

PSYCHOLOGICAL SKILLS OF PROVINCIAL NETBALL PLAYERS IN DIFFERENT PLAYING POSITIONS

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ABSTRACT

Differences regarding the psychological skill levels of soccer, basketball, rugby union and American football players in different playing positions have been reported. These differences are believed to be the result of the specific demands of each playing position. This study examined possible positional differences in a group of 185 South African provincial netball players (mean age: 20.7 years, S.D.: 3.87 years). The subjects were divided into seven playing positions, namely: goal shooter (n=21), goal attack (n=27), wing attack (n=35), centre (n=29), wing defence (n=24), goal defence (n=25) and goal keeper (n=24), and were compared with regard to seven psychological skills and a derived composite psychological skills score, measured by means of the Athletic Coping Skills Inventory (ACSI-28) of Smith et al. (1995). Effect sizes (expressed as Cohen's d-value) were used to indicate practical significant differences. Thirty-nine of the 168 positional comparisons yielded moderate practical significant differences ($d \approx 0.5$). Collectively, these results showed that the goal attack and wing defence players consistently outperformed the other positional groups, while the goal shooters showed the lowest psychological skill levels. The results are discussed with reference to their implications for psychological skills training programmes.

Key words: Playing positions; Netball players; Psychological skills.

INTRODUCTION

Netball is a fast, skilful team game consisting of running, jumping, throwing and catching. It is the most important team game for women in South Africa (SA) (Venter & Potgieter, 2003) and has unrivalled international popularity among females, with more than seven million participants from more than 70 countries (Netball SA, 2010). Optimal performance in this sport is dependent on the interaction of a number of factors such as tactics (Beagles, 1992), nutrition (Paish, 1992), physical conditioning, as well as technical and psychological skills (Venter *et al.*, 2005). The focus of this study was on the psychological skills due to the important contribution thereof in preparing the body and mind for optimal performance as indicated by Rushall (1989) and Cox and Yoo (1995).

There has been an increase in research that focus on sport psychological skills and the contribution thereof in sport performance over the last couple of decades. However, a limited amount of research has been conducted on this topic within the sport of netball. In this regard,

Bock Jonathan *et al.* (2004) emphasised the importance of developing sound psychological skills in order to achieve success within this sport. This is supported by the findings of Davenport *et al.* (2005) who indicated a need to improve netball players' coping strategies due to the gruelling demands of the game. According to Woodlands (2006), self-image, self-confidence and concentration are the psychological factors that play an important role in netball.

Van den Heever *et al.* (2007a) surveyed the situation with regard to sport Psychological Skills Training (PST) in South African Netball. The survey found that a reasonable portion (43.31%) of the 314 provincial netball players who participated in this survey have previously been exposed to PST sessions in which self-confidence, positive self-talk, team cohesion, goal-setting and concentration skills were the most frequently addressed topics. Also, players from more successful netball teams scored significantly higher for peaking under pressure, whilst they perceived their cognitive anxiety and self-confidence levels to be more facilitative towards performance than their less successful counterparts (Van den Heever *et al.*, 2007b). Collectively, these results stress the importance of well-developed sport psychological skills within this sport.

A netball team consists of seven players, each in a specialised playing position with a further three reserve players. There is evidence that players in different playing positions tend to have different psychological skill levels (Cox & Yoo, 1995). In this regard Sharpe (1993) noted that the requirements for each playing position exerted an influence on the psychological make-up of the players in that specific position. According to the study by Sharpe, junior netball players revealed significant personality differences between the centres and all other playing positions with the exception of the goal keepers. Since this was the only information regarding psychological attributes, which could be found for netball players in different playing positions, research findings on this topic from other sporting codes will be outlined.

According to Nation and LeUnes (1983), defensive linemen in American football have a significantly greater internal locus of control than offensive linemen. Using the Myers-Briggs Type Indicator, Schurr *et al.* (1984) found significant psychological differences in certain personality dimensions (extraversion-introversion, sensing-intuition, thinking-feeling and judging-perceiving) among American football players in different playing positions. Cox and Yoo (1995) reported significant differences for anxiety control between the players in offensive and defensive positions within the sport of American football. Soccer players in attacking positions were shown to have significantly higher levels of emotional instability in comparison to players in defensive positions (Kirkcaldy, 1982). In the sport of rugby union, Andrew *et al.* (2007) found that the hookers and half-backs tested superior to the props, locks, wings and fullbacks in all seven tested psychological skills subscales. From these findings, it is clear that positional differences do exist with regard to psychological skills and attributes among athletes from various sporting codes. The question remains whether or not such differences exist among netball players.

The aim of this study was to determine whether the psychological skill levels of South African provincial netball players in different playing positions, differed from one another.

The results of this study may influence the way in which Psychological Skills Training (PST) programmes should be developed and implemented within this sport.

METHODS

Participants

Female netball players (N=185) from 19 provincial teams who competed in the A-section of the 2004 South African National Netball tournaments (u/19, u/21 and seniors) hosted by North-West South Netball province participated in this study. In cases where junior players (u/19 or u/21) also participated in the senior tournament (later in the year), only the data gathered during the junior tournaments were used for this study. The group consisted of u/19 (n=81), u/21 (n=63) and senior players (n=41) with a mean age of 20.7 years (S.D.: 3.87 years). On average, these players have been playing netball for 11.6 years (S.D.: 4.44 years). The players were divided into seven positional groups based on their primary playing position during these tournaments (Table 1).

TABLE 1: DESCRIPTIVE INFORMATION OF THE PLAYERS IN EACH OF THE SEVEN PLAYING POSITIONS

Positions (abbreviations)	Number of players in each positional group (n)
Goal shooter (GS)	21
Goal attack (GA)	27
Wing attack (WA)	35
Centre (C)	29
Wing defence (WD)	24
Goal defence (GD)	25
Goal keeper (GK)	24

Questionnaires

The subjects completed a demographic and netball playing history questionnaire in addition to the Athletic Coping Skills Inventory (ACSI-28) of Smith *et al.* (1995). The last-mentioned questionnaire provided a trait-like measure of sport psychological skills believed to be instrumental in improved sporting performances. The questionnaire consisted of seven psychological skills and attributes with subscales measuring coping with adversity, peaking under pressure, goal-setting/mental preparation, concentration, freedom from worry, confidence and achievement motivation, as well as coachability. The average score obtained for the seven subscales represents the composite psychological skills score. Netball players were asked to read the statements on the ACSI-28 that described experiences of other players and to recall how often they experienced these events. The seven subscales each consists of four items measured on a 4-point Likert-type scale ranging from “*Almost never*” [0] to “*Almost always*” [3]. The results were converted to a percentage score with higher values reflecting better psychological skill levels.

The ACSI-28 was originally developed and validated for an American high school athletic population. The original English version of the instrument was administered to the research

participants, as it has not been translated into any other official South African language. In addition, the instrument has not yet been standardised for the South African population. Readers are subsequently cautioned that the results and conclusions drawn from this study might be culturally biased and could reflect misunderstandings by some of the participants.

Despite these limitations, the internal consistency reliability (Cronbach's alpha values) of the current dataset showed promise, namely composite psychological skills score ($\alpha=0.87$), coping with adversity ($\alpha=0.67$), peaking under pressure ($\alpha=0.74$), goal-setting/mental preparation ($\alpha=0.80$), concentration ($\alpha=0.55$), freedom from worry ($\alpha=0.76$), confidence and achievement motivation ($\alpha=0.56$) and coachability ($\alpha=0.66$). These scores compared well with those previously reported by Crocker *et al.* (1998) among a group consisting of 594 male and 433 female high school athletes. Their alpha values ranged from 0.62 to 0.78 for the seven psychological skill subscales.

Procedure

Permission for the study was granted by the Council of Netball South Africa after which the various provincial presidents were notified. The testing procedure was communicated to the managers and coaches during the meeting held on the evenings prior to the commencement of the three tournaments (u/19, u/21 and seniors). The times for testing were scheduled in coordination with the organising committee in order to limit any possible inconvenience. All the participants completed consent forms, after being informed of the nature and purpose of the research project. Players were free to refuse or withdraw their participation in the project at any time without having to provide reasons. Individual results were treated confidentially.

Data analysis

The *statistica* data analysis package (Statsoft, 2009) was used for the statistical analysis. Effect sizes (ES) were used to determine the practical significant differences between the various positional groups with regard to the seven psychological skills and attributes (as well as the composite psychological skills score). Effect sizes were calculated according to the formula described by Thomas *et al.* (2005), i.e. $ES = (M_1 - M_2)/s$. Here, M_1 = the mean value of the first positional group in the comparison, M_2 = the mean value of the second positional group in the comparison and s = the standard deviation. The pooled standard deviation (S_p) was used in which:

$$s_p = \sqrt{\frac{s_1^2(n_1 - 1) + s_2^2(n_2 - 1)}{n_1 + n_2 - 2}}$$

Here, S_p = the pooled standard deviation; S_1^2 = the variance of the participants in the first positional group; S_2^2 = the variance of the participants in the second positional group, n_1 = the number of participants in the first positional group; n_2 = the number of participants in the second positional group in the comparison. Effect sizes were expressed as Cohen's *d*-value and could be interpreted as follows: ES of more or less 0.8 was large, ES of more or less 0.5 was moderate, and ES of more or less 0.2 was small (Thomas *et al.*, 2005).

RESULTS AND DISCUSSION

Tables 2 to 9 present the mean and standard deviation scores of the composite psychological skills score and the seven psychological skill subscales for each of the seven playing positions. From Table 2, it is evident that the wing defence players ($65.2 \pm 13.5\%$) and goal keepers ($64.8 \pm 11.8\%$) on average showed moderately better composite psychological skill scores than the goal shooters ($57.9 \pm 11.8\%$) and wing attack players ($60.3 \pm 18.7\%$). In addition, the goal shooters ($57.9 \pm 11.8\%$) showed practical significantly lower values than the goal attack players ($63.5 \pm 11.9\%$). No attempt will be made to explain the existing positional differences regarding the composite psychological skills score reported in Table 2, as this will be done for each of the seven psychological skills subscales (from which the composite psychological skills score was derived) reported in Tables 3–9.

TABLE 2: DESCRIPTIVE STATISTICS AND COMPARISONS BETWEEN THE DIFFERENT POSITIONAL GROUPS FOR THE COMPOSITE PSYCHOLOGICAL SKILLS SCORE

Mean and standard deviation	Positional group	Effect sizes (Cohen's <i>d</i> -value)						
		Goal shooter (GS)	Goal attack (GA)	Wing attack (WA)	Centre (C)	Wing defence (WD)	Goal defence (GD)	Goal keeper (GK)
57.9±11.8 %	Goal shooter (n=21)	-	0.47°	0.19	0.29	0.57°	0.30	0.58°
63.5±11.9 %	Goal attack (n=27)	-	-	0.26	0.11	0.13	0.11	0.11
60.3±18.7 %	Wing attack (n=35)	-	-	-	0.12	0.37°	0.13	0.36°
62.0±15.3 %	Centre (n=29)	-	-	-	-	0.22	0.00	0.20
65.2±13.5 %	Wing defence (n=24)	-	-	-	-	-	0.23	0.03
62.0±14.5 %	Goal defence (n=25)	-	-	-	-	-	-	0.21
64.8±11.8 %	Goal keeper (n=24)	-	-	-	-	-	-	-

° Moderate practical significance ($d =$ more or less 0.5)

Table 3 revealed that the coping with adversity scores of the goal shooters ($54.4 \pm 20.8\%$) were moderate practical significantly lower than the wing defence players ($67.7 \pm 21.9\%$), goal defence players ($63.7 \pm 22.2\%$), and goal attack players ($62.0 \pm 18.8\%$) respectively. The goal shooters are primarily responsible for the scoring of goals, thereby directly influencing the match outcome. Kok's (2007) article in a leading national newspaper indicated the goal shooter position as a major concern within South African netball, as the senior national side only converted 50.8% of their shots at goal during an international test match series. This poor goal conversion rate could possibly be related to their inability to cope with adverse conditions. Furthermore, the goal shooters had the lowest or second lowest psychological skill levels of the seven positional groups in six of the seven tested subscales. This illustrates an alarming trend, which needs to be addressed. The results from Table 3 also showed that

players in the wing defence position were more capable of coping with adverse situations as they showed moderate practical significantly higher scores ($67.7 \pm 21.9\%$) than the goal shooters ($54.4 \pm 20.8\%$), goal keepers ($59.4 \pm 20.9\%$), wing attack players ($59.8 \pm 18.7\%$) and centres ($59.8 \pm 23.4\%$).

TABLE 3: DESCRIPTIVE STATISTICS AND COMPARISONS BETWEEN THE DIFFERENT POSITIONAL GROUPS FOR COPING WITH ADVERSITY

Mean and standard deviation	Positional group	Effect sizes (Cohen's <i>d</i> -value)						
		Goal shooter (GS)	Goal attack (GA)	Wing attack (WA)	Centre (C)	Wing defence (WD)	Goal defence (GD)	Goal keeper (GK)
54.4±20.8 %	Goal shooter (n=21)	-	0.39°	0.28	0.24	0.62°	0.43°	0.24
62.0±18.8 %	Goal attack (n=27)	-	-	0.12	0.11	0.28	0.08	0.13
59.8±18.7 %	Wing attack (n=35)	-	-	-	0.00	0.39°	0.19	0.02
59.8±23.4 %	Centre (n=29)	-	-	-	-	0.35°	0.17	0.02
67.7±21.9 %	Wing defence (n=24)	-	-	-	-	-	0.18	0.39°
63.7±22.2 %	Goal defence (n=25)	-	-	-	-	-	-	0.20
59.4±20.9 %	Goal keeper (n=24)	-	-	-	-	-	-	-

° Moderate practical significance ($d =$ more or less 0.5)

As expected (given the earlier discussion about the coping with adversity scores), the goal shooters ($46.8 \pm 18.5\%$) showed a weakness regarding their ability to peak under pressure (Table 4). Their peaking under pressure scores was on average significantly lower than the goal attack players ($55.6 \pm 18.3\%$), goal keepers ($54.5 \pm 17.9\%$) and wing defence players ($53.8 \pm 21.3\%$). Another group of players who seemed to be unable to deliver optimal performance under high pressure situations were the wing attack players ($46.4 \pm 20.3\%$) who had significantly lower scores than the goal attack, goal keepers and wing defence players.

In this regard, Wills and Kinrade (2010) found that poor passing accuracy under pressure by netball players were largely due to the players failing to make correct decisions (e.g. when or who to pass to), rather than failing to perform the motor action of the passing skill. This particular finding contribute to a better understanding of possible underlying reasons for the observed weakness among the wing attack players in the present study, but not for the goal shooters. Because goal shooters are primarily judged on their goal shooting percentages and not on their passing accuracy, it could be assumed that their impaired performance under pressure was due to poor motor skill execution. Further research in this regard is required.

TABLE 4: DESCRIPTIVE STATISTICS AND COMPARISONS BETWEEN THE DIFFERENT POSITIONAL GROUPS FOR PEAKING UNDER PRESSURE

Mean and standard deviation	Positional group	Effect sizes (Cohen's <i>d</i> -value)						
		Goal shooter (GS)	Goal attack (GA)	Wing attack (WA)	Centre (C)	Wing defence (WD)	Goal defence (GD)	Goal keeper (GK)
46.8±18.5 %	Goal shooter (n=21)	-	0.47°	0.02	0.15	0.35°	0.18	0.42°
55.6±18.3 %	Goal attack (n=27)	-	-	0.47°	0.26	0.09	0.27	0.06
46.4±20.3 %	Wing attack (n=35)	-	-	-	0.16	0.36°	0.19	0.42°
50.0±23.5 %	Centre (n=29)	-	-	-	-	0.17	0.01	0.21
53.8±21.3 %	Wing defence (n=24)	-	-	-	-	-	0.16	0.04
50.3±21.0 %	Goal defence (n=25)	-	-	-	-	-	-	0.21
54.5±17.9 %	Goal keeper (n=24)	-	-	-	-	-	-	-

° Moderate practical significance ($d =$ more or less 0.5)

TABLE 5: DESCRIPTIVE STATISTICS AND COMPARISONS BETWEEN THE DIFFERENT POSITIONAL GROUPS FOR GOAL-SETTING/MENTAL PREPARATION

Mean and standard deviation	Positional group	Effect sizes (Cohen's <i>d</i> -value)						
		Goal shooter (GS)	Goal attack (GA)	Wing attack (WA)	Centre (C)	Wing defence (WD)	Goal defence (GD)	Goal keeper (GK)
46.8±27.8 %	Goal shooter (n=21)	-	0.09	0.28	0.39°	0.53°	0.30	0.55°
49.1±22.3 %	Goal attack (n=27)	-	-	0.21	0.33	0.49°	0.24	0.52°
54.1±24.4 %	Wing attack (n=35)	-	-	-	0.11	0.26	0.04	0.29
56.9±24.9 %	Centre (n=29)	-	-	-	-	0.14	0.07	0.17
60.4±23.8 %	Wing defence (n=24)	-	-	-	-	-	0.21	0.03
55.0±27.2 %	Goal defence (n=25)	-	-	-	-	-	-	0.24
61.1±24.3 %	Goal keeper (n=24)	-	-	-	-	-	-	-

° Moderate practical significance ($d =$ more or less 0.5)

The frequency of and effectiveness with which the players in the respective positional groups made use of goal-setting/mental preparation are reported in Table 5. The goal shooters

(46.8±27.8%) and goal attack players (49.1 ± 22.3%) were significantly less prone to use these techniques than the goal keepers (61.1 ± 24.3%) and wing defence players (60.4 ± 23.8%). In fact, players in the defensive positions (wing defence, goal defence and goal keepers) made greater use of these skills than the attacking players (goal shooters, goal attack and wing attack), thereby indicating an area in which the attacking players may need more guidance in order to enhance their mental preparation and their performances.

TABLE 6: DESCRIPTIVE STATISTICS AND COMPARISONS BETWEEN THE DIFFERENT POSITIONAL GROUPS FOR CONCENTRATION

Mean and standard deviation	Positional group	Effect sizes (Cohen's <i>d</i> -value)						
		Goal shooter (GS)	Goal attack (GA)	Wing attack (WA)	Centre (C)	Wing defence (WD)	Goal defence (GD)	Goal keeper (GK)
63.9±15.9 %	Goal shooter (n=21)	-	0.00	0.04	0.11	0.36°	0.08	0.18
63.9±16.2 %	Goal attack (n=27)	-	-	0.04	0.11	0.36°	0.08	0.18
63.3±14.7 %	Wing attack (n=35)	-	-	-	0.15	0.41°	0.06	0.23
65.8±19.0 %	Centre (n=29)	-	-	-	-	0.22	0.16	0.08
69.8±17.0 %	Wing defence (n=24)	-	-	-	-	-	0.34°	0.12
62.1±26.3 %	Goal defence (n=25)	-	-	-	-	-	-	0.22
67.4±21.7 %	Goal keeper (n=24)	-	-	-	-	-	-	-

* Moderate practical significance ($d =$ more or less 0.5)

Few differences existed with regard to the players' ability to concentrate (Table 6) as only the wing defence players (69.8±17.0%) showed practical significant better concentration levels than the goal shooters (63.9±15.9%), goal attack players (63.9±16.2%), wing attack players (63.3±14.7%) and goal defence players (62.1±26.3%).

This finding may be partially explained by the statement of Dewhursts-Hands (1980) who noted a need for superior concentration skills by the wing defence players, as they have to focus on the actions of the opposing wing attack. In this regard, Shakespear (1997) indicated that the wing defence player should try to out-think the wing attack player, because outrunning him/her is unlikely. It could be argued that well developed concentration skills would be beneficial in anticipating and/or responding to the movements of the opposition wing attack players.

TABLE 7: DESCRIPTIVE STATISTICS AND COMPARISONS BETWEEN THE DIFFERENT POSITIONAL GROUPS FOR FREEDOM OF WORRY

Mean and standard deviation	Positional group	Effect sizes (Cohen's <i>d</i> -value)						
		Goal shooter (GS)	Goal attack (GA)	Wing attack (WA)	Centre (C)	Wing defence (WD)	Goal defence (GD)	Goal keeper (GK)
46.0±28.6 %	Goal shooter (n=21)	-	0.20	0.14	0.36°	0.24	0.04	0.29
50.9±19.4 %	Goal attack (n=27)	-	-	0.05	0.21	0.07	0.26	0.13
49.8±26.2 %	Wing attack (n=35)	-	-	-	0.23	0.10	0.18	0.16
55.5±24.6 %	Centre (n=29)	-	-	-	-	0.12	0.42°	0.07
52.4±25.0 %	Wing defence (n=24)	-	-	-	-	-	0.30	0.05
45.0±25.2 %	Goal defence (n=25)	-	-	-	-	-	-	0.35°
53.8±25.3 %	Goal keeper (n=24)	-	-	-	-	-	-	-

° Moderate practical significance ($d =$ more or less 0.5)

The results in Table 7 show that the participants in general experienced a great deal of worry. This was especially evident among the goal defence players (45.0±25.2%) and goal shooters (46.0±28.6%). The primary roles of goal defence players (intercepting the ball and preventing it from reaching the circle) and goal shooters (scoring goals) are deemed critical in the eventual match outcomes. Furthermore, these players were also subject to frequent periods of rest during normal play. Andrew *et al.* (2007) propose that periods in which a player is inactive may cause them to ponder upon past mistakes and the match proceedings in general, thereby increasing the prevalence of negative thoughts and worries.

Poor confidence and achievement motivation levels were evident for all the positional groups (Table 8). It was also observed that the goal shooters (48.8±11.0%) and centres (49.1±14.3%) had moderate practical significant lower values than the goal attack players (54.3±14.3%) and goal keepers (54.9±12.3%).

Weinberg and Gould (2007:336) indicate prior performance accomplishments as a major source of self-confidence, as "successful behaviour increases confidence and leads to further successful behaviour". However, the poor performance among the goal shooters (as noted earlier) could affect their confidence levels negatively. Although speculative, it is reasonable to suggest that goal shooters may experience a fear of failure, one of the factors negatively associated with achievement motivation. Gill (cited in Weinberg & Gould, 2007:61) defines achievement motivation as "a person's orientation to strive for task success, persist in the face of failure and experience pride in accomplishments". Therefore, these two attributes (confidence and achievement motivation) were closely related and grouped together in the ACSI-28. Previous reports by Erculj and Vicic (2001) showed centres in basketball to have significantly weaker motivational dimensions than the forwards and guards. They

hypothesised that playmakers and links (such as centres), who do not directly affect the match outcome by the scoring of goals (goal shooter and goal attacks) or by preventing goals from being scored (goal defence and goal keepers), would show lower achievement motivation levels, as they might not value their contribution to the teams' results highly. In addition, this may adversely affect their self-confidence levels.

TABLE 8: DESCRIPTIVE STATISTICS AND COMPARISONS BETWEEN THE DIFFERENT POSITIONAL GROUPS FOR CONFIDENCE AND ACHIEVEMENT MOTIVATION

Mean and standard deviation	Positional group	Effect sizes (Cohen's <i>d</i> -value)						
		Goal shooter (GS)	Goal attack (GA)	Wing attack (WA)	Centre (C)	Wing defence (WD)	Goal defence (GD)	Goal keeper (GK)
48.8±11.0 %	Goal shooter (n=21)	-	0.43°	0.15	0.02	0.23	0.29	0.52°
54.3±14.3 %	Goal attack (n=27)	-	-	0.26	0.36°	0.18	0.14	0.04
50.7±13.9 %	Wing attack (n=35)	-	-	-	0.11	0.07	0.12	0.31
49.1±14.3 %	Centre (n=29)	-	-	-	-	0.18	0.23	0.43°
51.7±14.1 %	Wing defence (n=24)	-	-	-	-	-	0.04	0.24
52.3±13.1 %	Goal defence (n=25)	-	-	-	-	-	-	0.20
54.9±12.3 %	Goal keeper (n=24)	-	-	-	-	-	-	-

° Moderate practical significance ($d = \text{more or less } 0.5$)

The ACNielsen (2007) research report, on motivations and barriers to netball participation, indicated that the culture of netball is based on criticism, rather than encouragement. This was attributed to the focus of netball coaches on winning rather than on participation, coupled with criticism from parents. Within the context of the research instrument used in the present study, coachability referred to the manner in which players coped with negative feedback, advice and instructions from their coaches.

The scores in Table 9 show a tendency of the goal attack players to effectively cope with these types of information significantly better than all the other positional groups. Dewhurst-Hands (1980) notes that goal attack players are particularly exposed to both criticism and praise from their coaches due to the high demands placed on them regarding goal shooting and their contribution in the attacking third of the netball court. The results suggested that goal attack players could have become more coachable due to continuous exposure to both positive and negative feedback from their coaches.

TABLE 9: DESCRIPTIVE STATISTICS AND COMPARISONS BETWEEN THE DIFFERENT POSITIONAL GROUPS FOR COACHABILITY

Mean and standard deviation	Positional group	Effect sizes (Cohen's <i>d</i> -value)						
		Goal shooter (GS)	Goal attack (GA)	Wing attack (WA)	Centre (C)	Wing defence (WD)	Goal defence (GD)	Goal keeper (GK)
57.5±19.4 %	Goal shooter (n=21)	-	0.51°	0.07	0.02	0.03	0.08	0.09
65.4±11.9 %	Goal attack (n=27)	-	-	0.61°	0.61°	0.52°	0.44°	0.48°
56.2±17.3 %	Wing attack (n=35)	-	-	-	0.06	0.11	0.16	0.17
57.2±14.9 %	Centre (n=29)	-	-	-	-	0.05	0.11	0.12
58.0±16.4 %	Wing defence (n=24)	-	-	-	-	-	0.06	0.07
59.0±17.0 %	Goal defence (n=25)	-	-	-	-	-	-	0.00
59.0±14.9 %	Goal keeper (n=24)	-	-	-	-	-	-	-

° Moderate practical significance ($d =$ more or less 0.5)

CONCLUSIONS

The 168 comparisons between the various positional groups yielded 39 practical significant differences of moderate magnitude. The goal shooters showed significantly lower values compared to the majority of the other playing positions, whilst the goal attack players and wing defence players consistently outperformed the remaining positional groups. It is, therefore, concluded that certain positional trends do exist with regard to the psychological skill levels of netball players. This has previously been shown to be the case in soccer, basketball, rugby union and American football as well.

The observed psychological differences between the various playing positions from a variety of sporting codes should be interpreted within the context of the specific positional requirements of the sport in question. As such, it was difficult to make conclusions on the positional differences across various sports. The centres were the one playing position for which an emerging trend across various sporting codes seems to be evident. In comparison to the players in more attacking or defensive positions, the centres in basketball (Erculj & Vicic, 2001) and netball tend to show lowered achievement motivation levels. Potentially, the roles of centres (in basketball and netball) as playmakers or links have a more indirect contribution to the eventual match outcomes than the players responsible for scoring goals and those responsible for preventing goals from being scored. The possible debilitating influence on their motivational levels and performance brought about by this supporting role is something coaches should be aware of and should be interpreted and addressed within the context of the team's motivational climate.

RECOMMENDATIONS

The current results contributed to the earlier research on the South African netball population by Van den Heever *et al.* (2007a; 2007b), as well as Grobbelaar (2007). These studies respectively surveyed PST in South African netball, identified various psychological skills and attributes related to netball performance, as well as the opinions, abilities and limitations of coaches regarding PST within this sport. Collectively, these researchers stressed the need for the development and implementation of netball specific PST and coach education programmes.

The results from the present study suggests that positional differences should also be accounted for in the development and implementation of such programmes. Further research on the effectiveness of PST programmes and its effect on netball performance are recommended. Despite the observed differences in the psychological skill levels of netball players in the various playing positions, coaches and selectors should not select players in a specific position solely on their psychological skills profile. In this regard, Cox and Yoo (1995) noted that players should be selected on their overall playing abilities and long term potential. Once selected for a particular position on a team, netball specific PST programmes could be implemented.

Certain limitations of this study should be kept in mind when ensuing further research. The results of this study were based upon an elite South African netball population consisting of 185 participants. The grouping of the participants into seven playing positions resulted in small group sizes (varying between 21 and 35 subjects). Caution should therefore be applied when generalising these results to other netball playing populations. Future studies should also make use of locally standardised instruments to allow accurate self-perceptions. Failure to do so could compromise the credibility of the research findings.

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