotated by the terms “psyche’ as well as a modern scientific discipline ,spawned from philosophy and physiology, with its focus on human behaviour, experience and relationships. ‘Youth athletes’ would presumably be concerned mainly with primary and secondary educational youth sports and exercise, particularly track and field events and therefore more individualistic than team orientated.

By different sorts of concepts I understand psychological skills to refer to naturally occurring behaviours and psychological skills training to refer to a programme or package that is psychologically orientated and concerned with the training of skills such as arousal control, imagery, goal setting, concentration and confidence. Skill acquisition implies some developmental and/or learning process such as riding a bicycle, involving increasing competence in particular behavior becomes usually learned in conscious chunks which become automatic and grooved as skill levels improve. Psychological well-being presumably refers rather to some changing state of positive mental health. So we are concerned with an answer concerning youth athletics involving a relationship between program, process and state variables.

It is helpful to interrogate any question to gain some idea of the assumptions/philosophy/morality/dynamics behind the question. Why is the question asked? Why is this knowledge needed? What are the primary motivations? Are the reasons scientific, conceptual, experiential, practical, personal? Is the main goal to explicate the concepts, improve youth sport in terms of health, performance or both? Are we concerned with scientific, basic, applied, quantitative, and/or qualitative research? What moral values and ethical principles are involved? Assuming inclusive, holistic, scientific, research, health and performance orientated motivations are the focus of the study, is the methodology mainly correlational as implied in the term “relation” or inferential in the concern with the effect of an independent process variable such as skills training on a state such as wellbeing? Have the main concepts been operationally defined as is the usual case in positivistic, quantitatively oriented behavioural research or are they more elastic as required in the flow of qualitative

orientated research? To what extent do the concepts overlap? Is wellbeing a skill? Is imagery a state?

The Yerkes Dodson law and Progogine's transformational theory state that health and performance can increase up to an optimal point following which there will be diminishing returns. Is there an optimal level of psychological skills training in relation to other components, physical, social, spiritual? Where does one draw the line? What sort of boundaries, if any, exist and or need to be postulated between psychological, physical and spiritual skills. Presumably some level of well-being and ability is needed for skills training. How conscious and/or verbal is the process? What about such nonverbal energetic, felt sense, organic factors?

If psychological skills are naturally occurring behaviours such as arousal, concentration and imagination that can be learned, what are the necessary, sufficient, optimal, contextual conditions for learning such skills? The answer also depends on whether we also view well-being as a form of skill.

An inclusive/integral/relational answer is based on the assumption that psychological wellbeing itself is a form of psychological skill that includes such traditional objective dimensions as autonomy and self-acceptance as well as more subtle dimensions as breathing, gesturing, sensing, valuing, ordering, balancing, prioritizing values, etc

Concerning the assumption that the state of psychological wellbeing is a dependent variable to be promoted through psychological skills training, from an experiential point of view, I know that the more competitive I become while using various skills

the more vulnerable I become to obsessive training, perfectionistic mindsets with the result that well-being tends to diminish, and indeed injury can occur, unless I re-order values, priorities etc. I have observed similar patterns in friends and persons I have coached, so it seems important to train values, life and health skills, as well as performance skills, which include the fun factor. On the other hand, it is an experiential, health orientated, psychological well-being skill to exercise to the point of optimum enjoyment in order to experience energy flow and the afterglow of psychological well-being that runs through the body/mind,/soul/spirit – probably also related to various other psychological dimenions such as runners high, physical dimensions related to neurochemicals like serotonin and endorfins, social dimensions such as team spirit and spiritual dimensions such as the transcendent experience of running to the breath and glory of God. From a more grounded, phenomenological perspective, whether a top or weekend athlete, the body does not lie and listening to its music is a life priority.

A holistic, balanced approach will also have optimum benefits for people in general, most of whom are not, and do not aspire to be, top athletes, exercise irregularly and live increasingly sedentary lifestyles. The focus is therefore on teaching psychological skills and wellbeing as life skills to channel human destructiveness into creativity, to develop society and all peoples of planet earth. In this way sport may realize its truest values as well as promote human evolution and spiritual development. One can think of many other aspects of the relationship between psychological skills and psychological wellbeing, which could be demonstrated further with Ven diagrams, graphs and experiential anecdotes, but this should suffice for my answer at present. I am happy to provide further information if needed.