South African Journal for Research in Sport, Physical Education and Recreation, 2019, 41(3): 31 - 38.
Suid-Afrikaanse Joernaal vir Navorsing in Sport, Liggaamlike Opvoedkunde en Ontspanning, 2019, 41(3): 31 - 38.
ISBN: 0379-9069

GENDER COMPARISONS OF SPORT PSYCHOLOGICAL SKILLS PROFILE OF ADOLESCENT SPORT PARTICIPANTS

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ABSTRACT

The primary aim of this study was to explore gender differences regarding the sport psychological skills (SPS) profile of adolescent sport participants in a South African context. The present study forms part of an extensive five-year longitudinal study, the Physical Activity and Health Longitudinal Study (PAHL-Study). A cross-sectional research design was used to gather quantitative data. Two hundred and eleven (89 boys and 122 girls) grade nine pupils (14 and 15 years of age) participated in the study. The participants completed the Athletic Coping Skills Inventory for Sport (ACSI-28) to determine their SPS profile. The results showed that the boys obtained higher mean scores in seven of the eight measured sport psychological skills. Freedom from worry was the only skill that yielded a statistically significant difference, with the boys (52.06±20.27) obtaining a higher mean value than the girls (46.17±20.56). In conclusion, the current findings indicated that, at this developmental level of competitive sport, boys and girls participants seem to be very similar regarding their sport psychological skills dispositions.

Keywords*:* Adolescents; Gender differences; Participation; Profile; Psychological skills; Sports participants.

INTRODUCTION

Success in sport is determined by various factors, such as technical, tactical, physiological, anthropometric, as well as sport psychological skills (SPSs) (Elferink-Gemser *et al.,* 2004). SPSs include a variety of constructs or components including motivation, self-confidence, arousal/activation and anxiety control, interpersonal skills, goal setting, concentration, focusing, positive thinking and mental imagery (Taylor, 1995). All sports participants exhibit different physical and psychological skills dispositions. Therefore, the study aimed to identify specific psychological skills of adolescent sport participants of different genders.

Gender has emerged as a disguising differentiating interpersonal variable within the existing sport psychology literature, as significant differences have been reported in the sport psychological skill levels of men and women who participate in sport (Jones *et al.*, 1991; Katsikas *et al.,* 2009). Gender has been highlighted as one factor that differentiates between

athletes within the same or different competitive levels regarding their sport psychological skills levels (Gallucci, 2008; Grossbard *et al.*, 2009; Katsikas *et al*., 2009).

Studies from various sports codes, such as hockey, basketball, volleyball, speed skating and swimming revealed that woman athletes displayed higher concentration levels than men, while men outscored their woman counterparts in confidence, anxiety control and mental preparation (Elferink-Gemser *et al*., 2005; Grossbard *et al*., 2009; Katsikas *et al*., 2009). Conversely, a study by Kruger and Pienaar (2014) found no significant differences in the SPSs among 204 Grade 8 South African boys and girls. Furthermore, woman athletes tend to use more emotion-focused coping, are more goal orientated and tend to focus more on personal goals. On the other hand, men tend to use more problem-focused coping, are more outcome orientated and focus more on interpersonal comparison and competitiveness (Jones *et al*., 1991; Gallucci, 2008; Katsikas *et al*., 2009).

Sports psychological skills have been highlighted as a decisive factor in athletic success (Cox & Liu, 1993; Elferink-Gemser *et al*., 2005; Katsikas *et al*., 2009; Slater & Tiggemann, 2011) and the acquisition of these skills during the formative years of an athlete is especially beneficial to the individual's development (Julien, 2002; Smoll & Smith, 2002). Additionally, Malebo *et al.* (2007) underscored the imperative nature of sports participation in the psychological development of adolescents. 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).

McCarthy *et al.* (2010) imply that the incorporation of SPSs into the training and competition regime of adolescents, facilitate remarkable physical skill development, as well as enhancing the fluidity to which they can employ such SPS into competition-specific situations. Youth sport and participation in physical activity may be particularly beneficial to improve physical and psychological well-being (Sit & Linder, 2005). Physical activity and exercise have been associated with positive mood, lower anxiety, optimistic self-perceptions and enhanced self-worth (Slater & Tiggemann, 2011).

PURPOSE OF STUDY

This study aimed to explore the SPSs of sport-participating adolescents in South Africa concerning possible gender differences. Copious literature has reported the importance of SPSs in performance excellence, and that gender differences exist between elite and non-elite sport participants (Elferink-Gemser *et al.*, 2005; Gallucci, 2008; Grossbard *et al.*, 2009; Katsikas *et al.*, 2009). However, there appears to be a paucity of research on the gender differences regarding the sport psychological skills profile of adolescent sport participants within the South African context.

METHODOLOGY

Research design

A cross-sectional research design was used to gather quantitative data. The present study formed part of an extensive five-year (2010–2014) observational, multidisciplinary study, the Physical Activity and Health Longitudinal Study (PAHL-Study). The overall goal of the

PAHL-Study was to describe the development of physical activity, determinants of health risk factors and the SPSs of learners attending high schools in the North-West Province in South Africa. Detail about the PAHL-Study are published elsewhere (Monyeki *et al*., 2012).

Participants

The participants in the PAHL-Study were randomly selected from six schools within the Potchefstroom area of the North West Province, South Africa. The participants surveyed in the current study were recruited from four schools within the town of Potchefstroom and the Ikageng township just outside Potchefstroom. The schools included in the study were selected based on the socio-economic parameters (affluent and non-affluent schools) based on the South African Department of Education's categorisation of schools into quintiles (Q1-Q5) according to physical condition, school paying school fees, facilities, crowding and the relative poverty of the community around the schools (DoE, 2003).

In keeping with the protocol of the PAHL-Study, the survey included only 14- and 15-year-old adolescent sport participants from the selected schools. Also, only adolescents who were healthy and free of any disability, 14 years of age, Grade 9, and whose parents gave informed consent, could participate in the study. Participants who voluntarily withdrew from the study or those who lacked cooperation to participate in the study were excluded. Participants whose data were incomplete were excluded from further analysis.

The mean age of the total group of participants (N=211) was 14.45±0.61 years [boys (n=122): 14.63±0.53 years; girls (n=89): 14.56±0.52 years]. The participants represented various sporting codes. Soccer accounted for 19%, rugby 11%, netball 38%, hockey 9% and other sporting codes share percentage scores ranging from 0.6 to 4%. Most boys participated in soccer (38%), and rugby (23%), while the girls participated in netball (61%) and hockey (12%).

Procedure

The study was approved by the District Director of the Department of Education, as well as by the Research Ethics Committee of the North-West University (Number: 0058-01-A1). The testing was conducted during school hours at the various schools. During the weeks before the study, the school authorities, parents and pupils received an informed consent form which explained the nature and objectives of the research project. Participants reserved the right to withdraw from the study without any punitive consequences and their right to anonymity and privacy was guaranteed. The questionnaires were completed under the supervision of a researcher who has expertise in the field of sport psychology and who could help pupils with any questions or explain any terminology if needed.

Data collection

Data were obtained using a set of questionnaires and included demographic and general information, as well as the sport psychological skill levels of these participants. The demographic and general information questionnaire consisted of questions aimed at gaining information about each participants' demographic profile (age, gender) and their sport participation.

The sport psychological skill levels of each participant were measured using the Athletic Coping Skills Inventory (ACSI-28) of Smith *et al.* (1995). The ACSI-28 questionnaire consists of 28 statements measuring seven distinct sport psychological skills, namely coping with

adversity, peaking under pressure, goal-setting/mental preparation, concentration, freedom from worry, confidence and achievement motivation, and coachability. Each of the seven subscales comprised of four statements regarding the use of sport psychological skills of the participants. The participants could respond using a 4-point Likert scale ranging from 0 (never) to 3 (always). Subscale scores could range from a low of 0 to a high of 12, with higher scores indicating greater strengths on that subscale. These values were converted to percentages, with higher percentages indicating greater strengths on the specific subscale.

Previous studies demonstrated good overall test-retest reliability (r=0.87) of the ACASI-28. The test-retest reliability for the seven subscales varied between 0.47 to 0.87 in a group of 94 men and woman college-age athletes, who participated in a variety of intramural and club sport [Coping with adversity (r=0.63); Peaking under pressure (r=0.87); Goal setting (r=0.82); Concentration (r=0.72); Freedom from worry (r=0.77); Confidence (r=0.83) and Coachability (r=0.47)] in a study by Smith *et al*. (1995).

The overall Cronbach's alpha coefficient for the current dataset was 0.80, which suggests good internal consistency reliability. The Cronbach's alpha coefficient for each subscale was as follows: Coping with adversity (0.77), Peaking under pressure (0.77), Goal setting (0.78), Concentration (0.77), Freedom from worry (0.82), Confidence (0.77), Coachability (0.78) and Average coping ability (0.73). This is in agreement with the alpha coefficients for a study conducted on 204 South African pupils with a mean age of 13.2 years that was 0.81 and suggests that the ASCI-28 is reliable (Kruger & Pienaar, 2014). However, further psychometric validation of the scale is needed for use within the South African context.

Analysis of data

The Statistical Consultation Services of the North-West University analysed the data, using SPSS for Windows (Version 21.0.0) (2009). The reliability of the ACSI-28 was determined using Cronbach's alpha coefficient. Descriptive statistics (mean values, standard deviations, minimum and maximum values) were reported for all the test variables. An independent samples *t*-test was performed to determine gender differences regarding the participants' SPSs levels. The level of significance was set at $p \leq 0.05$. The practical significance of differences between the two gender groups was determined using Cohen's *d*, with an effect size of 0.3 regarded as small, 0.5 as a medium, and an effect size of 0.8 as large (Thomas & Nelson, 2001).

RESULTS

Table 1 presents the descriptive statistics of the SPSs for the boys and girls separately, as well as for the whole group. Additionally, the differences between the gender groups are also displayed in Table 1. The results from the independent sample *t*-test revealed a significant gender difference for the freedom from worry subscale (p=0.04), with the boys (52.06±20.27%) obtaining a higher score than the girls (46.17±20.56%). This difference proved only to be of small practical significance (*d*=0.29). No other significant gender differences were observed. However, the boys displayed slightly higher mean scores in seven of the eight SPSs, namely coping with adversity, peaking under pressure, goal setting, concentration, freedom from worry, confidence, as well as the average score.

Table 1 **GENDER COMPARISON AND EFFECT SIZES OF TEST VARIABLES**

Variables	Total group M±SD	Gender	n	M±SD	Min	Max	p-Values	ES
Coping with adversity	59.40±18.84	Boys	89	60.02±18.47	17	100	0.69	0.06
		Girls	122	58.95±19.17	8	100		
Peaking under pressure	63.03±19.43	Boys	89	64.14±17.83	25	100	0.48	0.09
		Girls	122	62.23±20.56	0	100		
Goal setting/mental preparation	63.11±19.77	Boys	89	64.89±19.76	17	100	0.27	0.16
		Girls	122	61.82±19.75	0	100		
Concentration	60.86±18.55	Boys	89	63.30±17.71	25	100	0.10	0.22
		Girls	122	59.08±19.02	0	100		
Freedom from worry	48.66±20.59	Boys	89	52.06±20.27	8	100	0.04*	0.29
		Girls	122	46.17±20.56	0	100		
Confidence and AM	68.52±18.71	Boys	89	70.51±18.51	25	100	0.19	0.18
		Girls	122	67.08±18.79	33	100		
Coachability	70.10±18.93	Boys	89	69.29±18.23	25	100	0.60	0.07
		Girls	122	70.70±19.47	17	100		
Average score	61.96±11.90	Boys	89	63.46±11.21	39	100	0.12	0.21
		Girls	122	60.86±12.31	24	100		

Total group: N=211 AM=Achievement motivation
* p= ≤0.05 M=Mean SD=Standard Deviation Min=Minimum Max=Maximum ES=Effect Size

DISCUSSION

This study aimed to explore the SPSs of sport-participating adolescents in a South African context regarding possible gender differences. Previous research has highlighted the distinct role of gender as a factor that differentiates between the sport psychological skills levels of athletes competing at the same or different competitive levels (Elferink-Gemser *et al*., 2005; Gallucci, 2008; Grossbard *et al.*, 2009; Katsikas *et al*., 2009). However, the result of the present study revealed that only the freedom from worry subscale differed significantly between male and female athletes, with the boys obtaining a higher average score than the girls. 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 characteristic of anxiety, such as nervousness and apprehension, and is associated with a negative emotional state that sport participants experience during a performance (Weinberg & Gould, 2019).

Grossbard and co-workers (2009) found that female youth sport participants reported significantly lower levels of freedom from worry than their male counterparts, which is in agreement with the results of the present study. Although the current findings indicated a significant gender difference in the psychological skill construct of 'freedom from worry', the overall results are similar to a previous study by Kruger and Pienaar (2014), who found no significant differences between the SPSs in 204 Grade 8 boys and girls. Based on the results from these studies it appears that SPSs gender differences are not prominent among South African adolescents.

Conversely, in the study of Elferink-Gemser *et al*. (2005) on 458 talented youth athletes (M=14.8 years) who participate in high-level competitive sports (hockey, basketball, volleyball, speed skating, swimming) in the Netherlands, they reported a significant main effect for confidence, anxiety control and mental preparation, with the boys achieving higher average values compared to their girl counterparts. These results partially support some of the current findings seeing that the boys obtained higher average values in the psychological constructs of 'confidence and achievement motivation' and 'goal-setting/mental preparation'. Contrary to these findings, the men outscored the woman in concentration according to Grossbard *et al.* (2009), who reported that female youth sport participants who play volleyball, soccer, hockey and baseball obtained better scores in concentration when compared to their male counterparts.

CONCLUSION

Freedom from worry was the only differentiating factor when the participants were compared based on their gender, with the boys displaying a higher score than the girls. The current study contributes to the existing literature by providing evidence that suggests homogeneity regarding the SPSs of adolescents of different genders. Besides, the findings of this study provide evidence that despite significant differences in anthropometrical, physical and motor abilities (Malina *et al.*, 2004), there are limited differences in the sport psychological skills between boys and girls in this group, suggesting homogeneity within the sample. Sport psychology consultants should provide intervention programmes that focus on assisting female sport participants in dealing constructively with anxiety in sport, especially among samples with similar attributes.

Certain limitations were identified. Since the participants hailed from one of the four districts in the North West Province and did not represent the broader South African population, the results need to be interpreted with caution and cannot be generalised to other sport-participating adolescents. It is proposed that future studies include participants that are representative of the South African population. Additionally, longitudinal studies should investigate the effect of growth and maturation on the development of SPSs among mid-adolescents, late adolescents and young adults.

Acknowledgements

The cooperation of the District Office of the Department of Education, school authorities, teachers, parents, and children of the Tlokwe Municipality is much appreciated. We thank the fourth-year (2010–2014 honours groups) students in the School of Human Movement Sciences and the PAHLS Research Team for their significant roles in the PAHL study. This material is based upon work supported financially by the National Research Foundation (NRF) and the Medical Research Council of South Africa (MRC).

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(*Subject editor: Dr. Heinrich Grobbelaar)*