

EFFECTS OF A PSYCHOLOGICAL SKILLS TRAINING PROGRAMME FOR UNDERSERVED RUGBY UNION PLAYERS

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ABSTRACT

The development of psychological skills is an important, but often neglected part of sport. This study aimed to determine the effects of a psychological skills training (PST) programme delivered to underserved club rugby players. Twenty-four (n=24) rugby union players (Age: M=27.02 years) shared their views about psychological skills development in rugby and completed the Psychological Skills Inventory (PSI) and the Peak Performance Profile (PPP). A quasi-experimental research design was used in which 11 participants took part in a six-week PST programme, with 13 participants acting as non-attentional controls. Repeated measures two-way ANOVAs revealed significant main time effects, with paired t-tests showing statistically significant pre- to post-test improvements for 10 of the 11 psychological skills among the experimental group. The programme's effectiveness was further validated by the experimental group's feedback. Recommendations are made for future research, as well as practical application within existing rugby development programmes in South Africa.

Keywords: Mental skills; Psycho-educational programme; Rugby development; Sport performance.

INTRODUCTION

A combination of physical, technical, tactical and psychological factors affect rugby performance (Hale & Collins, 2002). Applied sport psychology consultants have an important role to teach a variety of psychological skills by means of psychological skills training (PST) programmes. PST can be defined as “the systematic and consistent practice of mental or psychological skills for the purpose of enhancing performance, increasing enjoyment or achieving greater sport and physical activity self-satisfaction” (Weinberg & Gould, 2011:248). Sport psychology in South Africa remains underdeveloped, with little applied work at the developmental levels (Edwards & Barker, 2015). Whilst performance enhancement remains the primary focus of sport psychology interventions, a holistic approach that promotes player wellbeing is desirable (Anderson *et al.*, 2002; Vealey, 2007).

Edwards and Edwards (2012a) called for the implementation of PST programmes due to the poor psychological skill levels of high school rugby players in South Africa. The underlying assumption is that psychological skills can be developed through deliberate interventions. Evidence suggests that this development may occur naturally and without additional intervention. Di Corrado *et al.* (2014), for example, observed that the attentional skills of rugby players improved as they matured and became more experienced. However, Kruger *et al.*

(2010) argued that intervention programmes need to be implemented to develop South African rugby players psychologically.

The drive toward evidence-based best practice calls for an evaluation of the effectiveness of PST programmes (Grove *et al.*, 1999), either through investigating the effect of a single psychological skill or through implementing PST packages. With regard to single skill interventions, the 14-week imagery intervention of Evans *et al.* (2004) with a professional rugby player resulted in greater clarity and more structured use of cognitive specific and cognitive general imagery. Enhanced anxiety control, activation regulation, motivation and self-confidence were additional positive outcomes of this intervention. A three-stage goal setting intervention over the course of a competitive season improved the task-specific on-field performance of five university level rugby players (Mellalieu *et al.*, 2006).

With regard to PST packages, Edwards and Edwards (2012b) presented a four-month PST programme to U21 players from a provincial rugby academy. The participants' mental preparation, imagery ability and management of anxiety improved significantly, whereas the scores of the age-matched non-rugby playing students remained unchanged. Sharp *et al.* (2013) presented nine sessions (consisting of performance profiling, goal setting, self-talk, arousal control, imagery, pre-competition routines and -plans) to high school players who were part of a national rugby development programme. The participants expressed support for the programme as their knowledge about psychological skills increased, their perceptions about their team's cohesiveness improved, and they encountered greater honesty and openness within the team.

Davidson and Edwards (2014) implemented a six-week cognitive behavioural intervention consisting of self-talk, arousal control, imagery, attention/concentration, goal-setting and motivation to a group of high school rugby players. The experimental group's mental preparation, anxiety management and motivation improved significantly, whereas no changes were observed among the control group. The samples in the cited intervention studies mostly comprised of rugby players from privileged communities. As a result, there is a paucity of information about the effects of PST interventions among athletes from disadvantaged communities.

There has been a growing interest in the capacity of sport as a tool for development and empowerment, particularly in under-resourced and under-developed regions (Massey *et al.*, 2016). The vision of the Department of Sport and Recreation South Africa (SRSA) is to create an active and winning sporting nation. Their mission statement asserts that it aims "to transform the delivery of sport and recreation by ensuring equitable access, development and excellence at all levels of participation and to harness the socio-economic contributions that can create a better life for all in South Africa" (<http://www.srsa.gov.za/pebble.asp?relid=30>). Therefore, to accomplish this mission, a scientific support programme was established that includes the provision of psychological services to emerging athletes (DSRSA, 2016:Online).

PURPOSE OF RESEARCH

The subsequent aims of the study were (1) to determine the perceptions held by rugby players about psychological skills development, and (2) to evaluate the effects of a PST programme. The results of this study may provide insight into the potential of PST programmes to develop the psychological skills of club rugby players in South Africa.

METHODOLOGY

Participants

A non-probability sampling technique was used in which 32 male rugby players ($M_{\text{age}}=26.8$ years; age range=20–38 years) from a club that competed in the Western Province Super A-league, took part in pre-testing. The inter-reliability indices for the two research instruments are reported for the total sample ($n=32$) in the measures section. All subsequent statistical analysis was limited to 24 participants ($M_{\text{age}}=27.0$ years; age range=20–38 years) who took part in pre- and post-testing, did not consult with another sport psychology consultant and remained injury free throughout the study. The data in Table 2 suggests that this sample was previously underserved in terms of both individual and team sport psychology consultations.

A quasi-experimental research design was employed. The experimental group included 11 participants who attended at least four of the six PST sessions, and the non-attentional control group consisted of 13 participants. The participants were not randomly assigned to the two groups, with the experimental group comprising of participants who wanted to and were able to attend the sessions. The two groups differed slightly in terms of age, albeit non-significantly (experimental: $M_{\text{age}}=27.5$ years, control: $M_{\text{age}}=26.6$ years; $t(22)=0.359$, $p=0.723$), or the number of years they had been playing rugby (experimental: $M=16.3$ years, control: $M=16.9$ years; $t(21)=-2.61$, $p=0.797$).

Procedure

The study was cleared by a Departmental Ethics Screening Committee and ratified by the Research Ethics Committee: Human Research (Humanities) of Stellenbosch University (proposal number: DESC/Grobbelaar/May2015/10). Participation was voluntary and participants had the right to withdraw their participation at any time and without prejudice. All participants signed informed consent forms and their data were treated confidentially.

Measures

Psychological Skills Inventory (PSI)

Wheaton (1998) developed the 60-item PSI using a sample of 304 South African sport science students, who participated in a variety of sports. Items were scored on a 5-point scale from 0 (“never”) to 4 (“always”) with reversed scoring used for 19 items. The PSI measures six subscales, with results expressed as percentage scores, with higher values reflecting better psychological skill levels. The inter-reliability indices for the current dataset ($n=32$) were as follows: Achievement Motivation ($\alpha=0.729$), Goal Directedness ($\alpha=0.899$), Activation Control ($\alpha=0.834$), Maintaining Self-confidence ($\alpha=0.828$), Concentration ($\alpha=0.853$), and Imagery/Mental Preparation ($\alpha=0.872$).

Peak Performance Profile (PPP)

The psychometric properties of the PSI was determined using a dataset of 768 elite South African sportspersons, who completed the PSI as part of a government sponsored elite athlete development programme. The analysis resulted in the development of the 15-item PPP by Potgieter and Kidd (2011), in which 13 of the original PSI items were retained and two additional items (belonging to the Confidence subscale) were added. The PPP uses the same scoring system as the PSI, with reversed scoring used for eight items. Acceptable alpha values were found for the current dataset: Concentration ($\alpha=0.714$), Stress Control ($\alpha=0.739$) and Confidence ($\alpha=0.740$). Since both measures were developed using South African samples it was deemed applicable to use in the current study.

Social validity

Social validation refers to the perceptions of participants about the effectiveness of an intervention (Fournier *et al.*, 2005). The participants rated the programme based on the following questions:

- (a) "How satisfied were you with the psychological skills training programme?" with responses ranging from 1 ("not satisfied at all") to 7 ("extremely satisfied");
- (b) "How useful was the psychological skills training programme?" with responses ranging from 1 ("not useful at all") to 7 ("extremely useful");
- (c) "How appropriate and relevant was each of the six sessions?" with responses ranging from 1 ("not appropriate/relevant at all") to 7 ("extremely appropriate/relevant"). Each session was rated separately.

PST programme

Thelwell *et al.* (2006) noted that applied researchers often fail to justify the inclusion of specific psychological skills in their intervention programmes, whilst Birrer and Morgan (2010) observed that the terms *psychological skills* and *psychological techniques* tend to be used interchangeably. The PST programme was presented in group format and incorporated psychological techniques (goal setting, imagery, thought stopping, self-talk, physical relaxation) to improve psychological skills and attributes (motivation, focus and refocus skills, self-confidence), collectively aimed at facilitating goal-directed behaviour, enhancing mental preparation, enabling effective arousal self-regulation, the ability to train and play "in the moment" and developing a firm belief in one's own abilities (Table 1 follows).

Six 60-minute group sessions were presented on a weekly basis throughout the competitive season, immediately after the weekly video analysis session. The attendance rate of the sessions was 81.82%. A psycho-educational programme was presented with each session consisting of an educational and acquisition phase as outlined by Weinberg and Gould (2011). Each participant received a manual containing his own psychological skills profile, session material including information about each skill/technique and how it relates to rugby performance, as well as individual and group activities to acquire these skills. Group interventions cannot adequately address the individual needs of participants (Anderson *et al.*, 2002). However, groups may foster a sense of belonging and an environment that is conducive to learning new skills (Corey, 2001), whilst group sessions also allow participants to improve behaviours through the sharing of information (Jacobs *et al.*, 2002).

Table 1. PSYCHOLOGICAL SKILLS, TECHNIQUES AND SESSION AIMS

Aspects	Sessions					
	1	2	3	4	5	6
Session title	Competitive Fire	Creative thinking	Composure	Champion mind set	Concentrate	Confidence
Techniques	Feedback on mental skills profile Goal setting	Imagery	Somatic anxiety & performance	Cognitive anxiety & performance	–	Positive affirmation
Skills	Achievement Motivation		Controlled breathing	Thought stopping & pos. self-talk	Focusing/ refocusing	–
Session aim	Goal-directed behaviour	Enhanced mental preparation	Ability to regulate own arousal levels for performance	Train and play ‘in the moment’		Self-belief and team efficacy

Statistical analysis

A repeated measures two-way analysis of variance (ANOVA) was conducted for each of the measured variables to evaluate the effects of the programme. Paired t-tests (within-group comparisons over time) followed. Statistical significance was set at $p \leq 0.05$. Practical significance or effect sizes (ES) were also calculated using the pooled standard deviation method described by Thomas and Nelson (2001). An ES of more or less 0.8 indicate large, 0.5 indicate moderate and 0.2 indicate small practical significant differences.

RESULTS

Perceptions of psychological skills and PST programmes

Table 2 (to follow) reveals the participants’ perceptions about various aspects relating to sport psychological skills and PST programmes in rugby. Only five of the participants had previous exposure to PST programmes. One participant attended two individual consultations with a sport psychologist. Three participants had been part of teams that attended a single team session and the final participant had three team sessions over the course of a season. Collectively, this data indicate that the current sample has largely been underserved with regard to PST.

Effect of the PST programme

The pre-test, post-test, paired t-test and effect sizes are reported in Tables 3 and 4 (to follow).

PSI Total Score: There was a significant main effect for time (Wilks’ Lambda=0.591, $F_{1, 22}=15.256$, $p < 0.001$, $\eta^2=0.409$), whilst the time X group interaction effect was significant at the 90% confidence level (Wilks’ Lambda=0.880, $F_{1, 22}=3.014$, $p < 0.097$, $\eta^2=0.120$). The experimental group improved significantly over time ($t(10) = -3.913$, $p = 0.003$), whereas the control group did not ($t(12) = -1.576$, $p = 0.141$) (Figure 1).

Table 2. PERCEIVED IMPORTANCE, PRIOR CONSULTATIONS, PERCEIVED ABILITY AND NEED FOR PST PROGRAMMES

Variables	Sample (n=24)	Experimental group (n=11)	Control group (n=13)
<i>Perceived importance of psychological skills</i>			
Waste of time	0 (0.0%)	0 (0.0%)	0 (0.0%)
Unimportant	1 (4.17%)	0 (0.0%)	1 (7.69%)
Neutral	2 (8.33%)	2 (18.18%)	0 (0.0%)
Important	13 (54.17%)	4 (36.36%)	9 (69.23%)
Very important	8 (33.33%)	5 (45.45%)	3 (23.08%)
<i>Previous sport psychology consultations</i>			
Individual consultations	1 (4.17%)	0 (0.0%)	1 (7.69%)
Team consultations	4 (16.67%)	2 (18.18%)	2 (15.38%)
<i>Perceived ability to be mentally prepared for training sessions</i>			
Poor	0 (0.0%)	0 (0.0%)	0 (0.0%)
Below average	3 (12.50%)	1 (9.09%)	2 (15.38%)
Average	9 (37.50%)	3 (27.27%)	6 (46.15%)
Good	10 (41.67%)	6 (54.55%)	4 (30.77%)
Very good	2 (8.33%)	1 (9.09%)	1 (7.69%)
<i>Perceived ability to be mentally prepared for matches</i>			
Poor	0 (0.0%)	0 (0.0%)	0 (0.0%)
Below average	2 (8.33%)	2 (18.18%)	0 (0.0%)
Average	7 (29.17%)	2 (18.18%)	5 (38.46%)
Good	12 (50.0%)	4 (36.36%)	8 (61.54%)
Very good	3 (12.50%)	3 (27.27%)	0 (0.0%)
<i>Expressed need for a PST programme</i>			
Absolutely no need	0 (0.0%)	0 (0.0%)	0 (0.0%)
No need	1 (4.17%)	0 (0.0%)	1 (7.69%)
Uncertain	9 (37.50%)	3 (27.27%)	6 (46.15%)
Have a need	10 (41.67%)	6 (54.55%)	4 (30.77%)
Have a great need	6 (16.67%)	2 (18.18%)	2 (15.38%)

Table 3. PRE-/POST-TEST COMPARISONS OF PSI FOR EG AND CG

Subscale	Group	Pre-test	Post-test	Paired t-test		Pract. Sign.
		M±SD(%)	M±SD(%)	t	p	Cohen's d
PSI Total Score	EG	57.84±13.74	67.84±13.91	-3.913	0.003**	0.72 ^b
	CG	56.73±15.26	60.58±13.32	-1.576	0.141	0.27
Achievement motivation	EG	75.45±12.03	86.36±7.93	-4.006	0.002**	1.07 ^b
	CG	68.08±13.00	71.73±14.16	-1.341	0.205	0.27
Goal directedness	EG	47.95±21.21	61.14±25.18	-2.717	0.022*	0.57 ^a
	CG	54.42±21.02	61.54±17.19	-1.839	0.091	0.37
Activation control	EG	57.05±15.57	65.91±10.50	-2.260	0.047*	0.67 ^b
	CG	50.77±20.52	57.69±13.60	-1.699	0.115	0.40 ^a
Maintaining self-confidence	EG	62.27±13.34	72.95±11.34	-2.553	0.029*	0.86 ^b
	CG	55.19±17.78	59.42±11.87	-1.058	0.311	0.28
Concentration	EG	58.18±17.82	66.36±16.67	-2.215	0.051*	0.47 ^a
	CG	55.19±20.85	55.00±17.82	0.040	0.969	0.01
Imagery/Mental preparation	EG	46.14±26.75	54.32±27.91	-2.303	0.044*	0.30
	CG	56.73±13.63	58.08±15.72	-0.458	0.655	0.09

* p<0.05 ** p<0.01 ^a Moderate practical significant difference (d more or less 0.50)

^b Large practical significant difference (d more or less 0.80)

Paired t-test: Two-tailed

EG=Experimental Group (n=11)

CG=Control Group (n=13)

Prac. Sign.=Practical Significance

Table 4. PRE-/POST-TEST COMPARISONS OF PPP FOR EG and CG

Subscale	Group	Pre-test	Post-test	Paired t-tests		Pract. Sign.
		M±SD(%)	M±SD(%)	t	p	Cohen's d
PPP Total Score	EG	60.00±11.93	69.70±11.03	-4.685	0.001***	0.84 ^b
	CG	52.95±18.87	57.69±15.99	-1.203	0.252	0.27
Concentration	EG	57.73±15.87	68.18±16.32	-2.501	0.031*	0.65 ^b
	CG	52.69±20.37	53.08±20.26	-0.066	0.949	0.02
Stress Control	EG	69.55±13.50	81.36±13.06	-4.101	0.002**	0.89 ^b
	CG	61.92±18.54	69.62±20.05	-1.873	0.086	0.40 ^a
Confidence	EG	52.73±17.23	59.55±11.50	-1.679	0.124	0.47 ^a
	CG	44.23±23.62	50.38±14.06	-1.254	0.234	0.32

* p<0.05 ** p<0.01 *** p<0.001 ^a Moderate practical significant difference (d more or less 0.50)

^b Large practical significant difference (d more or less 0.80)

Paired t-test: Two-tailed

EG=Experimental Group (n=11)

CG=Control Group (n=13)

Prac. Sign.=Practical Significance

MEAN SCORES FOR PRE-/POST-TEST FOR TWO GROUPS

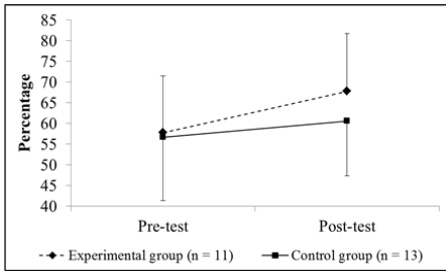


Figure 1. PSI TOTAL SCORES

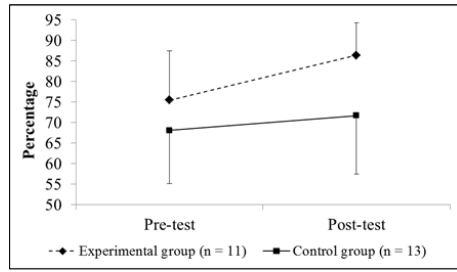


Figure 2. ACHIEVEMENT MOTIVATION

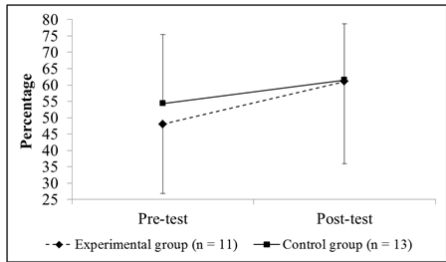


Figure 3. GOAL DIRECTEDNESS

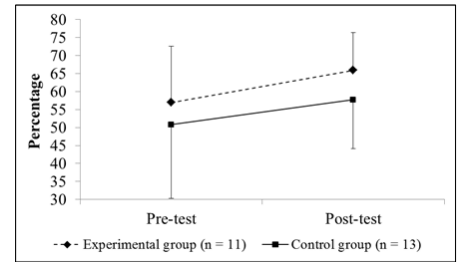


Figure 4. ACTIVATION CONTROL

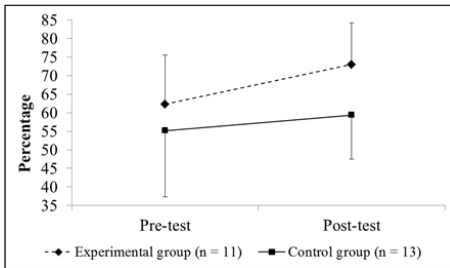


Figure 5. SELF-CONFIDENCE

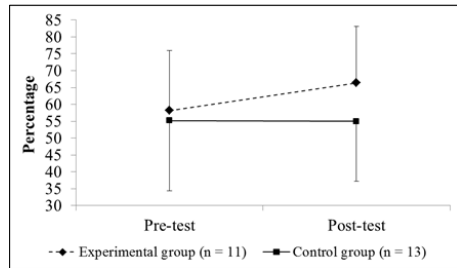


Figure 6. CONCENTRATION (PSI)

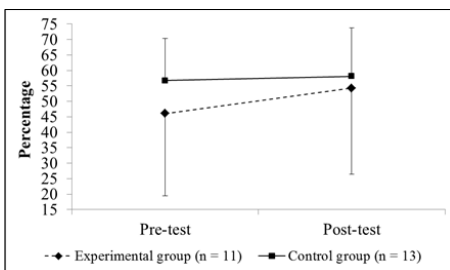


Figure 7. IMAGERY/MENTAL PREPARATION

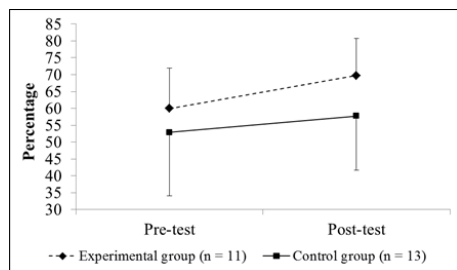


Figure 8. PPP TOTAL SCORES

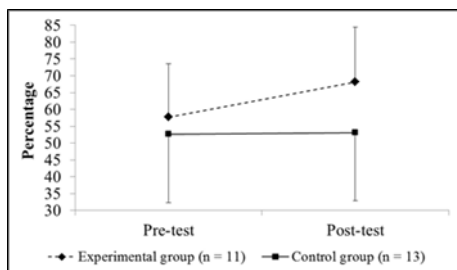
MEAN SCORES FOR PRE-/POST-TEST FOR TWO GROUPS (cont.)

Figure 9. CONCENTRATION (PPP)

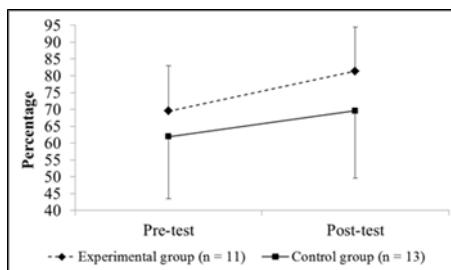


Figure 10. STRESS CONTROL

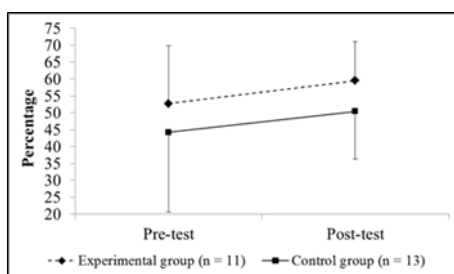


Figure 11. CONFIDENCE

Achievement Motivation: There was a significant main effect for time (Wilks' Lambda=0.610, $F_{1, 22}=14.086$, $p<0.001$, $\eta^2=0.390$), for group ($F_{1, 22}=5.750$, $p=0.025$, $\eta^2=0.207$), as well as for the time X group interaction effect, albeit at the 90% confidence level (Wilks' Lambda=0.863, $F_{1, 22}=3.469$, $p<0.075$, $\eta^2=0.137$). A significant improvement was observed among the experimental group over time ($t(10)=-4.006$, $p=0.002$), whereas the scores of the control group did not change ($t(12)=-1.341$, $p=0.205$) (Figure 2).

Goal Directedness: There was a significant main effect for time (Wilks' Lambda=0.667, $F_{1, 22}=10.967$, $p<0.003$, $\eta^2=0.333$) with a significant improvement among the experimental group ($t(10)=-2.717$, $p=0.022$), whereas the scores of the control group improved at the 90% confidence level ($t(12)=-1.839$, $p=0.091$) (Figure 3).

Activation Control: There was a significant main effect for time (Wilks' Lambda=0.742, $F_{1, 22}=7.630$, $p=0.011$, $\eta^2=0.258$), with a significant improvement among the experimental group over time ($t(10)=-2.260$, $p=0.047$), but not the control group ($t(12)=-1.699$, $p=0.115$) (Figure 4).

Maintaining Self-confidence: There was a significant main effect for time (Wilks' Lambda=0.769, $F_{1, 22}=6.598$, $p=0.018$, $\eta^2=0.231$), revealing a significant improvement among

the experimental group over time ($t(10) = -2.553$, $p = 0.029$), but no change among the control group ($t(12) = -1.258$, $p = 0.311$) (Figure 5).

Concentration (PSI): There were no significant main or time X group interaction effects. Paired t-tests did, however, reveal a significant improvement among the experimental group over time ($t(10) = -2.215$, $p = 0.051$), whereas the scores of the control group did not change ($t(12) = 0.040$, $p = 0.969$). This finding should be interpreted with caution as the main effect was insignificant (Figure 6).

Imagery/Mental Preparation: There was a significant main effect for time (Wilks' Lambda=0.835, $F_{1, 22} = 4.353$, $p = 0.049$, $\eta^2 = 0.165$) with a significant improvement among the experimental group over time ($t(10) = -2.303$, $p = 0.044$), whereas the scores of the control group remained unchanged ($t(12) = -0.458$, $p = 0.655$) (Figure 7).

PPP Total Score: There was a significant main effect for time (Wilks' Lambda=0.700, $F_{1, 22} = 9.432$, $p = 0.006$, $\eta^2 = 0.300$) with a significant improvement among the experimental group over time ($t(10) = -4.685$, $p = 0.001$), but no such change among the control group ($t(12) = -1.203$, $p = 0.252$) (Figure 8).

Concentration (PPP): There were no significant main or time X group interaction effects. Paired t-tests did, however, reveal a significant improvement among the experimental group over time ($t(10) = -2.501$, $p = 0.031$), whereas the scores of the control group did not change ($t(12) = -0.066$, $p = 0.949$). This finding should be interpreted with caution as the main effect was insignificant (Figure 9).

Stress Control: There was a significant main effect for time (Wilks' Lambda=0.610, $F_{1, 22} = 14.078$, $p < 0.001$, $\eta^2 = 0.390$), with a significant improvement among the experimental group over time ($t(10) = -4.101$, $p = 0.002$), whilst the control group improved at the 90% confidence level ($t(12) = -1.873$, $p = 0.086$) (Figure 10).

Confidence: The main effect for time almost reached the 95% confidence level (Wilks' Lambda=0.847, $F_{1, 22} = 3.959$, $p = 0.059$, $\eta^2 = 0.153$), but no significant change over time for either the experimental ($t(10) = -1.679$, $p = 0.124$) or control ($t(12) = -1.254$, $p = 0.234$) groups (Figure 11).

Satisfaction with the PST programme

The participants seem to have been satisfied with the programme as the average rating was 6.64 (SD=0.50) out of a maximum 7. One participant noted that "these sessions helped a lot". Another commented that "although I was familiar with certain of these aspects, it was good to listen to it from the perspective of a professional. The techniques that were taught now make it easier to concentrate on these areas". Another participant mentioned that the "programme was a first for me, thus very insightful and an excellent learning curve".

Usefulness of the PST programme

The participants also deemed the programme to be useful (6.55 ± 0.52). One participant noted "I can also apply the techniques at work and at home", whereas another mentioned that "I try

to incorporate what I've learned in the sessions in my rugby, as well as life. To some extent it has worked and I always refer back to the workbook if my performance or concentration drops". Another participant said that "...it will improve my rugby, but more importantly, my personal life" and that it was "...very important in taking our club to the next level".

Appropriateness and relevance of each session

The mean ratings for the six sessions were 6.17 ± 0.94 out of 7. The sessions on confidence (6.44 ± 0.88), achievement motivation (6.43 ± 0.53) and concentration (6.30 ± 0.48) achieved the highest scores. Imagery was the only session that yielded an average score of less than 6.0 (5.57 ± 1.62).

DISCUSSION

Perceptions about psychological skills and PST programmes

The current sample deems psychological skills as important for rugby performance, reporting similar statistics to Super 12 rugby players (Kruger, 2003) and University rugby players (Andrew *et al.*, 2007). They seem to have been largely underserved with regard to PST, with only 20.83% of the participants previously having consulted with a sport psychologist. This does not differ substantially from the 23.3% reported by Andrew and co-workers (2007). However, the number of sessions attended by the participants was probably insufficient to have had any significant impact.

Edwards and Barker (2015) noted that sport psychology services are delivered in the more economically advantaged sectors of South Africa. A cross-sectional survey on provincial netball players in South Africa suggested that most of these players were only exposed to PST programmes during their tertiary education years (Van den Heever *et al.*, 2007). The participants in the current sample hailed from a low socio-economic background. This may partially explain the hesitancy by a large proportion (41.67%) of the sample to take part in the intervention as they were probably not sure what it entailed. There will also be athletes who feel they do not need any outside help (Meyers *et al.*, 1995).

Effects of the PST programme

Significant improvements were observed among the experimental group for all the psychological skills except confidence (PPP) that yielded a moderate practical significant improvement. The scores of the control group remained unchanged, apart from moderate practical significant improvements for activation control (PSI) and stress control (PPP). This shows that the programme was effective in terms of developing psychological skills, although caution should be applied when generalising these results due to the non-random assignment of the participants to the respective groups. More rigorous research designs should be used to establish programme effectiveness, as well as its impact on performance. Despite this limitation, the current study supports the notion that psychological skills can be developed through PST programmes and adds to the growing body of evidence in this regard.

From a performance perspective one could question whether the programme, despite being effective, was too little too late. Five of the participants in the experimental group were already ≥ 32 years of age and, therefore, nearing the end of their rugby careers. Older athletes may

already have internalised dysfunctional responses to competition and PST interventions should, consequently, rather be directed towards young developing athletes (Vealey, 1988).

A review on talent identification and development of youth rugby players in South Africa conducted by Spamer (2009) revealed a paucity of information pertaining to the role of psychological aspects. The explorative study, reported by Van den Berg *et al.* (2012) on the role of maturation on psychological skills development, suggested that the adolescent years might be the most opportune time to implement PST programmes, as late maturers seem to catch up with the early maturers both physically and psychologically at this stage. However, Raviv *et al.* (2000) noted hesitancy among adolescents to seek psychological help. According to Green *et al.* (2012), elite rugby players expressed concerns about how significant others would view them if they engaged with psychological services, despite wanting to do so. Any existing stigmas regarding sport psychological services should be addressed first. It should also be emphasised that the purpose of PST programmes are not to identify or address clinical problems.

Social validation

The experimental group rated the programme favourably. They were satisfied, found it to be useful and deemed the session content to be appropriate. Kirschenbaum (1984) proposed that the ultimate goal of PST is self-regulation by the athlete (ability to function effectively without the continuous input from a coach or sport psychology consultant). The final stage of his self-regulation model entails the generalisability of psychological skills acquired through PST to settings other than sport. Therefore, it was encouraging to see evidence that suggests self-regulation (using the manual to solve performance slumps or to address drops in concentration), as well as the generalisation of the newly acquired skills to their personal lives, homes and workplaces.

RECOMMENDATIONS

The programme could be improved by adding a session in which more detailed feedback regarding the test results could be provided, thereby allowing the presenter to establish greater trust and rapport. Session One only briefly addressed goal setting, as it focused on achievement motivation. Both topics should be covered more thoroughly. The imagery session needs further refinement (including more sport-related imagery scripts and opportunities during training to implement these newly acquired skills). In this regard, Evans *et al.* (2004) emphasised that imagery interventions should be specific to the needs of the individual player.

This study should be replicated in a more organised and controlled environment like a rugby academy, as larger sample sizes would enable a cross-over research design. This would increase control over the extraneous factors and enhance the scientific rigour. Multiple test points could provide information about the retention of the acquired skills over time. Future studies should determine the ideal ‘window of opportunity’ to develop sport psychological skills. The South African Rugby Union (SARU) has to drive the process through which the “physical, mental, emotional and cognitive development” of young rugby players is attained, in line with the Long-term Athlete Development framework (Durandt *et al.*, 2011:103). SARU should develop their own programme/refine the current programme to address the specific needs of players at

various levels within their development structures. The long-term effect of this programme on other performance variables also needs to be investigated.

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