

# **Sport psychological skills profile of 14- and 15-year old sport participants in Tlokwe Municipality: the PAHL-Study**

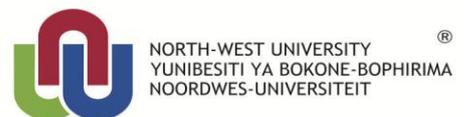
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Dissertation submitted in fulfillment of the requirements for the degree Master of Arts in Sport Science at the Potchefstroom Campus of the North-West University

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It all starts here™



# Foreword

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I would like to express my sincere gratitude to the following:

My heavenly Father for blessing me with the strength and willpower to take on the different challenges everyday presented.

Dr. Ankebé Kruger, my supervisor, for the valuable contributions, guidance, advice, patience and support throughout this study. Words can't express my appreciation.

Prof. Johan Potgieter, my co-supervisor, for his input, guidance and valuable contributions to this study.

Lorna Keough for the excellent language editing.

My family and friends for all your love, interest, encouragement and understanding throughout this study.

# Declaration

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This dissertation serves as fulfillment of the requirements for the degree Magister Artium in Sport Science at the Potchefstroom campus of the North-West University. The co-authors of the two articles, which form part of this dissertation, Dr. Ankebé Kruger (supervisor), Prof. Johan Potgieter (co-supervisor) and Prof. Andries Monyeki (co-author), hereby give permission to the candidate, Miss. Elsnet du Plessis to include the two articles as part of a Masters dissertation. The contribution (advisory and supportive) of these two co-authors was kept within reasonable limits, thereby enabling the candidate to submit this dissertation for examination purposes.

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# Summary

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## **Sport psychological skills profile of 14- and 15-year old sport participants in Tlokwe Municipality: the PAHL-Study**

The importance of sport psychological skills (SPSs) is emphasised by numerous previous literature findings which show that the integration of SPSs with physical training leads to the development of adolescent sport participants and subsequently the enhancement of sport performance. A vast number of SPSs exist that could have an influence on a sport participant's performance. In order to efficiently develop the SPSs of sport participants it is important to acknowledge their specific individual needs. Furthermore, gender and the type of sport also play an integral role in participants' use of SPSs. The main purpose of the present study was firstly to determine which SPSs discriminate significantly between male and female adolescents in a South African context, and secondly to determine which SPSs discriminate significantly between individual and team adolescent sport participants in a South African context. A convenience sample of 211 grade 9 pupils (14-15 years of age) from six different primary schools, two from a high socio-economic background, Potchefstroom city area, and four from a low socio-economic background, Ikageng Township area, were included in the study. Participants completed the Physical Activity and Training Habit questionnaire as well as the Athletic Coping Skills Inventory-28 (ACSI-28) questionnaire under the supervision of a sport psychological consultant.

The results from the first purpose of this study showed non-significant differences between the SPSs of the males and the females, where the males obtained slightly higher averages in seven of the eight psychological skill variables compared to the females. Only one SPS variable (freedom from worry), however, showed a statistically significant difference where the males obtained a higher average value than the females.

The results from the second purpose showed that individual sport participants (ISPs) obtained higher mean scores in seven of the eight SPSs that were measured compared to team sport participants (TSPs). However, none of the subscale differences proved to be statistically significant, with a small practical significance.

In conclusion it is clear that 14-15 year old adolescent sport participants showed similar tendencies regarding their SPSs than what was found in other studies. However, the differences in our study population have not yet reached significant levels and therefore the sport participants can be treated as a homogeneous group when psychological skills training (PST) programs are applied.

The findings can contribute to a better understanding of the SPS use of sport participants from different genders, sporting codes and the development of PST programs of the different sport participants, which could assist coaches in the holistic development of adolescent sport participants.

**Key words:** adolescents, gender, participation, profile, psychological skills, sport

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# Opsomming

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## **Sportpsigologiese-vaardigheidsprofiel van 14- en 15-jarige sportdeelnemers in die Tlokwe Munisipale gebied: die PAHL-Studie**

Die belangrikheid van sportpsigologiese vaardighede (SPV) word beklemtoon in verskeie vorige studies, wat aandui dat die integrasie van SPV met fisiese afrigting tot die ontwikkeling van adolessente sportdeelnemers en gevolglike beter sportprestasie lei. 'n Groot aantal SPV bestaan, wat 'n invloed kan hê op die prestasie van 'n sportdeelnemer. Ten einde die SPV van sportdeelnemers effektief te ontwikkel, is dit belangrik om erkenning aan hul spesifieke behoeftes te gee. Geslag en die tipe sport speel ook 'n integrale rol in sportdeelnemers se beruik van SPV. Die hoofdoel van die huidige studie was eerstens om te bepaal welke SPV tussen manlike en vroulike adolessente in 'n Suid-Afrikaanse konteks diskrimineer, en tweedens om te bepaal welke SPV tussen adolessente individuele en spandeelnemers in 'n Suid-Afrikaanse konteks diskrimineer. 'n Studie is gedoen onder 211 graad 9 leerders (14-15 jaar oud) uit ses verskillende laerskole, wat ingesluit het twee uit 'n hoë sosio-ekonomiese agtergrond, Potchefstroom stadsgebied, en vier uit 'n lae sosio-ekonomiese agtergrond, Ikageng Dorpsgebied. Sportdeelnemers het die Fisieke aktiwiteit en Oefen gewoonte vraelys sowel as die *Athletic Coping Skills Inventory-28 (ACSI-28)*-vraelys onder toesig van 'n Sportpsigologiese-konsultant voltooi.

Die resultate van die eerste doelwit van die studie het minder belangrike verskille aangedui tussen die SPV van die manlike en vroulike sportdeelnemers, waar die manlike sportdeelnemers effens hoër gemiddeldes behaal het in sewe uit die agt psigologiese vaardigheidsveranderlikes teenoor die vroulike sportdeelnemers. Slegs een SPV-veranderlike (vryheid van bekommernis) het 'n statisties belangrike verskil getoon, waar die manlike sportdeelnemers 'n hoër gemiddelde waarde as die vroulike sportdeelnemers behaal het.

Die resultate van die tweede doelwit van die studie het aangedui dat individuele sportdeelnemers (ISD) 'n hoër telling behaal het in sewe uit die agt SPV, vergeleke met spandeelnemers (SSD). Geen sub-skaalverskille was egter van statistiese belang nie, met slegs 'n lae vlak van praktiese belang.

Ter opsomming is dit duidelik dat 14- tot 15-jarige adolessente sportdeelnemers soortgelyke neigings ten opsigte van hul SPV het as wat in ander studies bevind is. Die verskille in ons studie het egter nog nie betekenisvolle vlakke bereik nie en die sportdeelnemers kan dus beskou word as 'n homogene groep wanneer sportpsigologiese vaardigheids opleidings programme (SPVOP) toegepas word.

Die bevindinge kan bydra tot 'n beter begrip van die SPV-gebruik van sportdeelnemers van verskillende geslagte, sportkodes en die ontwikkeling van SPVOP van die verskillende sportdeelnemers, wat afrigters kan help met die holistiese ontwikkeling van adolessente sportdeelnemers.

**Sleutelwoorde:** adolessente, geslag, deelname, profiel, psigologiese vaardighede, sport

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# Table of Contents

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• Foreword	i
• Declaration	ii
• Summary	iii
• Opsomming	v
• Table of contents	vii
• List of tables	xi
• List of figures	xii
• List of abbreviations	xiii

## Chapter 1

### Introduction

1.1 Problem statement	2
1.2 Objectives	5
1.3 Hypotheses	5
1.4 Structure of the dissertation	5
1.5 References	6

## Chapter 2

### A literature overview: Sport psychological skills profile of sport participants

2.1 Introduction	9
2.2 Terminology	11
2.3 Sport psychological skills profile of sport participants	12
2.4 The most common sport psychological skills in sport	14
2.4.1 Anxiety control	14
2.4.2 Concentration	16
2.4.3 Self-confidence	18

---

2.4.4	Goal setting	19
2.4.5	Imagery	20
2.4.6	Motivation	20
2.5	The relationship of gender and the sport psychological skills profile of sport participants	21
2.6	The relationship of the type of sport and the sport psychological skills profile of sport participants	22
2.7	Conclusion	23
2.8	References	24

## **Chapter 3**

### **Gender differences in the sport psychological skills profile of adolescent sport participants**

3.1	Author information	30
3.2	Abstract	31
3.3	Introduction	31
3.4	Method	33
3.4.1	Design	33
3.4.2	Participants	33
3.4.3	Procedure	33
3.4.4	Data collection	33
3.4.5	Statistical analysis	34
3.5	Results	34
3.6	Discussion	36
3.7	Conclusion	40
3.8	References	41

## **Chapter 4**

### **Sport psychological skills that discriminate between individual and team sport participants**

4.1	Author information	45
4.2	Abstract	46
4.3	Introduction	46
4.4	Method	48
4.4.1	Design	48
4.4.2	Participants	48
4.4.3	Procedure	48
4.4.4	Data collection	49
4.4.5	Statistical analysis	49
4.5	Results	50
4.6	Discussion	51
4.7	Conclusion	54
4.8	References	55

## **Chapter 5**

### **Summary, conclusion, limitations and recommendations**

5.1	Summary	59
5.2	Conclusions	61
5.3	Limitations	62
5.4	Recommendations	62

## **Appendices**

Appendix A:	Ethical approval	65
Appendix B:	Informed consent	67
Appendix C:	Questionnaires: Physical activity	70
	Questionnaires: Athletic coping skills inventory (ACSI-28)	74

Appendix D: Guidelines for authors: Journal of adolescent research	80
Guidelines for authors: Journal of Psychology in Africa	82
Appendix E: Proof of language editing	85

---

# List of Tables

---

---

## Chapter 2

---

---

**Table 2.1:** Summary of SPSs, type of sport and subjects from various studies. 13

---

---

## Chapter 3

---

---

**Table 3.1:** Descriptive statistics of the test variables for the male and female 14 – 15-year old sport participants. 35

**Table 3.2:** Descriptive statistics, gender comparison and effect size of the test variables for the male and female 14 – 15-year-old sport participants. 36

---

---

## Chapter 4

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---

**Table 4.1:** Descriptive statistics, independent t-test and effect size results of the test variables for the adolescent sport participants. 50

---

# List of Figures

---

## Chapter 2

---

<b>Figure 2.1:</b>	Sport psychological tools to develop sport psychological skills.	11
<b>Figure 2.2:</b>	Individualised zones of optimal functioning (IZOF).	15
<b>Figure 2.3:</b>	The choking process.	17
<b>Figure 2.4</b>	The inverted U illustrating the confidence-performance relationship.	18

---

## Chapter 3

---

<b>Figure 3.1:</b>	A visual representation of the SPSs profile of 14 – 15-year-old sport participants.	35
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# List of Abbreviations

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<b>SPSs</b>	Sport psychological skills
<b>SPS</b>	Sport psychological skill
<b>TSPs</b>	Team sport participants
<b>ISPs</b>	Individual sport participants
<b>TID</b>	Talent identification and development
<b>SPTs</b>	Sport psychological tools
<b>SPT</b>	Sport psychological tools
<b>IZOF</b>	Individualized zone of optimal functioning
<b>PAHL-Study</b>	Physical Activity and Health Longitudinal Study
<b>ACSI-28</b>	Athletic Coping Skills Inventory-28
<b>N</b>	Subjects
$\bar{x}$	Sample mean
<b>SD</b>	Standard deviation
<b>Min</b>	Minimum
<b>Max</b>	Maximum
<b>p=values</b>	Probability values
<b>ES</b>	Effect size
<b>PST</b>	Psychological skills training

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# Chapter 1

## Introduction

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# 1 Introduction

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- 1.1 Problem statement
  - 1.2 Objectives
  - 1.3 Hypotheses
  - 1.4 Structure of the dissertation
  - 1.5 References
- 
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## 1.1 Problem statement

Sport participation in South Africa plays a significant role in the well-being of youth (Malebo *et al.*, 2007:189). Fraser-Thomas and Côté (2006:12) stated that youth sport may lead to the development of adolescents in three different aspects. Firstly, physical activity promotes physical health. Secondly, youth sport provides the opportunity to learn life skills that include co-operation, discipline, leadership and self-control. Thirdly, adolescents participating in youth sport learn motor skills which form the foundation for sport participation later on in life.

The universal motives for adolescents participating in sporting activities include fitness, fun and the improvement of technical skills (Sit & Linder, 2005:606). According to Elferink-Gemser *et al.* (2004:1053), to develop a successful sporting career, sport participants must exhibit good technical, tactical, physiological, anthropometric and psychological characteristics. Furthermore, Katsikas *et al.* (2009:30) and Raglin (2001:876) emphasised the importance of sport psychological skills (SPSs) in the achievement of sport performances. According to Van den Heever *et al.* (2007:110), SPSs are being recognised as a significant contributing factor to a sport participant's success during competition.

According to Taylor (1995:340), sport participants possess a unique set of SPSs that could help them to improve their sporting ability. Different aspects can exert an influence on a sport participant's performance, for example, team or coaching variables and social support issues (Katsikas *et al.*, 2009:30). It is therefore important to understand a sport participant's specific needs in order to efficiently develop their SPSs profile for the enhancement of sport performance (Taylor, 1995:342). McCarthy *et al.* (2010:158) reported that SPSs can be divided into different components such as motivation, self-confidence, arousal control and interpersonal skills. Taylor

(1995:339) also includes constructs such as management of anxiety, goal setting, concentration, progressive relaxation, activation, focusing, positive thinking and mental imagery. It is clear that different sporting codes require different SPSs.

Several studies (Andrew *et al.*, 2007:322; Kruger, 2010:243; Taylor, 1995:349; Thelwell & Greenlees, 2001:138; Van den Heever *et al.*, 2007:118) have investigated SPSs in different sporting codes. Van den Heever *et al.* (2007:118) found that self-confidence, mental rehearsal and peaking under pressure are significant SPSs found among successful netball players ( $19.08 \pm 1.68$  years). Successful rugby players ( $18.79 \pm 0.28$  years) reveal SPSs such as goal directedness, activation control, concentration, mental rehearsal, achievement motivation and self-confidence (Andrew *et al.*, 2007:322). Kruger (2010:243) found that successful student hockey players ( $21.42 \pm 1.36$ ) are characterised by SPSs such as fear control, achievement motivation, goal directedness and goal setting. With regards to tennis, self-confidence and motivation are a necessity to provide consistency throughout the match, whereas golfers need high levels of concentration (Taylor, 1995:349). Thelwell and Greenlees (2001:138) found that successful triathlon athletes (20-32 years old) exhibit SPSs such as goal setting, relaxation, imagery and self-talk. The above-mentioned literature clearly indicates that different sporting codes require different SPSs.

Gender is acknowledged as a significant interpersonal aspect in sport (Katsikas *et al.*, 2009:31). According to Elferink-Gemser *et al.* (2003:89), different SPSs are used depending on the gender of the sport participant participating in the sport. Jones *et al.* (1991:1) noted that female sport participants are more goal orientated and focus more on personal goals and standards whereas male sport participants tend to be more win-orientated and focus more on interpersonal comparison and competitiveness. Research findings also indicated that female sport participants exhibit more cognitive anxiety and lower self-confidence than their male counterparts (Gallucci, 2008:387; Katsikas *et al.*, 2009:31). In addition, Elferink-Gemser *et al.* (2003:95) indicated that male sport participants outscored female sport participants in confidence, anxiety control and mental preparation, whilst female sport participants outscored male sport participants with regards to concentration. In view of the above-mentioned research findings, the differences found between male and female sport participants need to be taken into account when working with sport participants. Another factor that might exert an influence on psychological skills in sport is the nature of the sport in which the individual participates (Taylor, 1995:345).

Sport, be it a team or individual sport, possesses unique physical, technical and logistical demands that will require different SPSs (Taylor, 1995:345). With regards to SPSs and the type

of sport, Elferink-Gemser *et al.* (2003:94) found that team sport participants (TSPs) score higher on anxiety control and motivation, while individual sport participants (ISPs) score higher on concentration, mental preparation and confidence. Elferink-Gemser *et al.* (2003:94) concluded that ISPs function in better environmental circumstances for mental preparation and concentration than TSPs do. Nicholls *et al.* (2007:1528) substantiates that ISPs use emotion-focused coping methods like imagery, relaxation and self-blame where TSPs will use communication more often. Upon reflection of the above-mentioned literature, it is clear that the nature of sport exerts an influence on the SPSs of sport participants.

Participation in sport plays a crucial role in the development of adolescents; it often develops positive peer relationships, leadership skills and a sense of initiative (Fraser-Thomas & Côté, 2006:13). Literature also indicates that SPSs play an integral role in the motive for participation and the enhancement of physical well-being (Katsikas *et al.*, 2009:30). It is therefore important to consider all the factors that influence the well-being of adolescents. Although a substantial amount of research examined the SPSs used by elite adult sport participants by means of comparing more and less successful sport participants (Andrew *et al.*, 2007:322; Kruger, 2010:243; Meyers *et al.*, 1999:1; Thelwell & Greenlees, 2001:138; Van den Heever *et al.*, 2007:118), limited research exists with regards to the SPSs employed by adolescents participating in sport. To our knowledge, no study has been conducted with regards to 14- and 15-year old sport participants in South Africa.

It is in view of this limited research on SPSs of adolescent sport participants that the following research questions are posed: Firstly, what SPSs discriminate between male and female adolescents in a South African context? Secondly, what SPSs discriminate between individual and team adolescent sport participants in a South African context? Answers to these research questions can contribute to the development of SPSs profiles of sport participating adolescents, which would be of great value to sport psychology consultants to ensure a better understanding of adolescent sport participants. Such answers would also help to identify strengths and weaknesses in adolescent sport participants' SPSs, which could be addressed in advance in order to enhance their weaknesses which might lead to better sport performance. The information regarding the profile of SPSs could also be used in a holistic approach to TID and therefore the development of adolescents participating in sport.

## **1.2. Objectives**

The objectives of this study are to determine:

1. Which SPSs discriminate significantly ( $p < 0.05$ ) between male and female adolescents in a South African context.
2. Which SPSs discriminate significantly ( $p < 0.05$ ) between individual and team adolescent sport participants in a South African context.

## **1.3. Hypotheses**

The study is based on the following hypotheses:

1. The adolescent sport participating males and females will show significantly different SPSs profiles. Males will show significantly higher levels of confidence and coping with adversity, whereas females will exhibit significantly higher levels of concentration and goal setting.
2. Adolescent individual and team sport participants will exhibit significantly different SPSs profiles. TSPs will show significantly higher levels of goal setting and peaking under pressure, whereas ISPs will exhibit significantly higher levels of concentration and self-confidence.

## **1.4. Structure of the dissertation**

The dissertation will be submitted in article format as approved by the Senate of the Potchefstroom campus, North-West University and is structured as follows:

- Chapter 1 consists of the introduction of the study. A reference list is provided at the end of the chapter according to the prescriptions of the North-West University.
- Chapter 2 is a literature overview entitled “Sport psychological skills profile of sport participants”. A reference list is provided at the end of the chapter according to the prescriptions of the North-West University.
- Chapter 3 is a research article entitled “Gender differences in the sport psychological skills profile of adolescent sport participants. This article will be submitted for publication in the *Journal of Adolescent Research*. This article is hereby included according to the specific prescriptions of the journal. The instructions for authors are included as Appendix D (Guidelines for authors). For the purpose of this dissertation, however, the tables were integrated into the manuscripts, the line spacing of the manuscripts was set at one-and-a-half and the first line of a paragraph is not indented.

- Chapter 4 is a research article entitled “Sport psychological skills that discriminate between individual and team sport participants”. This article will be submitted for publication in the *Journal of Psychology in Africa*. This article is included herewith according to the specific prescriptions of the journal. The instructions for authors are included as Appendix D (Guidelines for authors). For the purpose of this dissertation, however, the tables were integrated into the manuscripts, the line spacing of the manuscripts was set at one-and-a-half and the first line of a paragraph is not indented.
- Chapter 5 consists of a short summary, conclusions, limitations and recommendations of the study.

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# Chapter 2

## Literature overview: Sport psychological skills profile of sport participants

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# Literature overview:

# 2 Sport psychological skills profile of sport participants

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- 2.1 Introduction
  - 2.2 Terminology
  - 2.3 Sport psychological skills profile of sport participants
  - 2.4 The most common sport psychological skills in sport
    - 2.4.1 Anxiety control
    - 2.4.2 Concentration
    - 2.4.3 Self-confidence
    - 2.4.4 Goal setting
    - 2.4.5 Imagery
    - 2.4.6 Motivation
  - 2.5 The relationship of gender and the sport psychological skills profile of sport participants
  - 2.6 The relationship of the type of sport and the sport psychological skills profile of sport participants
  - 2.7 Conclusion
  - 2.8 References
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## 2.1 Introduction

Sport psychology is defined as “the application of the knowledge and scientific methods of psychology to the study of people in sport and exercise settings” (Gallucci, 2008:4). This knowledge can contribute to the enhancement of sport performance, health, fitness and enjoyment of sport participants (Gallucci, 2008:4). Several studies emphasised that sport psychological skills (SPSs) are a contributing factor in sport performance (Elferink-Gemser *et al.*, 2003:89; Katsikas *et al.*, 2009:30; Raglin, 2001:876; Slater & Tiggemann, 2011:455; Van den Heever *et al.*, 2007:110). Cox and Liu (1993:326), as well as Brewer (2009:1) substantiate

that the inclusion of SPSs in training and competition can improve an individual's sport performance. Sport psychology is not only applicable to elite athletes, but also to sport participants of all levels of participation, ages, genders and ethnicities (Tod *et al.*, 2010:3). According to Gill (2000:198) the integration of SPSs in sport participation may even be more important during adolescence for obtaining optimal benefits in progress regardless of the sport participants' ambitions. Sport psychology is regarded as beneficial not only in terms of empowering individuals to enhance their sport performance, but also to enrich their lives (Karageorghis & Terry, 2011:2). Fraser-Thomas and Côté (2006:12) stated that sport psychology can provide opportunities for sport participants to learn important life skills that include discipline, leadership, co-operation and self-control.

In addition to the role of sport participation in skills development, it has been found to play an important role in the physical and psychological well-being (Sit & Linder, 2005:606), as well as the development of individuals, especially during adolescence (Malebo *et al.*, 2007:200). According to Randall and Bohnert (2012:107) adolescence is a time of rapid development in an individual's physical, social, intellectual and emotional domains, as well as a period in which adolescents are vulnerable to psychological and social problems. SPSs are extremely valuable during adolescence where individuals also have to learn to cope with adversity in sport participation (Collins *et al.*, 2011:47).

From the above-mentioned literature it is clear that SPSs play an important role in sport participation as well as the sport performance of individuals. The incorporation of SPSs in sport not only empowers sport participants to enrich their lives, but also equip them with important life skills and sport psychological tools (SPTs) which will lead to the enhancement of SPSs use. Various SPTs may be used to enhance different SPSs. Subsequently it was firstly deemed necessary to define and distinguish between these two terms in this literature overview. Secondly, the SPSs profile of sport participants will be described with a specific focus on the most common SPSs used in sport participation. Finally, the relationship between gender and the type of sport and SPSs will be discussed. All the available literature sources on SPSs and sport participation, as well as studies on adolescent and adult sport participants were included, due to limited literature on adolescents.

## 2.2 Terminology

Burton and Raedeke (2008:40) distinguish between SPTs and SPSs. SPTs are used to develop a sport participant's SPSs and each sport psychological tool (SPT) can lead to the enhancement of more than one sport psychological skill (SPS) (Burton & Raedeke, 2008:40). Figure 1 indicates some SPTs namely goal setting, imagery, relaxation and self-talk, that can lead to the enhancement of specific SPSs.



**Figure 2.1:** Sport psychological tools to develop sport psychological skills (Burton & Raedeke, 2008:40).

From Figure 2.1 it is clear that sport participants need to be equipped with the different SPTs in order to develop their SPSs. SPTs can be implemented in a sport participant's physical training program which might lead to the enhancement of SPSs and in turn lead to the enhancement of sport performance. The different SPSs which sport participants exhibit will form the SPSs profile of the sport participant. Subsequently a discussion of the SPSs profile of sport participants will follow.

### 2.3 Sport psychological skills profile of sport participants

It is well known that SPSs play an important role in the enhancement of sport performance (Elferink-Gemser *et al.*, 2003:89; Katsikas *et al.*, 2009:30; Raglin, 2001:876; Slater & Tiggemann, 2011:455; Van den Heever *et al.*, 2007:110). Elferink-Gemser *et al.* (2003:95) found that SPSs can distinguish between more and less successful sport participants with regard to motivation and performance level. Van den Heever *et al.* (2007:120) confirms that SPSs such as peaking under pressure, coping with cognitive state anxiety and self-confidence can be used to accurately discriminate between more and less successful netball players. Katsikas *et al.* (2009:35) found that elite athletes were significantly better than their non-elite counterparts in SPSs such as goal setting, activation, emotional control, imagery and relaxation. In a study by Williams (2010:171) sport participants described their moments of peak performance as characterised by the presence of SPSs like loss of fear, total engagement in the activity, narrow focus, complete control, self-confidence, complete relaxation and that they were highly energised. This combination of various SPSs forms a special state where all aspects of an individual's activity will be in favour of the sport participant (Weinberg & Gould, 2011:150). Csikszentmihalyi (1990) (as cited by Weinberg & Gould, 2011:149) calls this special state the "flow experience", which is characterised by feelings of strength, alertness, effortless control and a lack of self-consciousness, which results in the sport participant performing at the peak of his or her abilities. Various studies emphasise that self-talk, emotional control, goal setting, imagery, activation, relaxation, attention control, self-awareness, trust, motivation, confidence, intensity and concentration are SPSs that relate to sport performance (Taylor, 1995:341; Katsikas *et al.*, 2009:30).

Despite researchers concurring to a large extent regarding the impact of SPSs on sport performance, a considerable degree of variation has been found in sport participants' use of SPSs and their specific psychological needs (Taylor, 1995:304). Taylor (1995:345) further stated that every sport requires specific psychological preparation by sport participants. Sport performance is often impaired when sport participants make use of the wrong SPSs that are not compatible with their specific needs or the sport of participation (Brewer, 2009:2). Therefore, it is of the utmost importance to understand a sport participant's specific needs to enhance the development of a sport participant's SPSs.

From the above-mentioned discussion it is clear that a vast number of SPSs exist that can have an influence on sport participants' performance. The table below reflects a summary, from

various studies, of the SPSs which have been found to lead to the enhancement of sport participants' performance in particular sports.

**Table 2.1:** Summary of SPSs, type of sport and subjects from various studies.

Authors	Type of sport	Subjects	Activation	Anxiety	Concentration	Self-confidence	Goal setting	Imagery	Motivation	Relaxation	Self-talk
Mahoney <i>et al.</i> (1987)	Track, rifle shooting, baseball, gymnastics, lacrosse	Mean age 22.6 ± 5.4 years		X	X	X			X		
Meyers <i>et al.</i> (1999)	Equestrian	Mean age 33.6 ±11.9 years		X	X	X			X		
Junge <i>et al.</i> (2000)	Football	Mean age 18.4 ±4.0 years		X	X	X					
Jackson <i>et al.</i> (2001)	Orienteering, surf life saving, road cycling	Mean age 29.8 ±13.9 years	X				X	X		X	X
Elferink-Gemser <i>et al.</i> (2003)	Field hockey, basketball, volleyball, speed skating, swimming	Mean age 14.8 ±1.5 years		X	X	X			X		
Wang <i>et al.</i> (2003)	Swimming	Mean age 17.8 ±3.0 years					X			X	X
Harwood <i>et al.</i> (2004)	Badminton, rugby union, soccer, field hockey, track and field	Mean age 17.6 ±1.6 years					X	X		X	X
Sheldon & Eccles (2005)	Tennis	Mean age 44 ±10.1 years			X	X	X		X		
Neil <i>et al.</i> (2006)	Rugby union	Mean age 20.3 ±2.9 years	X				X	X		X	X

**Table 2.1 (cont.):** Summary of SPSs, type of sport and subjects from various studies.

Authors	Type of sport	Subjects	Activation	Anxiety	Concentration	Self-confidence	Goal setting	Imagery	Motivation	Relaxation	Self-talk
Van den Heever <i>et al.</i> (2007)	Provincial netball players	Mean age 19.1 ± 1.7 years	X		X	X	X		X		
Katsikas <i>et al.</i> (2009)	Track and field	Mean age 18.9 ± 3.7 years	X				X	X		X	X
Kruger (2010)	Field hockey	Mean age 21.4 ± 1.36 years	X	X	X		X	X		X	
Mouratidis & Michou (2011)	Wrestling, boxing, tae-kwan-do, sailing	Mean age 15.6 ± 2.37 years			X	X			X		
Weissensteiner <i>et al.</i> (2012)	Cricket	Mean age 22.5 ± 2.0 years			X	X	X		X		X

From table 2.1 it is evident that some SPSs appeared in more studies than others. This may indicate the importance of the specific SPSs in sport performance, as well as the influence the type of sport and the age of the sport participants could have on the SPSs. Consequently a discussion of the most common SPSs will follow.

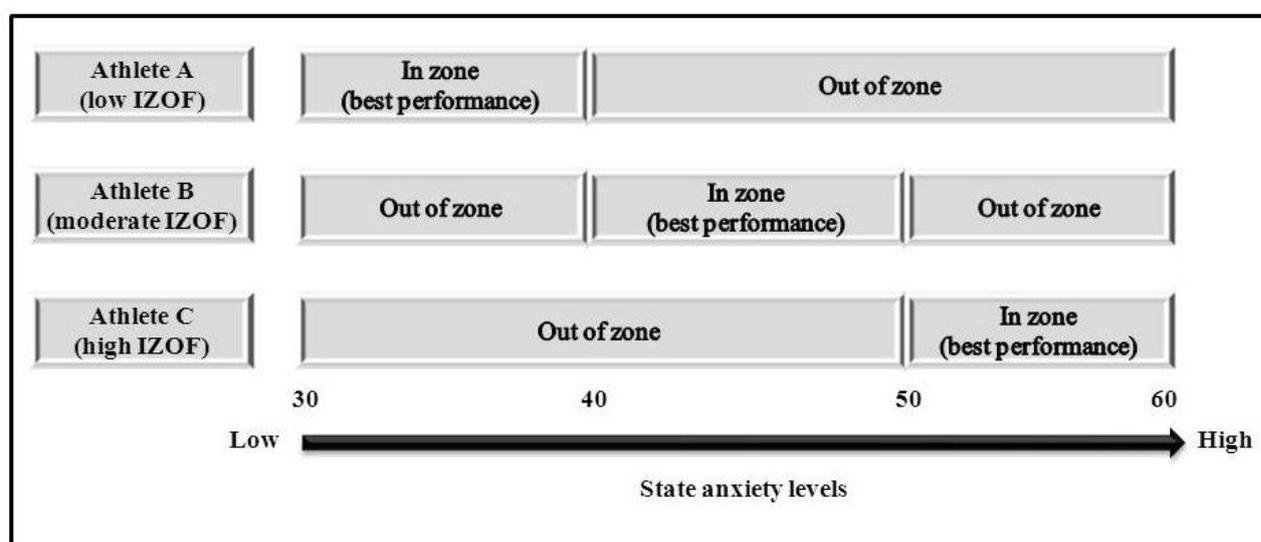
## 2.4 The most common sport psychological skills in sport

### 2.4.1. Anxiety control

Anxiety as defined by Weinberg and Gould (2011:78) is “a negative emotional state characterised by nervousness, worry and apprehension and associated with activation or arousal of the body”. Anxiety is considered an emotion experienced by most sport participants and associated with a negative perception of performance, the lack of concentration, diversion during competition and nervousness about performance (Karageorghis & Terry, 2011:104; Khodayari *et al.*, 2011:2281). According to Karageorghis and Terry (2011:89) many sport participants associate anxiety with feelings of pressure, fear, worry and hesitation. Anxiety consists of two components namely cognitive anxiety, which includes an individual’s thoughts like worry and fear, and somatic anxiety, which includes physical arousal (Weinberg & Gould, 2011:78). Tod *et*

*al.* (2010:76) substantiates that cognitive anxiety represents the mental aspect of anxiety, the uncertainties, doubts and concerns that sport participants may have about their performance and somatic anxiety consists of the physiological symptoms of activation, like sweaty palms or elevated respiration. Another significant distinction that can be made is between state and trait anxiety (Weinberg & Gould, 2011:78). State anxiety, as noted by Tod *et al.* (2010:75), is the anxiety a sport participant experiences in a specific situation and changes from one situation to another. Weinberg and Gould (2011:79) reported that trait anxiety is part of a sport participant's personality which leads to a tendency to perceive competitive situations as threatening when in reality they are not.

The cause of anxiety can be ascribed to an imbalance between the skills of the sport participant and their sport demands, the impact that anxiety has on performance often depends on how a sport participant interprets the anxiety they experience and when sport participants accept anxiety as a normal psychological reaction to performance, it will not disrupt their performance (Karageorghis & Terry, 2011:90). Sport participants also differ with regard to the level of anxiety associated with their best performance, it is therefore important for sport participants to identify the optimal level of anxiety that will benefit their performance (Gallucci, 2008:56). The individualised zone of optimal functioning (IZOF) model is one of many models available to sport participants to identify the level of anxiety that will positively influence sport performance. A sport participant's zone of optimal functioning may either be at the lower, middle or upper end of the continuum (Weinberg & Gould, 2011:89). Figure 2 indicates the different zones where sport participants will exhibit their best performances.



**Figure 2.2:** Individualised zones of optimal functioning (IZOF) (Weinberg & Gould, 2011:88).

From figure 2.2 it is clear that sport participants can use the anxiety they experience during competition to enhance their performance and that the IZOF are not the same for all sport participants.

### **2.4.2 Concentration**

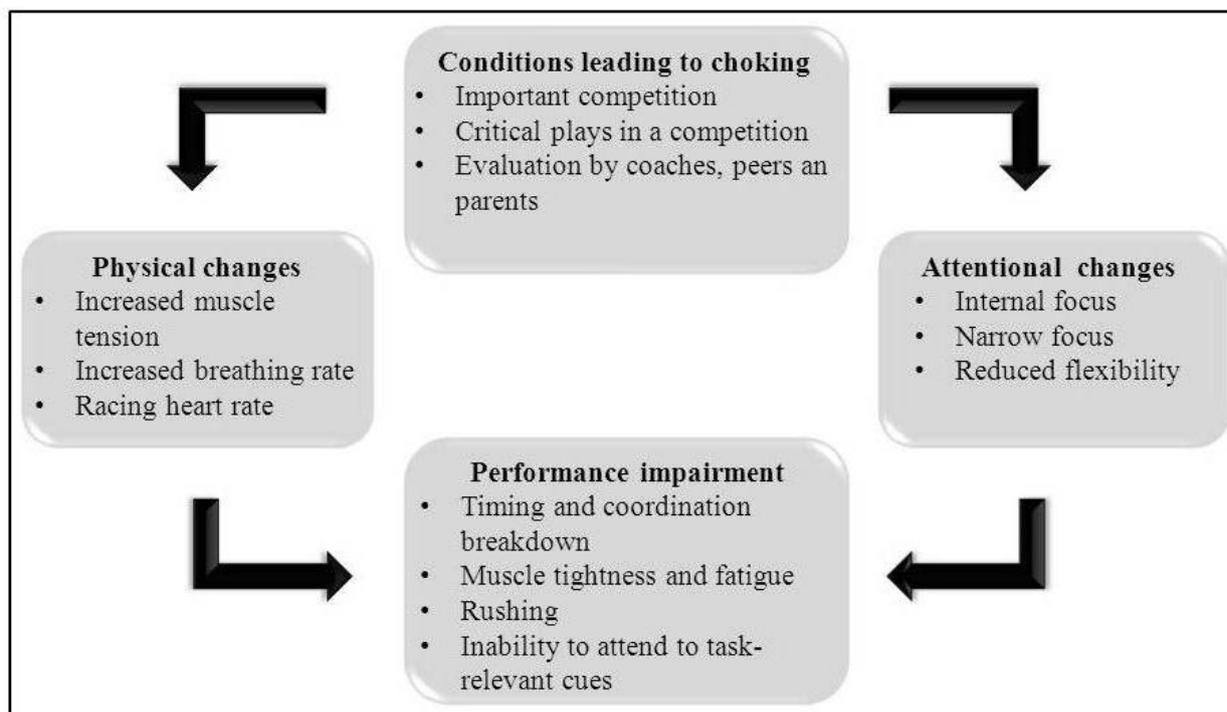
Concentration is defined as “focusing on the relevant cues in the environment, maintaining that attentional focus over time, having awareness of the situation and performance errors and shifting attentional focus when necessary” (Weinberg & Gould, 2011:364). According to Taylor (1995:341) concentration is the ability of individuals to focus on the relevant aspects in their immediate attention field. Karageorghis and Terry (2011:143) regard concentration as a very prominent SPS because of the influence and effect it has on other SPSs. Concentration is a process where individuals receive stimuli from the environment and their own thoughts, which they have to focus on (Gallucci, 2008:96). Because of the dynamic nature of concentration and the constant shift between stimuli, it is necessary for sport participants to experience optimal concentration and to keep their attention on the right thing at that specific time (Karageorghis & Terry 2011:144). The improvement of concentration skills involve two perspectives or approaches, namely the enhancement of attention to relevant stimuli and/or the decreasing of attention to irrelevant stimuli, such as the spectators or the opponent (Karageorghis & Terry, 2011:144).

Concentration also includes two dimensions that need constant adjustment, namely width and direction. The ideal width of concentration can either be a narrow focus on specific objects or a broad focus on the surroundings, depending on the situation. The direction of concentration can either be towards objects outside an individual’s body (external) or internally on the feelings or thoughts an individual experiences (Brewer, 2009:20; Williams, 2010:338; Karageorghis & Terry, 2011:148; Weinberg & Gould, 2011:372). According to Brewer (2009:20) concentration can be divided into four categories namely broad external, broad internal, narrow external and narrow internal. These categories of concentration are defined as follows by Weinberg and Gould (2011:372):

- Broad external concentration is used to see several occurrences simultaneously and makes possible a quick evaluation of a situation.
- Broad internal concentration is used to plan strategies, develop a game plan and analyse play.
- Narrow external concentration is used when athletes have to focus on one or two external cues.

- Narrow internal concentration is used by athletes to control their emotional state and to mentally prepare for an upcoming performance.

Weinberg and Gould (2011:372) noted that the different categories of concentration are applicable to various situations and types of sport. Many sport participants experience the influence of distraction during competition, this occurrence is due to the lack of or limited concentration and will in turn lead to lower performance (Karageorghis & Terry, 2011:144; Weinberg & Gould, 2011:373). According to Weinberg and Gould (2011:377) two forms of distraction exist namely, internal (the individual's thoughts, worries and concerns) and external (environmental) distractors. These distractions are the main reasons for sport participants' concentration to waver and could lead to sport participants choking (losing concentration) under pressure (Weinberg & Gould, 2011:377). Figure 3 indicates the cognitive and physical changes related to choking under pressure.

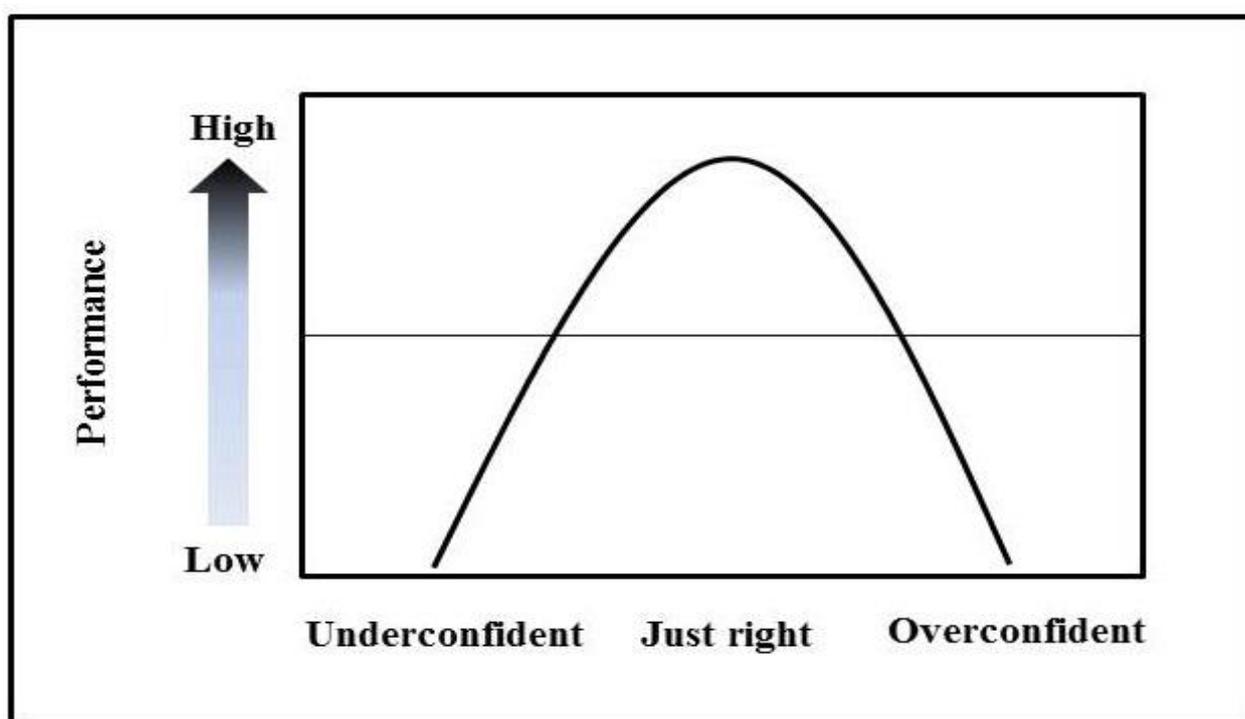


**Figure 2.3:** The choking process (Weinberg & Gould, 2011:375).

From Figure 2.3 it is clear that changes in concentration (e.g. adoption of a narrow, internal focus in high-pressure situations) could lead to choking under pressure and could influence sport participants' performance adversely in various ways. Concentration is acknowledged as a crucial SPS of mental activity that will contribute to the enhancement of sport performance (Collins *et al.*, 2011:333). Therefore it is important for sport participants to keep concentration at an optimal level during training as well as competitions.

### 2.4.3 Self-confidence

Self-confidence refers to “how strongly athletes believe in their ability to learn or execute a skill, compete at a certain level, or succeed in competition” (Taylor, 1995:341). Self-confidence is the perception of individuals about their skill to perform and achieve success (Tod *et al.*, 2010:92). Weinberg and Gould (2011:321) stated that self-confidence can be valuable to individuals, given that it stimulates positive emotions, concentration, setting of challenging goals, elevated effort levels and that it has a positive effect on game strategies, performance and psychological momentum. Sport participants identified various types of self-confidence which include believing in their abilities to perform in sport, attaining high levels of physical fitness, bouncing back from mistakes, maintaining attentional focus, controlling stress levels, coping with adversity, achieving personal standards and beating opponents (Brewer, 2009:44). Karageorghis and Terry (2011:60) indicated that self-confidence consists of two characteristics. Firstly, it is a trait which is a constant element of an individual’s personality. Secondly, it is a state relating to how an individual feels at any given moment. According to Brewer (2009:43) elite sport participants define self-confidence as a crucial SPS in sport performance, and also the most fragile SPS that need daily development and maintenance. No person has the same level of self-confidence and each individual has to find his or her own optimal level of self-confidence (Weinberg & Gould, 2011:322). When sport participants show either too much or too little self-confidence it can lead to problems in sport performance (Weinberg & Gould, 2011:322). Figure 4 indicates the optimal point of self-confidence for sport performance.



**Figure 2.4:** The inverted U illustrating the confidence-performance relationship.

From figure 2.4 it is clear that the right amount of self-confidence will ultimately lead to an optimal sport performance.

Karageorghis and Terry (2011:59) stated that when sport participants lose self-confidence it has the same effect on the individual as an injury, for their recovery from the loss of self-confidence can take the same amount of time as an injury would have taken. Brewer (2009:47) stated that self-confidence is the “mental modifier”, because of the ability to modify how an individual feels about, responds to and thinks about everything that happens to them in their sport. It can therefore be considered a very important SPS to have at one’s disposal in daily life as well as in sport participation.

#### **2.4.4 Goal setting**

Goal setting is a process by which individuals set specific standards or objectives for their performance (McCarthy *et al.*, 2010:163). McCarthy *et al.* (2010:164) further stated that goal setting is a way of reaching a level of accomplishment in a task at hand. Gallucci (2008:134) confirms that individuals guided by goals will work harder, faster and for longer periods of time to achieve their goals. According to Thelwell and Greenlees (2003:319) the three goal setting types, performance, process and outcome goals, may develop feelings and perceptions of control, which may give sport participants a motivational boost. These different types of goals are defined by Weinberg and Gould (2011:344) as follows:

- Outcome goals are set with the focus specifically on the result of the event, for example attaining more points than the opponent, or getting first place in the activity they participate in.
- Performance goals focus directly on an individual’s own performances, to improve their personal best performance, for example improving the percentages of successful goals from 75% to 80% during a netball game.
- Process goals are set with the focus directly on the actions an individual must execute during a performance to succeed, for example a tennis player may set a goal of hitting the ball at the highest point during a serve.

Weinberg and Gould (2011:344) stated that sport participants should be able to integrate all three types of goals, because of the important role they play in directing behavioural changes. Collins *et al.* (2011:59) stated that goal setting plays an indispensable role in sport participants’ performance. Therefore setting goals specifically for an individual’s needs would motivate sport participants to train hard and keep their focus on their performance.

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### 2.4.5 Imagery

Imagery is the rehearsing of a performance, using all your senses, without actual physical involvement in the activity and most often involves the intentional upbringing of images to the mind (Gallucci, 2008:84). According to Weinberg and Gould (2011:294) individuals can use imagery to create new pictures, or they can recreate previous positive experiences in their minds, to prepare them psychologically for performance. Collins *et al.* (2011:57) reported that imagery can help injured individuals, who are unable to physically train, to perform and practice their skills effortlessly. Weinberg and Gould (2011:303) concurred that sport participants can use imagery to cope with pain or injury and to practice sport skills and strategies. Imagery can therefore be used to improve both physical and psychological skills and often leads to the improvement of other SPSs like concentration, motivation, self-confidence and the ability to control emotional responses (Weinberg & Gould, 2011:303).

Like other SPSs, imagery needs practice, which will lead to images becoming more vivid (clear and easy to see) and controllable (bringing images to mind in their proper sequence) (Gallucci 2008:86). Gallucci (2008:86) further stated that imagery consists of two perspectives namely internal and external imagery. These different perspectives of imagery are defined as follows by Weinberg and Gould (2011:299):

- An internal perspective involves how the sport participants experience a successful performance from his or her vantage point.
- An external perspective refers to how the sport participants' performance will look when you see it from the perspective of an outsider.

According to Weinberg and Gould (2011:300) imagery from either an internal or an external perspective can enhance a sport participant's performance, as long as the image is vivid, controllable and good in terms of a positive outcome.

### 2.4.6 Motivation

Motivation is regarded as the intensity (how much effort an individual reveals during performance) and direction (whether a sport participant approaches or is attracted to a specific situation) of an individual's efforts (Brewer, 2009:7; Weinberg & Gould, 2011:51), and has two main sources namely, intrinsic and extrinsic motivation (Martens & Webber, 2002:254; Gallucci, 2008:36; Tod *et al.*, 2010:37; Karageorghis & Terry, 2011:33; Weinberg & Gould, 2011:51). When individuals participate in sport to win medals, or receive rewards or attention they are motivated by external influences and are therefore using extrinsic motivation (Karageorghis &

Terry, 2011:33). With regard to intrinsic motivation, sport participants participate in an activity with the sole purpose of enjoyment and personal satisfaction and they find sport stimulating and interesting without any external rewards (Martens & Webber, 2002:254; Karageorghis & Terry, 2011:33). Gallucci (2008:36) reported a third motivational orientation, amotivation, and defines it as the “relative absence of motivation”. Individuals who exhibit amotivation may quit their training and believe that they won’t succeed or achieve optimal performance (Gallucci, 2008:36).

Tod *et al.* (2010:31) identified another category of motivation, namely achievement motivation, which is described as the motivation based on an individual’s drive to achieve success. According to Weinberg and Gould (2011:61) achievement motivation refers to the hard work of an individual to master a skill, beat obstacles, achieve excellence, be proud of his or her talent and outsmart his or her opponents. According to Brewer (2009:8) there are a few aspects to consider when trying to determine the best way of motivating individuals. These aspects include both individual (personality, needs, goals and interests) and situational factors (coaching style, win-loss record, support and tradition). Motivation not only plays an integral role in the achievement of outstanding performance but also in sport participants’ daily lives. Without motivation one will never be psychologically ready to perform optimally (Karageorghis & Terry, 2011:27).

With this information on different types of SPSs it is clear that the integration of SPSs in sport can lead to the enhancement of a sport participant’s performance. Furthermore, the information indicates that SPSs play an encompassing role in a sport participant’s life, as well as the enjoyment of his or her experience during sport participation. Various sporting codes include the participation of both genders. Therefore a factor to acknowledge is the relationship of gender and the SPSs sport participants use during sport participation.

## **2.5 The relationship of gender and the sport psychological skills profile of sport participants**

Gender is acknowledged as a significant interpersonal aspect in sport (Jones *et al.*, 1991:13; Katsikas *et al.*, 2009:31). Gallucci (2008:383) noted differences between males and females with regard to their motives for participation in sport. Males consider status, achievement, competition, social outlet, independence and means of releasing tension and energy as important reasons for participation, whereas females include fitness, friendship, learning new skills and improving their health (Gallucci, 2008:383).

In addition to differing motives for sport participation, researchers like Gill (2000:256) and Elferink-Gemser *et al.* (2003:89) state that it is also very important to bear in mind that male and female sport participants are not alike in terms of their experience of a situation during sport participation, and the subsequent use of SPSs. It has been reported by Nicholls *et al.* (2007:1526) that female sport participants experience more team-mate and communication-related stressors, whereas males experience stressors related to error and injury. Katsikas *et al.* (2009:31) noted that male sport participants present lower cognitive anxiety and higher self-confidence compared to female sport participants. To cope with these stressors females in this study tended to use technique-orientated coping and better planning, whereas males made use of blocking out the stressor (Nicholls *et al.*, 2007:1526). Also female sport participants have been found to use more emotion-focused coping, they are extremely goal orientated and focus more on personal goals, where male sport participants use more problem-focused coping, they are more win-orientated and focus more on interpersonal comparison and competitiveness (Jones *et al.*, 1991:13; Katsikas *et al.*, 2009:31). With regards to confidence, anxiety control and mental preparation, Elferink-Gemser *et al.* (2003:95) indicated that male sport participants outscored their female counterparts, whilst female sport participants tend to have higher concentration levels when compared to male sport participants.

Literature thus clearly indicates that there is a difference between male and female sport participants in terms of SPSs use and it is therefore important to keep these differences in mind when working with either gender. Although literature indicates a difference between male and female sport participants, there also exists a relationship between the type of sport of participation and the SPSs sport participants use during training and competition. Consequently a brief discussion of the type of sport and the SPSs profile of the sport participants.

## **2.6 The relationship of the type of sport and the sport psychological skills profile of sport participants**

Every sport has its own unique physical, technical and logistical demands which require specific preparation by individuals participating in the sport (Taylor, 1995:345). Taylor (1995:345) further stated that these characteristics which distinguish different sports also have an impact on the psychological preparation that sport participants use and that there are four aspects that may affect the psychological preparation of sport participants. Firstly, sports that include endurance and aerobic output differ from explosiveness and anaerobic output. Secondly, the technical precision of a sport as represented by its emphasis on gross motor skills and fine motor skills will influence the psychological preparation. Thirdly, the duration of participating in a competition

(for instance netball games that last an hour versus a hundred metre sprint that last only a few seconds) require different SPSs. Fourthly, a sport that involves many short performances with rest breaks differ from a sport that requires a one-time performance, therefore the time intervals between actual performances during competitions should be acknowledged.

Elferink-Gemser *et al.* (2003:89) substantiate that differences exist in the use of SPSs when individual and team sport participants are compared. Nicholls *et al.* (2007:1528) noted that team sport participants (TSPs) experience more stressors, like letting your team down, mistakes of team mates and the expectation to be selected for play in comparison with individual sport participants (ISPs). Whitehead and Basson (2005:170) found that TSPs are reported to use more mental imagery than ISPs. Furthermore, Whitehead and Basson (2005:161) stated that ISPs use different types of goal setting (only individual goals) than TSPs (team goals and individual goals). ISPs are reported to use more emotion-focused coping like imagery, relaxation and self-blame where TSPs use a great deal of communication to cope with the different stressors they experience (Nicholls *et al.*, 2007:1528). Elferink-Gemser *et al.* (2003:96) found that ISPs scored higher in confidence compared to TSPs. An explanation for the higher levels of confidence in ISPs could be the fact that ISPs receive direct feedback where TSPs receive feedback as a whole, while only one or two players will receive feedback individually. Several studies reported that TSPs use SPSs such as fear control, achievement motivation, goal directedness, goal setting, self-confidence, mental rehearsal, peaking under pressure, activation control and concentration (Andrew *et al.*, 2007:322; Van der Heever *et al.*, 2007:118; Kruger, 2010:243). In contrast, ISPs report using SPSs such as goal setting, relaxation, imagery, self-talk, motivation, self-confidence and concentration (Taylor, 1995:349; Thelwell & Greenlees, 2001:138).

With this information on individual and team sports, it is clear that differences exist between the type of sport of participation and the SPSs needed to enhance the performance of sport participants.

## **2.7 Conclusion**

From the above literature review it is clear that sport psychology plays an important role in sport participation and performance, regardless of the participation level, age, gender and type of sport, and that the enhancement of SPSs can lead to the enrichment of sport participants' lives. Although some research has been conducted with regard to adolescents participating in sport, very little information exists concerning adolescents' use of SPSs during sport participation.

Literature has also been cited that indicates the existence of a variety of SPSs, namely anxiety control, concentration, self-confidence, goal setting, imagery and motivation, each with its own unique purpose. These SPSs can be used in different combinations to form specific SPS profiles for sport participants. Additionally, it was indicated that a difference exists in the application of SPSs when it comes to different genders as well as different sporting codes. Males tend to show higher levels with regard to confidence, anxiety control and mental preparation whereas females tend to have higher concentration levels. TSPs use SPSs such as fear control, motivation and self-confidence whereas ISPs use SPSs such as self-talk, imagery and goal setting.

The following two chapters will consist of two research articles which will integrate the information from the reviewed literature into the respective problem statements. The purpose of article 1 (Chapter 3) was to determine which SPSs discriminate significantly between male and female adolescents in a South African context. The purpose of Article 2 (Chapter 4) was to determine which SPSs discriminate significantly between individual and team adolescent sport participants during adolescence in a South African context.

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# Chapter 3

## **Gender differences in the sport psychological skills profile of adolescent sport participants**

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# 3 Gender differences in the sport psychological skills profile of adolescent sport participants

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This article will be submitted for publication in the *Journal of Adolescent Research*. This article is hereby included according to the specific prescriptions of the journal. The instructions for authors are included as Appendix D: Guidelines for authors: Journal of adolescent research.

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## **GENDER DIFFERENCES IN THE SPORT PSYCHOLOGICAL SKILLS PROFILE OF ADOLESCENT SPORT PARTICIPANTS**

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### **Abstract**

Gender is acknowledged as a significant interpersonal aspect in sport and differences exist in the sport psychological skills (SPSs) used between male and female sport participants. Therefore the objective of this study was to explore gender differences in the SPSs of sport-participating adolescents in a South African context. A convenience sample of 211 grade 9 pupils (14 – 15 years of age) from six different secondary schools participated in the study, which included 89 males and 122 females. The data was obtained by means of questionnaires. Descriptive statistics and effect size were reported for all test variables. The results showed that the males obtained higher mean scores in seven of the eight sport psychological skills measured.

**Key words:** adolescents, gender, participation, profile, psychological skills, sport

### **Introduction**

Success in sport is determined by various factors such as technical, tactical, physiological, anthropometric as well as sport psychological skills (SPSs) (Elferink-Gemser, Visscher, Lemmink, & Mulder, 2004). SPSs consist of a variety of constructs or components including motivation, self-confidence, arousal control, interpersonal skills, anxiety control, goal setting, concentration, progressive relaxation, activation, focusing, positive thinking and mental imagery (Elferink-Gemser, Visscher, Lemmink, & Mulder, 2003; McCarthy, Jones, Harwood, & Olivier, 2010; Taylor, 1995). Despite the comprehensive list of SPSs sport participants could attend to, Taylor (1995) emphasised that all sport participants have different needs regarding SPSs and it is therefore important to explore each participant's specific SPS profile in order to reach a better understanding of the needs of different sport participants (Taylor, 1995).

Within the large extent of literature that emphasises the important role of SPSs in sport, the role of gender has emerged as a significant interpersonal aspect which needs to be taken into account when dealing with male and female sport participants (Jones, Swain, & Cale, 1991; Katsikas, Argeitaki & Smirniotou, 2009). Various studies indicated the prevalence of gender differences

regarding the use of SPS (Elferink-Gemser et al., 2003; Gallucci, 2008; Grossbard, Smith, Smoll & Cumming, 2009; Katsikas et al., 2009). Female sport participants, from various sporting codes, displayed higher concentration levels than their male counterparts, whilst male sport participants outscored their female counterparts with regard to confidence, anxiety control and mental preparation (Elferink-Gemser et al., 2003; Grossbard et al., 2009; Katsikas et al., 2009). Furthermore, while female sport participants tend to use more emotion-focused coping, are extremely goal orientated and focus more on personal goals, male sport participants tend to use more problem-focused coping, to be more win orientated and to focus more on interpersonal comparison and competitiveness (Gallucci, 2008; Jones et al., 1991; Katsikas et al., 2009).

It is widely accepted that sport performance can be enhanced by means of the application of SPSs (Cox & Liu, 1993; Elferink-Gemser et al., 2003; Katsikas et al., 2009; Slater & Tiggemann, 2011), and that the acquisition of these skills at an early age will be especially beneficial to the individual's development. Adolescence is a time of rapid development in an individual's physical, intellectual, social and emotional domains, as well as psychological and social growth (Randall & Bohnert 2012). Not only do adolescents show remarkable physical skills development when SPSs are integrated in training and competition, but they also find it easier to remember SPSs when it is incorporated into a physical skills training program (McCarthy et al., 2010). Furthermore, sport participation plays an important role in the psychological development of adolescents (Malebo, Van Eeden, & Wissing, 2007). Participation of youth in sport and physical activity may be particularly beneficial to the enhancement of their physical and psychological well-being (Sit & Linder, 2005). With regard to psychological well-being, physical activity and training have been associated with a positive mood, lower anxiety, optimistic self-perception and enhanced self-worth (Slater & Tiggemann, 2011).

Although a vast extent of literature exists regarding the importance of SPSs in sport performance, the benefit of physical activity and gender differences that exist between SPSs in elite and non-elite sport participants, limited research has explored the SPS profile of adolescent sport participants and the gender differences that may exist between males and females (Elferink-Gemser et al., 2003; Gallucci, 2008; Grossbard et al., 2009; Katsikas et al., 2009). To the author's knowledge virtually no research in this regard exists in the South African context. The purpose of this study was therefore to determine which SPSs discriminate significantly between male and female adolescents in a South African context.

## **Method**

### *Design*

For the purpose of this study, a cross-sectional research design with a convenience sample was used and data was of a quantitative nature. The research data obtained for the present study forms part of a more extensive five-year longitudinal study, the Physical Activity and Health Longitudinal Study (PAHL-Study). The PAHL-Study is an observational, multi-disciplinary study that was initiated in 2010 and will last until 2014. The overall goal of the PAHL-Study was to describe the development of physical activity, determinants of health risk factors and the SPS of learners attending high schools in the Tlokwe Municipal area of the North-West Province in South Africa. Only the data of 2011 was used for the purpose of this study.

### *Participants*

Two schools from a high socio-economic background, Potchefstroom city area, and four schools from a low socio-economic background, Ikageng Township area, were included in the study. Participating schools in the PAHL-Study were selected according to availability. For the purpose of this study the data of participants in grade 9 (mean age: 14.45 years) at the time of the measurement (2011) was used, which resulted in 89 males and 122 females. The data collected from non-sport-participating learners was excluded from the study.

### *Procedure*

The study was approved by the District Director of the Potchefstroom Department of Education as well as by the Ethics Committee of the North-West University (ethics number NWU-0058-01-A1). The testing was conducted during school hours at the various schools. The test procedure for the PAHL-Study comprised of demographic and general information and sport psychological skills questionnaires, anthropometric measurements, determination of maturity as well as physical and motor performance measurements. During the weeks prior to the study, the school authorities, parents and pupils received an informed consent form which explained the nature and objectives of the research project, the right to withdraw and participants' right to anonymity and privacy. The questionnaires were completed under the supervision of a sport psychological consultant that could provide assistance to pupils with regard to any questions, or explain any terminology if needed.

### *Data collection*

The data was obtained by means of a set of questionnaires aimed at gaining demographic and general information, as well as determining the sport psychological skills level of participants.

The demographic and general information questionnaire consists of questions aimed at obtaining information with regard to each participant's demographic profile (date of birth, gender, ethnic group) and his/her sport participation and training habits (sport participation, level of participation, frequency of training).

The sport psychological skills level of each participant was measured by means of the Athletic Coping Skills Inventory-28 (ACSI-28) (Smith, Schutz, Smoll, & Ptacek, 1995). The ACSI-28 questionnaire consists of 28 statements measuring seven distinct sport psychological skills, namely coping with adversity, peaking under pressure, goal setting, concentration, freedom from worry, confidence and the ability to be coached. An average score can be derived from the average value of the seven subscales. Each of the seven subscales consist of four statements regarding the participants' use of particular sport psychological skills, to which participants can respond using a four-point Likert scale ranging from 0 (*never*) to 4 (*always*). In some cases, reverse scoring applies and the subscale scores are expressed as a percentage value in which a higher percentage value reflects a better sport psychological skills level. The ACSI-28 demonstrated good test-retest reliability ( $r = 0.84$ ) (Smith et al., 1995). In the current study, the Cronbach's alpha coefficient was 0.80, which suggests good internal consistency reliability within our sample.

### *Statistical analysis*

The Statistical Consultation Services of the North-West University (Potchefstroom Campus) analysed the research data. SPSS for Windows (Version 18.0.0) was used for the analysis of the data. The validity and reliability of the ACSI-28 was determined by means of factor analysis and Cronbach's alpha coefficient respectively. Descriptive statistics (mean values, standard deviations, minimum and maximum values) were reported for all the test variables. An independent t-test was performed to determine the statistical significance of the differences between the males and the females regarding their SPSs. The level of significance was set at  $p \leq 0.05$ . The practical significance of differences between the two gender groups was determined by means of Cohen's  $d$ , with an effect size of 0.3 regarded as small, 0.5 as medium, and an effect size of 0.8 as large (Thomas & Nelson, 2001).

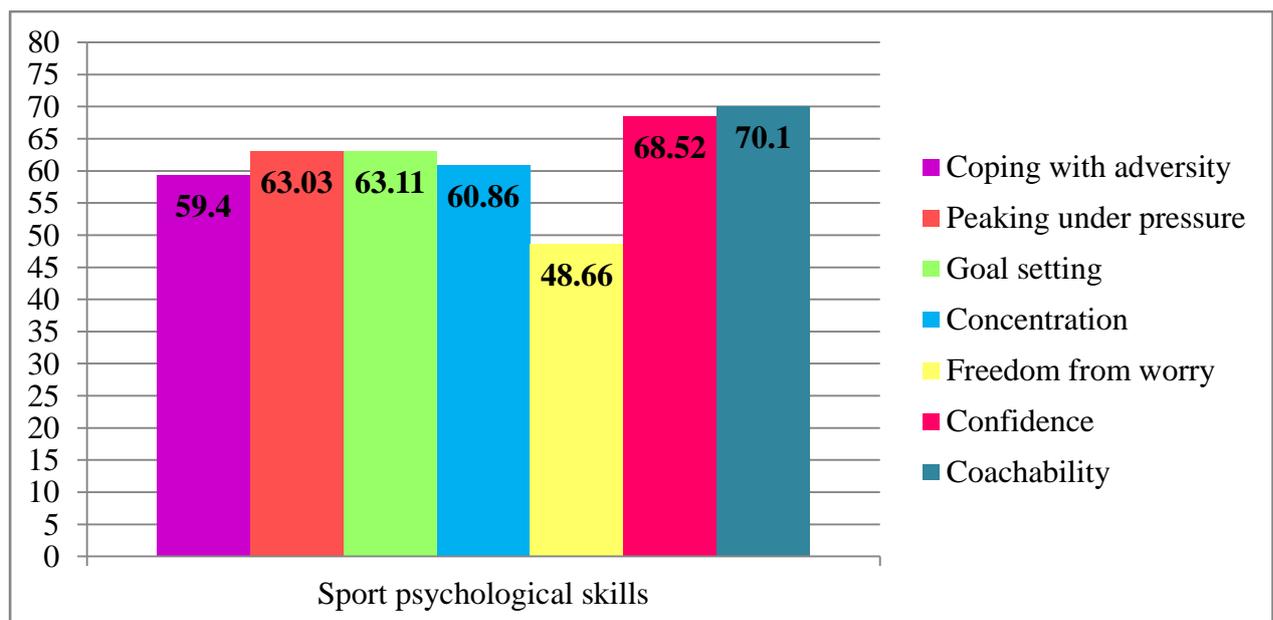
## **Results**

Table 1 reflects the descriptive statistics of the sport psychological skills for the total group (males and females) of 14 – 15-year-old sport participants.

**Table 1:** Descriptive statistics of the test variables for the male and female 14 – 15-year-old sport participants.

Variables	N	$\bar{X}$	SD	Min	Max
Age	211	14.45	0.76	13	17
Coping with adversity	211	59.4	18.84	8	100
Peaking under pressure	211	63.03	19.43	0	100
Goal setting	211	63.11	19.76	0	100
Concentration	211	60.86	18.55	0	100
Freedom from worry	211	48.66	20.59	0	100
Confidence	211	68.52	18.71	25	100
Ability to be coached	211	70.1	18.93	17	100
Average score	211	61.96	11.89	24	100

The results (converted to a percentage score with higher percentage values reflecting better SPS levels) showed that the sport participants from the current population exhibit a SPS profile which consists of coachability (70.10%), confidence (68.52%), goal setting (63.11%), peaking under pressure (63.03%), concentration (60.86%), coping with adversity (59.40%) and freedom from worry (48.66%). Figure 3.1 reflects the graphic representation of the SPS profile of sport-participating adolescents.



**Figure 3.1:** A visual representation of the SPS profile of 14 – 15-year-old sport participants.

Table 2 displays the descriptive statistics of the SPSs for the males and females and indicates the statistical and practical significance of differences between the gender groups.

**Table 2:** Descriptive statistics, gender comparison and effect size of the test variables for the male and female 14 – 15-year-old sport participants.

Variables	Gender	N	$\bar{X}$	SD	Min	Max	p=values	ES
Age	1	89	14.48	0.82	13	17		
	2	122	14.43	0.72	13	16	0.67	0.06
Coping with adversity	1	89	60.02	18.47	17	100		
	2	122	58.95	19.17	8	100	0.69	0.06
Peaking under pressure	1	89	64.14	17.83	25	100		
	2	122	62.23	20.56	0	100	0.48	0.09
Goal setting	1	89	64.89	19.76	17	100		
	2	122	61.82	19.75	0	100	0.27	0.16
Concentration	1	89	63.30	17.71	25	100		
	2	122	59.08	19.02	0	100	0.10	0.22
Freedom from worry	1	89	52.06	20.27	8	100		
	2	122	46.17	20.56	0	100	0.04*	0.29
Confidence	1	89	70.51	18.51	25	100		
	2	122	67.08	18.79	33	100	0.19	0.18
Ability to be coached	1	89	69.29	18.23	25	100		
	2	122	70.70	19.47	17	100	0.60	-0.07
Average score	1	89	63.46	11.21	39	100		
	2	122	60.86	12.31	24	100	0.12	0.21

1=Males; 2=Females; \*= p-value  $\leq 0.05$

From Table 2 it is clear that the males obtained slightly higher mean scores in seven of the eight sport psychological skills measured, namely coping with adversity, peaking under pressure, goal setting, concentration, freedom from worry, confidence as well as the average score. The only difference that proved to be statistically significant was the freedom from worry subscale where the males obtained a higher average value than the females. As with the other subscales, this difference proved only to be of small practical significance.

## Discussion

The purpose of this study was to determine which SPSs discriminate significantly between male and female adolescents in a South African context. Although males obtained higher mean scores

in seven of the eight sport psychological variables measured, only the freedom from worry subscale produced a statistically significant difference ( $p < 0.05$ ) with a small effect in practice.

The adolescents from the current study exhibit a SPSs profile consisting of coachability, confidence, goal setting, peaking under pressure, concentration, coping with adversity and Freedom from worry. Kruger, Pienaar, Du Plessis, and Van Rensburg (2012) found in their study on long-distance runners, with an average age of 13.2 years, a SPSs profile consisting of coachability, confidence, concentration, coping with adversity, goal setting, peaking under pressure and freedom from worry. When the SPS profiles of the two groups are compared it becomes clear that differences exist with regard to the ranking of the SPSs, specifically with regard to goal setting, peaking under pressure, concentration and coping with adversity. The occurrence of similarities is also evident and it is clear that coachability and concentration featured prominently in the SPSs profiles of both groups. The adolescents from the current study obtained lower average scores in five of the seven sport psychological variables than the study of Kruger et al. (2012) which includes coping with adversity, concentration, freedom from worry, confidence and coachability. These differences could be an indication of the level of importance of each SPS to the different groups and also the difference of individual needs of sport participants regarding the SPS profile both groups exhibit. Differences between these two groups could possibly be ascribed to different participation levels; sport participants participating at a higher level apply SPSs more frequently than recreational or lower level sport participants. Furthermore, the difference of their socio-economic backgrounds – learners from a high socio-economic background may have more previous exposure to SPSs compared to learners from a low socio-economic background. Subsequently the gender differences with regard to the different SPSs will be discussed individually.

Coping with adversity is the ability of a sport participant to stay calm and keep emotional control, while remaining enthusiastic and being positive regardless of challenging situations (Andrew, Grobbelaar, & Potgieter, 2007). Tamminen, Holt, and Neely (2012) state that adversity could refer to the presence of either psychological or physical stressors which could lead to interference with normal functioning. According to Crocker and Graham (1995), male and female sport participants cope differently with performance-related stress or adversities. This does not necessarily mean that these groups test higher or lower in comparison, but merely that they use different types of coping strategies (Crocker & Graham, 1995; Katsikas et al., 2009). The results of the current study are in line with the above-mentioned statement, seeing that the average coping ability between the males and females showed no significant difference.

According to Bourgeois, Loss, Meyers, and Leuens (2003), peaking under pressure refers to the ability of a sport participant to perform under pressure and experience the situation at hand as a challenge rather than a threat. Sport participants that adapt to pressured situations exhibit the ability to rapidly return to a normal emotional state, while others may respond to pressure by 'choking' (Kruger et al., 2012). Hill, Hanton, Fleming, and Matthews (2009) suggested that the term choking should be used to express an acute failure to perform under pressure. Omoregie and Adegbesan (2011) found in their study on university basketball players that female basketball players respond to pressure situations by revealing emotions which have a negative effect on their performance. They also found that females are more likely to worry about the impression they will make and therefore they have a lower performance rate than their male counterparts. The results of this study suggest that the difference observed by Omoregie and Adegbesan (2011) may already occur during adolescence, seeing that the male sport participants showed a slightly higher average score in peaking under pressure than the female sport participants. The difference, however, is not statistically significant.

Goal setting is a SPS which enables sport participants to set specific objectives or targets for their sport performance (McCarthy et al., 2010). Setting goals play an essential part in the performance of sport participants (Collins, Button, & Richards, 2011). Gábor, Géza, Miklós, and József (2009) found in their study on ice hockey, soccer, water polo and volleyball players that male athletes have higher levels of goal setting than female athletes. The findings of the current study, although not statistically significant, correspond with the results of Gábor et al. (2009), given that the male sport participants showed a tendency towards a better goal setting ability than the female sport participants.

Weinberg and Gould (2011) stated that concentration is the ability of a sport participant to focus on relevant cues in their immediate vicinity and to maintain their attention over time. For the optimal concentration experience, a sport participant should keep concentrating on the right cue at a specific time during performance (Karageorghis & Terry, 2011). A study on swimmers indicated that male swimmers displayed higher concentration levels than female swimmers (Cox & Liu, 1993). The results of the current study show a tendency towards the findings of Cox and Liu (1993) seeing that the male sport participants obtained a slightly better average score in concentration than their female counterparts, but once again the difference was not statistically significant.

Freedom from worry is a state in which sport participants do not experience pressure from the worry of making mistakes, or performing poorly (Bourgeois et al., 2003). Worry is regarded as a

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characteristic of anxiety such as nervousness and apprehension, and is associated with a negative emotional state which sport participants experience during performance (Weinberg & Gould, 2011). Grossbard et al. (2009) found in their study on youth sport participants that female sport participants reported significantly higher levels of worry than their male counterparts. The current study confirms the above findings seeing that the male sport participants in our sample showed a significantly higher average for freedom from worry than the female sport participants.

Self-confidence is the belief of a sport participant in his or her ability to succeed or achieve results at a certain level (Taylor, 1995) and includes the perceptions of sport participants concerning their skills to achieve success in a certain event (Tod, Thatcher, & Rahman, 2010). Regarding gender differences, Cox and Liu (1993) reported that male athletes tend to reveal higher self-confidence levels than their female counterparts. Although the difference between males and females in the current study does not show statistical significance, it corresponds with the findings of Cox and Liu (1993) seeing that the male sport participants showed a slightly higher level of self-confidence than the female sport participants.

Coachability is the ability of sport participants to be able to learn from instructions and be open to constructive criticism, without taking any offence (Bourgeois et al., 2003). According to Kruger et al. (2012), coaches consider coachability a significant skill of sport participants that may lead to success in sport. A study done by Gábor et al. (2009) on ice hockey, soccer, water polo and volleyball players indicated that female athletes tested higher in their ability to be coached than male athletes. The results of the current study correspond with the above-mentioned, given the fact that the female sport participants showed a slightly higher average for coachability than the male sport participants. However, the difference is not statistically significant.

From the above-mentioned discussion it is clear that the SPSs profile and gender differences of adolescent sport participants involved in the current study bear a strong resemblance to the results found in literature. Although the lack of similar studies made direct comparison difficult, it is interesting to note that the same tendencies were observed. The fact that gender differences in seven of the eight SPSs did not reach statistical significance, could possibly be ascribed to the fact that the majority of the subjects in the current study participate in sport on school or recreational level and were compared with athletes that compete at an elite level. Age could also have had an important influence on the results, seeing that most of the studies were conducted on older sport participants, which could indicate that gender differences will become more apparent in the later stages of development among adolescent sport participants.

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## **Conclusion**

The purpose of this study was to determine which SPSs discriminate significantly between male and female adolescents in a South African context. The results of this study showed that small, and mostly non-significant, differences do exist, regarding the SPSs profile of males and females. More specifically, the males obtained slightly higher averages in seven of the eight SPSs measured, compared to females. These included coping with adversity, peaking under pressure, goal setting, concentration, freedom from worry, confidence and average coping ability. Females outscored their male counterparts only in the coachability subscale. Only one SPS variable (freedom from worry) showed a statistical significant difference.

From the results of the current study it is clear that, although 14 – 15-year-old adolescent sport participants showed similar patterns of differences in terms of their SPSs than what was found in other studies, those differences have not yet reached significant levels. It is recommended that a longitudinal study be conducted to determine when the observed differences between genders become significant. However, one possible implication of the current study is that when mental skills training programs are applied, sport participants at this age could be considered a homogenous group, meaning that both genders could participate in the same mental skills training program.

Despite the value of this study, some limitations have been identified. Since the subject group was not randomly selected and only selected out of one district, the results cannot be generalised to other sport-participating adolescents. It is also recommended that the subject group be larger and be randomly selected. Furthermore, it is recommended that the study be conducted on different sporting codes.

Literature contains insufficient data with regard to SPSs profiles of adolescents participating in sport as well as the possibility of gender differences. Therefore this study could contribute towards the establishment of a basis which could be used by sport scientists and coaches to understand adolescent sport participants' specific SPSs and possibly aid in identifying sport participants' individual needs. Furthermore, it could serve as a guideline to sport psychologists to tailor mental skills training programs, specifically to the needs of sport participants, which could assist coaches in the holistic development of adolescent sport participants. The findings from this study can also contribute to a better understanding of males and females during adolescence with regard to SPSs, although more research is still needed with regard to gender differences and SPSs. These results could also contribute to future talent identification and development (TID) models, seeing that SPSs play an important role in the development of adolescents.

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# Chapter 4

## **Sport psychological skills that discriminate between individual and team sport participants**

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# **4 Sport psychological skills that discriminate between individual and team sport participants**

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This article will be submitted for publication in the *Journal of Psychology in Africa*. This article is hereby included according to the specific prescriptions of the journal. The instructions for authors are included as Appendix D: Guidelines for authors: Journal of Psychology in Africa.

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## **SPORT PSYCHOLOGICAL SKILLS THAT DISCRIMINATE BETWEEN INDIVIDUAL AND TEAM SPORT PARTICIPANTS**

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### **Abstract**

The purpose of this study was to determine the sport psychological skills (SPSs) that discriminate significantly between individual and team sport participants. A convenience sample of 207 grade 9 pupils (14-15 years of age) from six different secondary schools participated in the study, which included 69 team sport participants (TSPs) and 138 individual sport participants (ISPs). The data was obtained by means of questionnaires. Descriptive statistics and effect size were reported for all test variables. The results showed that the ISPs obtained higher mean scores in seven of the eight SPSs that were measured. This study contributes to a better understanding of adolescents participating in sport and the development of psychological skill training programs.

**Key words:** adolescents, individual, participation, psychological skills, sport, team

### **Introduction**

Sport consists of various types of sub-disciplines, each with its own unique physical, technical, logistical and psychological demands and therefore requires specific preparation by individuals participating in the sport in accordance with the specific requirement of the sport (Taylor, 1995). It is well known that sport psychological skills (SPSs) are important factors which contribute to the enhancement of sport performance (Elferink-Gemser, Visscher, Lemmink, & Mulder, 2003; Gallucci, 2008; Katsikas, Argeitaki, & Smirniotou, 2009; Raglin, 2001; Slater & Tiggemann, 2011; Van den Heever, Grobbelaar, & Potgieter, 2007).

Regarding the psychological demands of sport, Taylor (1995) reported four aspects that could affect the psychological preparation of sport participants. Firstly, the psychological demands of sport that include explosiveness and anaerobic output differ from endurance and aerobic output sport (e.g., long jump versus marathon). Secondly, the precision of a sport will influence the psychological preparation (e.g., gross motor skills versus fine motor skills). Thirdly, the duration of participation in a competition, a sport that lasts four hours, requires significantly different psychological demands compared to a sport that last only a few seconds (e.g., cricket game

versus 100m sprint). Fourthly, a sport that requires a one time performance differs with regards to psychological preparation from a sport that involves many short performances with rest breaks (e.g., speed skating versus decathlon), therefore the time intervals between actual performances should be acknowledged. In addition to the above-mentioned factors, Elferink-Gemser et al. (2003) emphasised that the type of sport (team/or individual) also has an effect on a participant's psychological preparation.

Team sport participants (TSPs) experience more stressors, like the expectation to be selected for first line up, letting your team down and mistakes of team mates, in comparison with individual sport participants (ISPs) (Nicholls, Polman, Levy, Taylor, & Copley, 2007). TSPs also use more mental imagery compared to ISPs (Whitehead & Basson, 2005). Whitehead and Basson (2005) further stated that ISPs only set individual goals, whereas TSPs will use team goals as well as individual goal setting. As far as confidence is concerned, ISPs show higher levels of confidence compared to TSPs (Elferink-Gemser et al., 2003). The higher levels of confidence could be ascribed to the fact that ISPs always receive direct feedback whereas TSPs receive feedback as a team and only one or two players will receive individual feedback (Elferink-Gemser et al., 2003). Several studies reported that ISPs make use of SPSs such as relaxation, self-talk, goal setting, motivation, imagery, concentration and self-confidence (Taylor, 1995; Thelwell & Greenlees, 2003). In contrast, TSPs make use of SPSs such as goal-directedness, achievement motivation, self-confidence, mental rehearsal, fear control, peaking under pressure, goal setting, concentration and activation control (Andrew, Grobbelaar, & Potgieter, 2007; Kruger, 2010; Van den Heever et al., 2007). Regarding adolescent athletes, Nicholls et al. (2007) reported in their study on adolescent athletes (13.77 years), that ISPs use more emotion-focused coping like self-blame, imagery and relaxation compared to TSPs who use a great deal of communication to cope with the vast number of different stressors they experience.

Although a substantial amount of literature exists regarding the importance of SPSs on sport performance and differences that exist between SPSs in elite and non-elite sport participants, limited research has explored the SPSs of adolescent sport participants and the differences that may exist between individual and team sport participants. Research of this nature can contribute to a better understanding of the SPS use of sport participants of different sporting codes and the development of psychological skills training (PST) programs of the different sport participants, which could assist coaches in the holistic development of adolescent sport participants. No studies could be traced regarding the differences between adolescent individual and team sport participants in a South African context. Therefore the purpose of this study was to determine

which SPSs discriminate significantly between individual and team adolescent sport participants in a South African context.

## **Method**

### *Design*

A cross-sectional research design was used, and the data was of a quantitative nature. The research data obtained for the current study forms part of a larger five year Physical Activity and Health Longitudinal Study (PAHL-Study). The PAHL-Study is an observational, multidisciplinary study that started in 2010 and will last until 2014. The overall goal of the PAHL-Study is to describe the development of physical activity and SPSs, as well as determinants of health risk factors of learners attending high schools in the Tlokwe Municipal area of the North-West Province in South Africa. Only the data collected during 2011 was used for the purpose of this study.

### *Participants*

Four schools from a low socio-economic background, Ikageng Township area, and two schools from a high socio-economic background in the Potchefstroom area were included in the study. Participating schools in the PAHL-Study were selected according to availability. Only participants in grade 9 at the time of the measurement (2011) were eligible to participate in the study, which included 69 individual and 138 team sport participants. Sport participants were divided into the two groups according to the primary sport in which they participate. The data collected from non-sport participating learners were excluded from the study.

### *Procedure*

The study was approved by the Potchefstroom District Director of the Department of Education as well as the Ethics Committee of the North-West University (Ethics number NWU-0058-01-A1). The testing was conducted during school hours at the North-West University (NWU). The test procedure for the PAHL-Study comprised of demographic, general information, sport and training habits and sport psychological skills questionnaires, anthropometric measurements, determination of maturity as well as physical and motor performance measurements. During the weeks prior to the study, the school authorities, parents and pupils received an informed consent form which explained the nature and objectives of the research project, the right to withdraw and participants' right to anonymity and privacy. On the testing day the pupils were brought to the NWU where they assembled in a lecture hall and the test procedures were explained. The questionnaires were completed under the supervision of a sport psychological consultant who

could provide assistance to pupils with regard to any questions, or explain any terminology if needed.

#### *Data collection*

The data was obtained by means of a set of questionnaires aimed at gaining demographic and general information, sport and training habits, as well as a questionnaire to determine the sport psychological skills level of the participants.

The demographic and general information questionnaire consisted of a set of questions aimed at gaining information regarding each participant's' demographic profile (date of birth, gender, ethnic group) and his/her sport and training habits (main sport, frequency of training, participation level).

The sport psychological skills level of each participant was measured by means of the Athletic Coping Skills Inventory-28 (ACSI-28) (Smith, Schutz, Smoll, & Ptacek, 1995). The ACSI-28 questionnaire consists of 28 statements measuring seven distinct SPSs, namely coping with adversity, peaking under pressure, goal setting, concentration, freedom from worry, confidence, and ability to be coached. An average score can be derived from the average value of the seven subscales. Each of the seven subscales consists of four statements regarding the participants' use of a particular SPS, to which participants can respond using a four-point Likert scale ranging from 0 (*never*) to 4 (*always*). In some cases, reverse scoring applies and the subscale scores are expressed as a percentage value in which a higher percentage value reflects a more frequent use of a particular SPS. The ACSI-28 demonstrated good test-retest reliability ( $r = 0.84$ ) in a study by Smith et al. (1995). In the current study, the Cronbach's alpha coefficient was 0.80, which suggests good internal consistency reliability within our sample.

#### *Statistical analysis*

The Statistical Consultation Services of the North-West University analysed the research data. SPSS for Windows (Version 18.0.0.) was used for the analysis of the data. The reliability of the ACSI-28 was determined by means of factor analysis and Cronbach's alpha coefficient respectively. Descriptive statistics (mean values, standard deviations, minimum and maximum values) were reported for all the test variables. An independent t-test was performed to determine the statistical significance of the differences between the individual and team sport participants regarding their SPSs. The level of significance was set at  $p \leq 0.05$ . The practical significance of differences between the individual and team sport participants were determined by means of

Cohen's  $d$ , with an effect size of 0.3 regarded as small, 0.5 as medium, and an effect size of 0.8 as large (Thomas & Nelson, 2001).

## Results

Table 1 presents the descriptive statistics of the individual and team sport participants as well as the total group. Furthermore, it shows the results of the independent t-test as well as the effect size results of the test variables for the adolescent sport participants.

**Table 1:** Descriptive statistics, independent t-test and effect size results of the test variables for the adolescent sport participants.

Variables	Sport type	N	$\bar{X}$	SD	Min	Max	p-values	ES
Age	1	69	14.50	0.69	13	16	0.82	-0.03
	2	138	14.47	0.87	13	19		
	T	207	14.48	0.82	13	19		
Coping with adversity	1	69	60.63	18.79	17	100	0.57	-0.08
	2	138	59.00	19.34	8	100		
	T	207	59.54	19.13	8	100		
Peaking under pressure	1	69	65.10	18.87	25	100	0.32	-0.15
	2	138	62.20	19.81	0	100		
	T	207	63.16	19.50	0	100		
Goal setting	1	69	64.01	20.78	8	100	0.80	-0.03
	2	138	63.29	19.15	0	100		
	T	207	63.53	19.66	0	100		
Concentration	1	69	60.39	17.99	17	100	0.72	0.05
	2	138	61.35	18.48	0	100		
	T	207	61.03	18.28	0	100		
Freedom from worry	1	69	48.91	19.95	8	100	0.87	-0.02
	2	138	48.43	20.57	0	100		
	T	207	48.59	20.32	0	100		
Confidence	1	69	71.01	17.71	25	100	0.22	-0.18
	2	138	67.69	18.82	33	100		
	T	207	68.80	18.48	25	100		
Ability to be coached	1	69	71.50	18.93	25	100	0.38	-0.13
	2	138	69.02	18.92	17	100		
	T	207	69.85	18.91	17	100		
Average score	1	69	63.08	11.90	36	100	0.39	-0.13
	2	138	61.57	11.97	24	100		
	T	207	62.07	11.94	24	100		

1=Individual sport; 2=Team sport; T=Total group; \*= p-value  $\leq 0.05$

From the results in Table 1 it is clear that the ISPs obtained higher mean scores in seven of the eight SPSs that were measured, namely coping with adversity, peaking under pressure, goal

setting, freedom from worry, confidence, coachability and average score. TSPs outscored the ISPs only in the concentration subscale. However, none of these differences proved to be statistically significant and only showed small practical significance.

### **Discussion**

The purpose of this study was to determine which SPSs discriminate significantly between individual and team adolescent sport participants in a South African context. Due to virtually no literature regarding different sport types and SPS differences among adolescents in a South African context, this study is an exploratory investigation into the differences that may possibly exist between the SPSs of individual and team sport participants. Although ISPs obtained higher mean scores in seven of the eight sport psychological variables that were measured, no differences were statistically or practically significant. Due to the limited literature regarding this topic, only some of the results could be compared to existing literature findings.

With regard to coping with adversity, Tamminen, Holt, and Neely (2012) describe adversity as representing either physical or psychological stressors which could interfere with the normal functioning of a sport participant. Andrew et al. (2007) stated that sport participants who can cope with adversity have the ability to stay calm and keep emotional control, while remaining enthusiastic and being positive regardless of challenging situations. The results from the current study showed that ISPs have a slightly higher average score for coping with adversity compared to the TSPs, although the results are not statistically significant. Nicholls et al. (2007) found that ISPs and TSPs use different coping strategies to deal with performance related adversities, ISPs make use of more emotion-focused coping techniques (e.g., relaxation, self-blame, and visualisation) whereas TSPs use communication more frequently. The results from Nicholls et al. (2007) could be used as a possible explanation for the phenomenon in the current study where the ISPs achieved a slightly higher average score in coping with adversity than TSPs, seeing that ISPs tend to use more difficult coping techniques than their TSP counterparts.

Peaking under pressure refers to the ability of a sport participant to perform under pressure and not to be intimidated by the situation at hand and rather see it as a challenge to succeed (Bourgeois, Loss, Meyers, & Leuens, 2003). Some sport participants respond to pressure by 'choking', while others who adapt to pressured situations exhibit the ability to rapidly return to a normal emotional state (Kruger, Pienaar, Du Plessis, & Van Rensburg, 2012). Choking in sport refers to a process where individuals perceive their resources as insufficient in meeting the demands of the situation, which results in a significant decline in performance (Hill, Hanton, Fleming, & Matthews, 2009). The results from this study indicated that the ISPs showed a

slightly higher average score in the ability to peak under pressure compared to the TSPs. Hill and Shaw (2013) found in a study on rugby, soccer, hockey, volleyball and cricket players that the psychological impact of making mistakes within a team sport may be greater due to the athletes' concerns of letting their team mates down. This corresponds with the findings of Nicholls et al. (2007) who reported that TSPs experienced more stress due to playing in a team (e.g., playing first line up, mistakes of team mates) than ISPs. Therefore the results of the current study are in line with the findings of both Hill and Shaw (2013) and Nicholls et al. (2007), seeing that the ISPs are able to perform better under pressure than TSPs, although the differences were not statistically significant.

According to McCarthy, Jones, Harwood, and Olivier (2010) goal setting is a process by which sport participants set specific objectives relating to their performance. Furthermore, setting goals is a way for sport participants to reach a specific level of accomplishment in a task at hand (McCarthy et al., 2010). The use of goal setting may enhance perceptions and feelings of control, and can improve a sport participant's performance motivation (Thelwell & Greenlees, 2003). The results of this study showed that ISPs obtained a slightly higher average score in goal setting compared to TSPs. The difference is, however, not statistically significant. Jonker, Elferink-Gemser and Visscher (2010) found that ISPs are more affected by their own performance and less dependent on others, whereas TSPs constantly have to act and react to the behaviour of team mates or opponents. This statement might be indicative that ISPs are solely responsible for attaining their goals and are able to set more individual and internalised goals, whereas TSPs have to accomplish goals set by the team and have to depend on team mates to accomplish these goals.

Concentration is the ability of a sport participant to focus on relevant cues in the environment, maintaining that focus over time and shifting attentional focus when necessary (Taylor, 1995; Weinberg & Gould, 2011), regardless of the stimuli sport participants receive from the environment and their own thoughts (Gallucci, 2008). Karageorghis and Terry (2011) stated that when sport participants focus their attention on the right cue at a specific time during performance, they will experience optimal concentration. Furthermore it is important to bear in mind that different sport situations require different attentional demands from the participants (Gelinis & Munroe-Chandler, 2006). In this regard Gelinis and Munroe-Chandler (2006) found in their study on ice hockey goal tenders, that different types of concentration (broad and narrow, internal and external) are essential during a game. A study done on field hockey players, basketball players, volleyball players, speed skaters and swimmers reported that ISPs outscored

TSPs in concentration (Elferink-Gemser et al., 2003). The findings from the current study, although not statistically significant, contradict the findings of Elferink-Gemser et al. (2003) seeing that TSPs have slightly better average concentration than ISPs. This phenomenon could possibly be ascribed to the difference in the level of sport participation. Sport participants participating at a higher level may have more exposure to mental skills training as part of their holistic training program.

According to Weinberg and Gould (2011) worry is associated with a negative emotional state which sport participants experience during performance, with feelings of anxiety, nervousness and apprehension. Freedom from worry is the ability of sport participants to be unaffected by the pressure from performing poorly or the worry of making mistakes (Bourgeois et al., 2003). The results of the current study showed that ISPs presented a slightly higher average score for freedom from worry compared to TSPs, although not statistically significant. Therefore one can conclude that TSPs experience more feelings associated with worry. A possible explanation for this occurrence could be due to the fact that ISPs only have to take responsibility for their own performance whereas TSPs have to act on their team mates' experience of worry.

Self-confidence refers to the belief of a sport participant that he or she can successfully execute a desired performance (Kruger et al., 2012), and includes the perception about their skill to achieve success at a certain level in sport (Tod et al., 2010). The results from this study showed that ISPs presented a somewhat higher average score in self-confidence when compared to TSPs. Elferink-Gemser et al. (2003) found in their study on field hockey players, basketball players, volleyball players, speed skaters and swimmers that individual athletes outscored team sport athletes regarding self-confidence. Therefore the result of the current study concurred with Elferink-Gemser et al. (2003), although it is not statistically significant.

Coaches consider coachability as a significant skill of sport participants (Kruger et al., 2012). Coachability refers to the ability of sport participants to be open for constructive criticism, without taking any offence and to be able to learn from instructions (Bourgeois et al., 2003). According to Kruger et al. (2012) coachability also reflects the reaction of sport participants to feedback, advice and criticism from coaches and managers. The current study shows that ISPs scored slightly higher with regard to coachability when compared to TSPs, but once again the difference is not statistically significant. This occurrence could possibly be ascribed to the nature of the sport. ISPs receive direct instructions which they could execute right away and they are solely responsible for their performance, whereas TSPs will receive individual as well as team

instructions. TSPs therefore have to work as a team to carry out the instructions to the benefit of the team and they have to rely on each other for their performance.

From the above-mentioned discussion it is clear that differences of adolescent sport participants in individual and team sports involved in the current study show a resemblance towards the results found in the available literature. Although the lack of similar studies made direct comparison difficult, it is interesting to note that, in spite of the absence of statistical and practical significance, the same tendencies were observed. The fact that sport type differences did not reach statistical significance could possibly be ascribed to the fact that the majority of subjects in the current study participate in sport on school or recreational level and have not yet specialised in one specific sport and were compared to athletes who compete at elite level.

### **Conclusion**

The purpose of this study was to determine which SPSs discriminate significantly between individual and team adolescent sport participants in a South African context. The results of this study showed small and non-significant differences regarding the SPS use of individual and team sport participants. A tendency was, however, observed where ISPs obtained slightly higher mean scores in the majority of sport psychological variables that were measured, including coping with adversity, peaking under pressure, goal setting, freedom from worry, confidence, coachability and average score. TSPs outscored ISPs only in the concentration subscale.

Literature contains insufficient data regarding possible differences with regard to the SPS use of ISPs and TSPs which make direct comparison difficult. Therefore, this study is exploratory in nature, especially among adolescent sport participants, and of potential value to the field of sport psychology, coaches and sport scientists. The findings can contribute to a better understanding of the SPS use of sport participants of different sporting codes and the development of PST programs of the different sport participants, which could assist coaches in the holistic development of adolescent sport participants.

However, more research is still needed with regards to the SPS use of individual and team sport participants. One possible implication of the current study is that when PST programs are compiled and presented, sport participants at this age could be considered to function as a homogeneous group, meaning that sport participants from both types of sport could participate in the same PST program.

Despite the value of this study, some limitations have been identified. The results cannot be generalised to other sport participating adolescents, since the subject group was not randomly

selected and only selected from one district. Furthermore, gender, ethnicity and socio-economic status were not taken into consideration during the study. It is therefore recommended that the subject group should be larger and should be randomly selected, that the study be conducted on different age, gender and ethnic groups and that a longitudinal study be conducted to determine the age where differences might occur in the SPS use of individual and team sport participants.

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# Chapter 5

## Summary, conclusions, limitations and recommendations

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# 5 Summary, conclusions, limitations and recommendations

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- 5.1 Summary
  - 5.2 Conclusions
  - 5.3 Limitations
  - 5.4 Recommendations
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## 5.1 Summary

A brief summary of this study will be given as discussed in the previous chapters, after which the most important conclusions and limitations will be discussed along with the recommendations that stemmed from this study. Chapter 1 provided the problem statement, the objectives and hypotheses of the study as well as the structure of the dissertation.

The purpose of this study was to explore the sport psychological skills (SPSs) of sport participating adolescents in a South African context with regard to gender differences and differences between individual and team sport participants.

Chapter 2 consisted of a literature overview titled “Sport psychological skills profile of sport participants”. The purpose of this review was to provide information regarding the SPSs profile of sport participants, the most common SPSs used in sport, the relationship of gender and the SPSs profile of sport participants and the relationship of the type of sport and the SPSs profile of sport participants.

From the literature review, it was clear that sport psychology plays an important role in various aspects of sport participants’ lives. The integration of SPSs in sport, equips sport participants with important life skills and sport psychological tools which will lead to the enhancement of sport psychological skill (SPS) use. Literature reveals a variety of SPSs, namely anxiety control, concentration, self-confidence, goal setting, imagery and motivation, which sport participants can use in different combinations, and which specifically relate to their individual needs.

Furthermore, it was indicated that differences exist with regard to the application of SPSs when it comes to different genders as well as the different types of sport of participation. Males tend to show higher levels with regard to confidence, anxiety control and mental preparation whereas females tend to have higher concentration levels. TSPs use SPSs such as fear control, motivation and self-confidence, whereas ISPs use SPSs such as self-talk, imagery and goal setting.

Chapter 3 consisted of the first article titled “Gender differences in the sport psychological skills profile of adolescent sport participants”. The purpose of this study was to determine which SPSs discriminate significantly between male and female adolescents in a South African context. The research data obtained for the present study forms part of a larger five-year longitudinal study, the Physical Activity and Health Longitudinal Study (PAHL-Study). A convenience sample of 211 grade 9 pupils (14-15 years of age) from six different secondary schools participated in the study, which included 89 males and 122 females. Data was obtained by means of a set of questionnaires aimed at gaining demographic and general information, as well as data to determine the sport psychological skills levels of the participants. Descriptive statistics (mean values, standard deviations, minimum and maximum values) were reported for all the test variables. An independent t-test was performed to determine the statistical significance of SPS differences between the males and the females. The level of significance was set at  $p \leq 0.05$ . The results of this study showed non-significant differences between the SPS profile of the males and the females, where the males obtained slightly higher averages in seven of the eight psychological skill variables compared to the females, namely coping with adversity, peaking under pressure, goal setting, concentration, freedom from worry, confidence and average coping ability. However, only one SPS variable (freedom from worry), showed a statistically significant difference where the males obtained a higher average value than the females. From the results it is clear that, although 14-15 year old adolescent sport participants showed similar tendencies regarding their SPSs than what was found in other studies, the differences in our study population have not yet reached significant levels, except for freedom from worry.

Chapter 4 consisted of the second article titled “Sport psychological skills that discriminate between individual and team sport participants”. The purpose of this study was to determine which SPSs discriminate significantly between individual and team adolescent sport participants in a South African context. The research data obtained for the present study forms part of a larger five-year longitudinal study, the Physical Activity and Health Longitudinal Study (PAHL-Study). A convenience sample of 207 grade 9 pupils (14-15 years of age) from six different secondary schools participated in the study, which included 69 team sport participants (TSPs)

and 138 individual sport participants (ISPs). Four of the participants did not indicate whether they participate in a team or individual sport and were therefore excluded from further analysis. Data was obtained by means of a set of questionnaires aimed at obtaining demographic and general information, as well as data on the sport psychological skills of participants. Descriptive statistics (mean values, standard deviations, minimum and maximum values) were reported for all the test variables. An independent t-test was performed to determine the statistical significance of SPS differences between individual and team sport participants. The level of significance was set at  $p \leq 0.05$ . The results showed that ISP obtained higher mean scores in seven of the eight SPSs that were measured, including coping with adversity, peaking under pressure, goal setting, freedom from worry, confidence, coachability and average score. However, none of the subscale differences proved to be statistically significant, with a small practical significance. From the results of this study it is clear that the 14-15 year old individual and team sport participants showed no significant difference in their SPS use and can therefore be treated as a homogeneous group when mental skills training programs are applied.

## 5.2 Conclusions

The conclusions drawn from this study are presented in accordance with the set hypotheses:

**Hypothesis 1:** *The adolescent sport participating males and females will show significantly different SPSs profiles. Males will show significantly higher levels of confidence and coping with adversity, whereas females will exhibit significantly higher levels of concentration and goal setting.*

The results showed that the males obtained slightly higher mean scores in seven of the eight sport psychological skills that were measured. The only difference that proved statistically significant was on the freedom from worry subscale where the males obtained a higher average value than the females. As with the other subscales, this difference proved to be of small practical significance only. Hypothesis 1 is therefore partially accepted due to the fact that freedom from worry was statistically significant.

**Hypothesis 2:** *Adolescent individual and team sport participants will exhibit significantly different SPSs profiles. TSPs will show significantly higher levels of goal setting and peaking under pressure, whereas ISPs will exhibit significantly higher levels of concentration and self-confidence.*

The results showed that ISPs obtained higher mean scores in seven of the eight SPSs that were measured. However, none of these differences proved to be statistically significant and were of only small practical significance. Therefore, hypothesis 2 is rejected.

From the results of the current study, it is clear that although 14 – 15-year-old adolescent sport participants showed similar tendencies in SPS differences regarding gender and type of sport than what was found in other studies, these differences have not yet reached significant levels. The findings can contribute to a better understanding of adolescent sport participants with regard to SPSs, which could lead to the development of psychological skills training programs to ensure optimal development of adolescent sport participants.

### **5.3 Limitations**

The following limitations should be taken into consideration when interpreting the results of this study:

- The subject group was not randomly selected and only selected out of one district, therefore care should be taken in generalising the results of this study to other sport participating adolescents.
- Ethnicity was not taken into consideration - the ratio of black to white was 6:4.
- The study was limited to one sport psychological questionnaire and had to be completed in English. English is not necessarily the first language of all the participants and therefore could have had an influence on the test result, seeing that they may not have understood the questionnaire.
- A limited extent of literature explored the SPS use of sport participating adolescents, which makes the comparison of test results difficult.

### **5.4 Recommendations**

From the outlined limitations in the current study, it is recommended that future research should focus on:

- Including a larger subject group which should be selected randomly, could lead to a smaller ratio difference in ethnicity.

- Conducting the study on different sporting codes, ages and ethnic groups. This information could possibly lead to a better understanding of adolescent sport participants and the use of SPSs in different sporting codes, ages and ethnic groups.
- Conducting a longitudinal study to determine the age where gender and the type of sport will have an influence on SPS use.
- Including other sport psychological questionnaires to ensure an extensive view of a sport participant's SPSs profile. Validate questionnaires in other languages to ensure that sport participants can answer questionnaires in their first language.
- The fact that more studies are required in the field of sport psychology and adolescents to expand the limited existing literature.

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# Appendices

**Appendix A: Ethical approval**

**Appendix B: Informed consent**

**Appendix C: Questionnaires: Physical activity & Athletic coping skills inventory (ACSI-28)**

**Appendix D: Guidelines for authors: Journal of adolescent research & Journal of Psychology in Africa**

**Appendix E: Proof of language editing**

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# Appendix A

## Ethical approval



NORTH-WEST UNIVERSITY  
YUNIBESITHI YA BOKONE-BOPHIRIMA  
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Prof A Monyeki

### Ethics Committee

Tel +27 18 299 4850  
Fax +27 18 293 5329  
Email [Ethics@nwu.ac.za](mailto:Ethics@nwu.ac.za)

### ETHICS APPROVAL OF PROJECT

The North-West University Ethics Committee (NWU-EC) hereby approves your project as indicated below. This implies that the NWU-EC grants its permission that, provided the special conditions specified below are met and pending any other authorisation that may be necessary, the project may be initiated, using the ethics number below.

<b>Project title:</b> Five year Longitudinal Study of Physical Activity status and the Determinants of Health in Adolescents attending high school in Potchefstroom areas of South Africa (PAHLS-Study)																												
<b>Ethics number:</b> <table border="1"><tr><td>N</td><td>W</td><td>U</td><td>-</td><td>0</td><td>0</td><td>5</td><td>8</td><td>-</td><td>1</td><td>0</td><td>-</td><td>A</td><td>1</td></tr><tr><td colspan="3">Institution</td><td colspan="5">Project Number</td><td colspan="2">Year</td><td colspan="4">Status</td></tr></table>	N	W	U	-	0	0	5	8	-	1	0	-	A	1	Institution			Project Number					Year		Status			
N	W	U	-	0	0	5	8	-	1	0	-	A	1															
Institution			Project Number					Year		Status																		
<small>Status: S = Submission, R = Re-Submission, P = Provisional Approval, A = Authorisation</small>																												
<b>Approval date:</b> 2010/07/19	<b>Expiry date:</b> 2015/07/18																											

Special conditions of the approval (if any): None

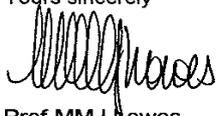
#### General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following:

- The project leader (principle investigator) must report in the prescribed format to the NWU-EC:
  - annually (or as otherwise requested) on the progress of the project,
  - without any delay in case of any adverse event (or any matter that interrupts sound ethical principles) during the course of the project.
- The approval applies strictly to the protocol as stipulated in the application form. Would any changes to the protocol be deemed necessary during the course of the project, the project leader must apply for approval of these changes at the NWU-EC. Would there be deviated from the project protocol without the necessary approval of such changes, the ethics approval is immediately and automatically forfeited.
- The date of approval indicates the first date that the project may be started. Would the project have to continue after the expiry date, a new application must be made to the NWU-EC and new approval received before or on the expiry date.
- In the interest of ethical responsibility the NWU-EC retains the right to:
  - request access to any information or data at any time during the course or after completion of the project;
  - withdraw or postpone approval if:
    - any unethical principles or practices of the project are revealed or suspected,
    - it becomes apparent that any relevant information was withheld from the NWU-EC or that information has been false or misrepresented,
    - the required annual report and reporting of adverse events was not done timely and accurately,
    - new institutional rules, national legislation or international conventions deem it necessary.

The Ethics Committee would like to remain at your service as scientist and researcher, and wishes you well with your project. Please do not hesitate to contact the Ethics Committee for any further enquiries or requests for assistance.

Yours sincerely

A handwritten signature in black ink, appearing to read 'MMJ Lowes', written in a cursive style.

Prof MMJ Lowes  
*(chair NWU Ethics Committee)*

# Appendix B

## Informed consent form

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School of Biokinetics, Recreation and Sport Science  
Private Bag x6001,  
Potchefstroom  
2520  
South Africa  
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Fax: +27 18 299 1808  
E-mail: andries.monyeki@nwu.ac.za  
25 January 2010  
<http://www.nwu.ac.za>

### INFORMATION LETTER TO THE PARENTS AND CONSENT FORMS: *PAHLS STUDY*

Dear Parent or Guardian,

Your child is been invited to participate in a study entitled – Five year Longitudinal Study of Physical Activity status and the Determinants of Health in Adolescents attending high school in Potchefstroom areas of South Africa (*PAHLS-Study, 2010–2014*).

My name is Professor Makama Andries Monyeki (from Potchefstroom Campus of the North-West University) principal investigator in the project together with the research team would like to ask your permission to allow your child (or a child under your care) to participate in our study. To give the background of the study, research revealed that physical activity in adolescents is drastically declining. The decline in the level of physical activity of human populations has been observed, and such decline is been associated with increased mechanization, reliance on technology and urbanization, and the high rate of crime in South Africa. Physical inactivity is thought to be one of the main risk factors for the development of obesity, diabetes, cardiovascular disease, osteoporosis and psychological constraints or risks of behavioral health. Therefore, the purpose of this study is to gather information about physical activity (i.e. by questionnaire & ActiHeart rate monitor) and health determinants (i.e. through measurements of anthropometry, maturation, blood pressure measurement, health-related physical fitness, social

and self-efficacy questionnaire, resting metabolic rate, oxygen consumption (by the use of a portable gas analyser apparatus), blood sampling, leisure and recreation constraint questionnaires, nutritional intake questionnaire as questionnaire on risk factors of life) over a period of five years (2010–2014).

Participation in this study is not part of the child's regular classroom work; it is an optional activity in which the learner can choose to participate. The study will assess and test the following variables: anthropometric measurements, maturation, blood pressure measurement, health-related physical fitness, social and self-efficacy questionnaire, resting metabolic rate, oxygen consumption, blood sampling, leisure and recreation constraint questionnaires, nutritional intake questionnaire as questionnaire on risk factors of life. Blood samples will be collected by a registered professional nurse who will oblige to health profession practices at all times. The data of the study will be used for research purpose only. The measurements will not be shared with your child classmates or teacher. All information collected in this study will be kept confidential. Your child's participation is important because the information that shall be gathered on him/her will help him/her with knowledge for personal development and life skills.

Your child participation in the project is very important, but it is entirely your choice. If your child chooses to refuse to participate in any part of the study or withdraw from the study at any time, for any reason, this will not cause anyone to be upset or angry, and this will not result in any type of penalty.

There are no costs required from your child (or a child under your care) to participate in the study. Further, no payment will be granted to your child (or a child under your care) for participating in the study.

If you have any question regarding this study, please feel free to call me at (018) 2991790 / e-mail:andries.monyeki@nwu.ac.za or the PHASrec Niche Area Leader Dr Hanlie Moss at (018) 2991821 / e-mail:hanlie.moss@nwu.ac.za. If you have any questions regarding your rights or your child's rights as participants in this study you can call Ms Hannekie Botha at (018) 299 4850 from Potchefstroom Campus of the North-West University Research Ethics Office.

Thank you, in advance, for considering your child participation in this study. Should you choose that your child participate, please read and sign the attached consent form. Keep one consent form for your records and return the other copy. All received consent form will be kept locked during the entire period of the study. In addition, your child is requested to bring along his/her birth clinic card. The card will be given back to the child immediately after collecting information on birth date and birth weight. A child who shall have returned a completed and signed consent form will participate in the study.

Sincerely,  
Prof. Makama Andries Monyeki  
Principal Investigator – PAHLS Study

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CONSENT FORM (Parent/Guardian Copy)  
FIVE YEAR LONGITUDINAL STUDY OF PHYSICAL ACTIVITY STATUS AND THE  
DETERMINANTS OF HEALTH IN ADOLESCENTS ATTENDING HIGH SCHOOL IN  
POTCHEFSTROOM AREAS OF SOUTH AFRICA (*PAHLS-STUDY, 2010–2014*).

I, ....., father/mother/guardian of .....  
agree to permit my child to provide the information on physical activity (i.e. by questionnaire & ActiHeart rate monitor) and health determinants (i.e. through measurements of anthropometry, maturation, blood pressure measurement, health-related physical fitness, social and self-efficacy questionnaire, resting metabolic rate, oxygen consumption (by the use of a portable gas analyser apparatus), blood sampling, leisure and recreation constraint questionnaires, nutritional intake questionnaire as questionnaire on risk factors of life), by the researchers at my child school. I understand that the results of this study of Five year longitudinal study of physical activity status and the determinants of health in adolescents attending high school in Potchefstroom areas of South Africa (*PAHLS-STUDY NWP*) will be used for research purpose and nothing else. I am aware that if I have any question or concerns about the study I can contact the researcher at (018) 299 1790 or the PHASRec Niche Area Leader at (018) 299 1821. Any questions or concerns regarding my child rights as a participant in this study can be addressed to Ms Hannekie Botha at (018) 299 4850 from Potchefstroom Campus of the North-West University Research Ethics Office. I understand that there will be no discomfort or foreseeable risks for my child to participate in the study. I understand that all information my child provide will remain strictly confidential. I have read and understand the information provided above and in the information letter. I have been provided with the opportunity to ask questions and my questions have been answered satisfactorily. I consent to have my child participate in the study described above, understanding that he/she may refuse to participate in any part of the study and can withdraw from the study at any time. I have kept one copy of this consent for my records and will return the second copy with the clinic birth card. I am aware that by giving consent my child can participate in the study. The return consent form will be kept locked during the entire period of the study.

Child's Age:.....

Grade:.....

Teacher:.....

School Name:.....

Name of Child:.....

Name of Parent/Guardian:.....

.....  
(Signature of Child)

.....  
(Signature of Parent/Guardian)

.....  
(Date)

.....  
(Date)

# Appendix C

## Questionnaires: Physical activity

### PHYSICAL ACTIVITY QUESTIONNAIRE (PAHLS-IPAQ)

#### A: GENERAL INFORMATION ABOUT YOU

School:									
Grade:									
School number:									
Name of the participant:									
Subject number:									
Address:									
Date of Survey			Grade	Sex (mark with a X)		Date of birth			Age
dd	mm	yy		F	M	dd	mm	yy	

*In the next few questions cross out the answers that are applicable to you!!*

#### Ethnic group

White	Coloured	Black	Indian
-------	----------	-------	--------

Do you participate in sport or have you been participating in sport during the last two years?

YES

NO

If your answer is YES, answer the next questions, and IF your answer is NO go to the next page.

#### INFORMATION REGARDING SPORT AND TRAINING HABITS

1. Type of sport that you are participating in or did participate in during the last two years – main sport.

Soccer	Rugby	Netball	Hockey	Volleyball	Athletics Javelin/ Shot pot/ Discus	Athletics Long jump/High jump
--------	-------	---------	--------	------------	--	--

Athletics 100m/ 200m	Athletics 400m	Athletics 800m	Athletics 1500m	Athletics Cross country	Tennis	Squash
Badminton	Cricket	Golf	Wrestling	Boxing	Karate	Swimming
Cycling	Triathlon	Biathlon	Duathlon	Ballet	Artistic gymnastics	Rhythmic gymnastics

Other: \_\_\_\_\_

2. **Type of sport** that you are participating in or did participate in during the last two years – **secondary sport**.

Soccer	Rugby	Netball	Hockey	Volleyball	Athletics Javelin/ Shot pot/ Discus	Athletics Long jump/High jump
Athletics 100m/ 200m	Athletics 400m	Athletics 800m	Athletics 1500m	Athletics Cross country	Tennis	Squash
Badminton	Cricket	Golf	Wrestling	Boxing	Karate	Swimming
Cycling	Triathlon	Biathlon	Duathlon	Ballet	Artistic gymnastics	Rhythmic gymnastics

Other: \_\_\_\_\_

3. **Years you've been participating** in your main sport.

<1 year	1-2 years	3-4 years	5-6 years	7-8 years	8-9 years	>9 years
---------	-----------	-----------	-----------	-----------	-----------	----------

4. **Years you've been participating** in your secondary sport.

<1 year	1-2 years	3-4 years	5-6 years	7-8 years	8-9 years	>9 years
---------	-----------	-----------	-----------	-----------	-----------	----------

5. Frequency of training - how many **days per week** do/did you normally train for your main sport?

1 day	2 days	3 days	4 days	5 days	6 days	7 days
-------	--------	--------	--------	--------	--------	--------

6. Frequency of training - how many **days per week** do/did you normally train for your secondary sport?

1 day	2 days	3 days	4 days	5 days	6 days	7 days
-------	--------	--------	--------	--------	--------	--------

7. Frequency of training - how many **days per week** do/did you normally do weight training?

1 day	2 days	3 days	4 days	5 days	6 days	7 days
-------	--------	--------	--------	--------	--------	--------

8. Frequency of training - how many **days per week** do/did you normally do training on the field/track/court or in the pool/ring?

1 day	2 days	3 days	4 days	5 days	6 days	7 days
-------	--------	--------	--------	--------	--------	--------

9. How many hours per day do/did you normally train?

1 hour	2 hours	3 hours	4 hours	5 hours	6 hours	7 or more
--------	---------	---------	---------	---------	---------	-----------

10. On what level do/did you compete in your main sport?

Recreational	School	Provincial	National
--------------	--------	------------	----------

11. On what level do/did you compete in your secondary sport?

Recreational	School	Provincial	National
--------------	--------	------------	----------

12. What is the best performance/s that you achieved in your main sport:

Year	Sport	Distance/Height/Time/ Team/Achievement

**INFORMATION REGARDING MATURITY**

1. For girls only: At what age did you experience menarche?

9 years	10 years	11 years	12 years	13 years	14 years	Not yet
---------	----------	----------	----------	----------	----------	---------

2. For boys only: At what age did your voice break?

11 years	12 years	13 years	14 years	Not yet
----------	----------	----------	----------	---------

**SECTION B: PHYSICAL ACTIVITY QUESTIONNAIRE**

**IT IS IMPORTANT TO ANSWER ALL QUESTIONS, AND BE HONEST WITH YOUR ANSWERS**

1. During the last 7 days, on how many days did you do very hard physical activities like heavy lifting, digging, aerobics, or fast bicycling?

\_\_\_\_\_ days per week

No very hard physical activities → Skip to question 3

2. How much time did you usually spend doing very hard physical activities on one of those days?

\_\_\_\_\_ hours per day  
\_\_\_\_\_ minutes per day

Don't know/Not sure

3. During the last 7 days, on how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

\_\_\_\_\_ days per week

No moderate physical activities → *Skip to question 5*

4. How much time did you usually spend doing moderate physical activities on one of those days?

\_\_\_\_\_ hours per day  
\_\_\_\_\_ minutes per day

Don't know/Not sure

5. During the last 7 days, on how many days did you walk for at least 10 minutes at a time?

\_\_\_\_\_ days per week

No walking → *Skip to question 7*

6. How much time did you usually spend walking on one of those days?

\_\_\_\_\_ hours per day  
\_\_\_\_\_ minutes per day

Don't know/Not sure

7. During the last 7 days, how much time did you spend sitting on a week day? (watching TV, Videogames/Internet, Listening to music, reading)

\_\_\_\_\_ hours per day  
\_\_\_\_\_ minutes per day

Don't know/Not sure

# Questionnaires:

## Athletic coping skills inventory (ACSI-28)

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### ATHLETIC COPING SKILLS INVENTORY (ACSI-28)

1. On a daily or weekly basis, I set very specific goals for myself that guide what I do.  
a. almost never      b. sometimes      c. often      d. almost always
  2. I get the most out of my talents and skills.  
a. almost never      b. sometimes      c. often      d. almost always
  3. When a coach or manager tells me how to correct a mistake I've made, I tend to take it personally and feel upset.  
a. almost never      b. sometimes      c. often      d. almost always
  4. When I participate in sport, I can focus my attention and block out distractions.  
a. almost never      b. sometimes      c. often      d. almost always
  5. I remain positive and enthusiastic during competition, no matter how badly things are going.  
a. almost never      b. sometimes      c. often      d. almost always
  6. I tend to perform better under pressure because I think more clearly.  
a. almost never      b. sometimes      c. often      d. almost always
  7. I worry quite a bit about what others think about my performance.  
a. almost never      b. sometimes      c. often      d. almost always
  8. I tend to do lots of planning about how to reach my goals.  
a. almost never      b. sometimes      c. often      d. almost always
-

9. I feel confident that I will perform.
- a. almost never      b. sometimes      c. often      d. almost always
10. When a coach or manager criticises me, I become upset rather than helped.
- a. almost never      b. sometimes      c. often      d. almost always
11. It is easy for me to keep distracting thoughts from interfering with something I am watching or listening to.
- a. almost never      b. sometimes      c. often      d. almost always
12. I put a lot of pressure on myself by worrying how I will perform.
- a. almost never      b. sometimes      c. often      d. almost always
13. I set my own performance goals for each practise.
- a. almost never      b. sometimes      c. often      d. almost always
14. I don't have to be pushed to practice or compete hard; I give 100%.
- a. almost never      b. sometimes      c. often      d. almost always
15. If a coach criticises or yells at me, I tell myself to keep calm, and this works for me.
- a. almost never      b. sometimes      c. often      d. almost always
16. I handle unexpected situations in my sport very well.
- a. almost never      b. sometimes      c. often      d. almost always
17. When things are going badly, I tell myself to keep calm, and this works for me.
- a. almost never      b. sometimes      c. often      d. almost always
18. The more pressure there is during a competition, the more I enjoy it.
- a. almost never      b. sometimes      c. often      d. almost always
19. While competing, I worry about making mistakes or failing to come through.
- a. almost never      b. sometimes      c. often      d. almost always
20. I have my own game plan worked out in my head long before the competition begins.
- a. almost never      b. sometimes      c. often      d. almost always
-

21. When I feel myself getting to tense, I can quickly relax my body and calm myself.

- a. almost never      b. sometimes      c. often      d. almost always

22. To me, pressure situations are challenges that I welcome.

- a. almost never      b. sometimes      c. often      d. almost always

23. I think about and imagine what will happen if I fail or screw up.

- a. almost never      b. sometimes      c. often      d. almost always

24. I maintain emotional control no matter how things are going for me.

- a. almost never      b. sometimes      c. often      d. almost always

25. It is easy for me to direct my attention and focus on a single object or person.

- a. almost never      b. sometimes      c. often      d. almost always

26. When I fail to reach my goals, it makes me even try harder.

- a. almost never      b. sometimes      c. often      d. almost always

27. I improve my skills by listening carefully to advice and instruction from coaches and managers.

- a. almost never      b. sometimes      c. often      d. almost always

28. I make fewer mistakes when the pressure's on because I concentrate better.

- a. almost never      b. sometimes      c. often      d. almost always
-

## SPORT COPING VAARDIGHEIDSINVENTARIS (ACSI-28)

1. Ek stel op 'n daaglikse of weeklikse basis vir myself spesifieke doelwitte om my te lei in wat ek moet doen.  
a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
  2. Ek maak die beste gebruik van my talente en vaardighede.  
a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
  3. Wanneer my afrigter of bestuurder 'n fout wat ek gemaak het korrigeer, neem ek dit persoonlik op en voel ek onsteld daaroor.  
a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
  4. Ek kan my aandag tydens sportdeelname fokus en steurnisse uitskakel.  
a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
  5. Ek bly positief en optimisties tydens kompetisies, ongeag hoe sleg dinge gaan.  
a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
  6. Ek is geneig om beter onder druk te presteer omdat ek helderder dink.  
a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
  7. Ek bekommer myself nogal heelwat oor wat ander van my vertoning dink.  
a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
  8. Ek is geneig om baie beplanning te doen oor hoe om my doelwitte te bereik.  
a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
  9. Ek voel selfverseker dat ek goed sal presteer.  
a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
  10. As 'n afrigter of bestuurder my kritiseer onstel dit my in plaas daarvan dat dit my help.  
a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
  11. Ek vind dit maklik om afleidende gedagtes wat inmeng met dit waarna ek kyk of luister, uit te skakel.  
a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
-

12. Ek plaas baie druk op myself deur my te bekommer oor hoe ek sal presteer.
- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
13. Ek stel my eie prestasiedoelwitte vir elke oefening.
- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
14. Ek hoef nie gedruk te word om hard te oefen of te kompeteer nie; ek gee 100%.
- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
15. Indien 'n afrigter my kritiseer of op my skreeu, herstel ek my fout sonder om daarvoor ontsteld te raak.
- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
16. Ek hanteer onverwagte situasies in my sport baie goed.
- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
17. As dinge sleg gaan sê ek vir myself om kalm te bly en dit werk vir my.
- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
18. Hoe meer druk ek tydens kompetisies ervaar, hoe meer geniet ek dit.
- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
19. Ek bekommer myself tydens deelname dat ek foute sal begaan of nie sal slaag nie.
- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
20. Lank voor die aanvang van 'n kompetisie het ek reeds my eie kompetisieplan in my kop uitgewerk.
- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
21. Wanneer ek voel dat ek te gespanne raak, kan ek vinnig my liggaam ontspan en myself kalmeer.
- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
22. Ek sien druksituasies as uitdagings en verwelkom dit.
- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
23. Ek dink en visualiseer oor wat sal gebeur as ek misluk of fouteer.
- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
-

24. Ek bly in beheer van my emosies ongeag hoe dinge vir my verloop.

- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd

25. Dit is vir my maklik om my aandag te rig en te fokus op 'n enkele voorwerp of persoon.

- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd

26. Indien ek misluk om my doelwitte te bereik, probeer ek net harder.

- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd

27. Ek verbeter my vaardighede deur aandagtig te luister na die advies en instruksies van my afrigters en bestuurders.

- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd

28. Ek begaan minder foute onder druk omdat ek beter konsentreer.

- a. omtrent nooit      b. soms      c. dikwels      d. omtrent altyd
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# Appendix D

## Guidelines for authors: Journal of adolescent research

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### GUIDELINES FOR MANUSCRIPT SUBMISSION

The **JOURNAL OF ADOLESCENT RESEARCH** publishes articles on a wide range of topics that pertain to development during adolescence and emerging adulthood. The emphasis of the journal is on publishing papers that combine qualitative and quantitative data or are solely qualitative. Papers with qualitative data should include excerpts that present the voices of adolescents.

In order to be considered for review, papers must meet at least one of the following criteria:

1. Combine quantitative and qualitative data;
2. Take a systematic qualitative or ethnographic approach;
3. Use an original and creative methodological approach;
4. Address an important but rarely studied topic (this could include papers with strictly quantitative data);
5. Present new theoretical or conceptual ideas.

In addition, all articles must show an awareness of the cultural context of the research questions asked, the population studied, and the results of the study. Each paper submitted **MUST** include a cover letter indicating how the paper meets at least one of these criteria and the cultural requirement. For more on the standards for publication in JAR see:

Arnett, J. J. (2005). The Vitality Criterion: A new standard of publication for Journal of Adolescent Research. *Journal of Adolescent Research*, 20, 3-7.

In addition to journal articles, Journal of Adolescent Research publishes Editorial Essays, which are short (3000 words or less) pieces in which an author presents challenging new ideas. There will be few or (preferably) no citations, and authors of the essays will be encouraged to draw upon opinions, insights, and even personal experience. In Editorial Essays scholars may present

new ideas that may have limited empirical support but could inspire new thinking and research. Some essays may provide a thoughtful critique of a research area while making constructive suggestions for new ways of approaching it. Other Essays could analyze a recent event, commenting on the developmental context when adolescents or emerging adults are in the news for involvement in something widely discussed. Policy discussions and advocacy are also welcome in the Essays. Scholars interested in writing and submitting an Editorial Essay should query the editor first to confirm the appropriateness of the proposed topic.

JAR also publishes a limited number of book reviews. Authors or editors who wish to have a book considered for review should query the Book Review Editor, Marilyn Montgomery, at [montgomm@fiu.edu](mailto:montgomm@fiu.edu).

The journal accepts **ELECTRONIC SUBMISSIONS ONLY**. Manuscripts should be submitted via e-mail (in MicrosoftWord format) to Jeffrey Jensen Arnett, Editor, at [arnett@jeffreyarnett.com](mailto:arnett@jeffreyarnett.com). The editor or associate editor reviews all manuscripts within one month, then informs the author whether or not the paper has been judged to meet the JAR criteria and will therefore be sent out for review.

In general, manuscripts should not exceed 30 typed, double-spaced pages, including references, tables, and figures. Figures and tables should be included as part of the manuscript, not as separate files. Five to six keywords, to be used in archival retrieval systems, should be indicated on the title page. The title page should also include contact information for the first author, including affiliation, mailing address, e-mail address, and phone and fax numbers. Manuscripts should include an abstract of no more than 120 words following the title page. Text and references must conform to APA style, as stated in the Publication Manual of the American Psychological Association (Fifth Edition).

Permission for use of the copyrighted material is the responsibility of the author. All artwork must be camera ready. Submission of a manuscript implies commitment to publish in the journal. Authors submitting manuscripts to the journal should not simultaneously submit them to another journal, nor should manuscripts have been published elsewhere in substantially similar form or with substantially similar content. Authors in doubt about what constitutes prior publication should consult the editor.

# Guidelines for authors:

## Journal of Psychology in Africa

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### Journal of Psychology in Africa

#### Instructions to authors

##### Manuscripts

Manuscripts should be submitted in English, French, Portuguese or Spanish. They should be typewritten and double-spaced, with wide margins, using one side of the page only. Manuscripts should be submitted to the Editor-in-Chief, Journal of Psychology in Africa, Professor Elias Mpofu, PhD., CRC, Associate Professor, Faculty of Health Sciences, University of Sydney, Cumberland Campus, East Street, PO Box 170 Lidcombe NSW 1825, Australia, email: e.mpofu@usyd.edu.au. We encourage authors to submit manuscripts via e-mail, in MS Word, but we also require two hard copies of any e-mail submission. Before submitting a manuscript, authors should peruse and consult a recent issue of the *Journal of Psychology in Africa* for general layout and style. Manuscripts should conform to the publication guidelines of the latest edition of the American Psychological Association (APA) publication manual of instructions for authors.

##### Manuscript format

All pages must be numbered consecutively, including those containing the references, tables and figures. The typescript of manuscripts should be arranged as follows:

**Title:** This should be brief, sufficiently informative for retrieval by automatic searching techniques and should contain important key-words (preferably <10 words).

**Author(s) and Address(es) of author(s):** The corresponding author must be indicated. The author's respective addresses where the work was done must be indicated. An e-mail address, telephone number and fax number for the corresponding author must be provided.

**Abstract:** Articles and abstracts must be in English. Submission of abstracts translated to French, Portuguese and/or Spanish is encouraged. For data-based contributions, the abstract should be structured as follows: *Objective* - the primary purpose of the paper, *Method* – data source, subjects, design, measurements, data analysis, *Results* – key findings, and *Conclusions* – implications, future directions. For all other contributions (except editorials, letters and book reviews) the abstract must be a concise statement of the content of the paper. Abstracts must not

exceed 120 words. It should summarize the information presented in the paper but should not include references.

**Referencing:** Referencing style should follow APA manual of instructions for authors.

**References in text:** References in running text should be quoted as follows: (Louw & Mkize, 2004), or (Louw, 2004), or Louw (2000, 2004a, 2004b), or (Louw & Mkize, 2004), or (Mkize, 2003; Louw & Naidoo, 2004). All surnames should be cited the first time the reference occurs, e.g., Louw, Mkize, and Naidoo (2004) or (Louw, Mkize, & Naidoo, 2004). Subsequent citations should use **et al.**, e.g. Louw et al. (2004) or (Louw et al., 2004). ‘Unpublished observations’ and ‘personal communications’ may be cited in the text, but not in the reference list. Manuscripts accepted but not yet published can be included as references followed by ‘in press’.

**Reference list:** Full references should be given at the end of the article in alphabetical order, using double spacing. References to journals should include the author’s surnames and initials, the full title of the paper, the full name of the journal, the year of publication, the volume number, and inclusive page numbers. Titles of journals must not be abbreviated. References to books should include the authors’ surnames and initials, the year of publication, the full title of the book, the place of publication, and the publisher’s name. References should be cited as per the examples

below:

Appoh, L. (1995). The effects of parental attitudes, beliefs and values on the nutritional status of their children in two communities in Ghana (Unpublished master’s thesis). University of Trondheim, Norway.

Peltzer, K. (2001). Factors at follow-up associated with adherence with directly observed therapy (DOT) for tuberculosis patients in South Africa. *Journal of Psychology in Africa, 11*, 165-185.

Sternberg, R. J. (2001, June). *Cultural approaches to intellectual and social competencies*. Paper presented at the Annual Convention of the American Psychological Society, Toronto, Canada.

Cook, D. A., & Wiley, C. Y. (2000). Psychotherapy with members of the African American churches and spiritual traditions. In P. S. Richards & A. E. Bergin (Ed.), *Handbook of psychotherapy and religiosity diversity* (pp. 369-396). Washington, DC: American Psychological Association.

**Tables:** Tables should be either included at the end of the manuscript or as a separate file. Indicate the correct placement by indicating the insertion point in brackets, e.g., <Insert Table 1

approximately here>. Tables should be provided as either tab-delimited text or as a MS Word table (One item/cell). Font for tables should be Helvetica text to maintain consistency.

**Figures/Graphs/Photos:** Figures, graphs and photos should be provided in graphic format (either JPG or TIF) with a separate file for each figure, graph or photo. Indicate the correct placement by indicating the insertion point in brackets, e.g., <Insert Figure 1 approximately here>. Provide the title for the item and any notes that should appear at bottom of item in the manuscript text. Items should be cropped to avoid the appearance of superfluous white space around items. Text on figures and graphs should be Helvetica to maintain consistency. Figures must not repeat data presented in the text or tables. Figures should be planned to appear to a maximum final width of either 80 or 175 mm. (3.5 or 7.0"). Complicated symbols or patterns must be avoided. Graphs and histograms should preferably be two-dimensional and scale marks provided. All lines should be black but not too heavy or thick (including boxes). Color only in photos or color sensitive graphic illustrations. Extra charges will be levied for color printing.

**Text:** 1. Do not align text using spaces or tabs in references. Use one of the following: (a) use CTRL-T in Word 2007 to generate a hanging indent or (b) MS Word allows author to define a style (e.g., reference) that will create the correct formatting. 2. Per APA guidelines, double space should follow any punctuation. 3. Do not insert spaces at the beginning or end of paragraphs. 4. Do not use color in text.

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Instructions to authors are available at: <http://www.elliottfitzpatrick.com>

# Appendix E

## Proof of language editing

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**Lorna Keough**  
APTrans (SATI)  
(Accredited Professional Translator  
South African Translators' Institute)

### AAN WIE DIT MAG AANGAAN

Ek bevestig hiermee dat die taalversorging van, Sport psychological skills profile of 14- and 15-year old sport participants in Tlokwe Municipality: the PAHL-Study, van Elsunet du Plessis deur my gedoen is.

**L Keough**  
**Professionele Vertaler geakkrediteer by die**  
**Suid-Afrikaanse Vertalersinstituut**  
**Lid nommer 1011951**

3 Desember 2013