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RELATIONSHIP BETWEEN SELECTED NETBALL SKILL VARIABLES AND PERFORMANCE AMONG INTER-COLLEGIATE FEMALE NETBALL PLAYERS

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Abstract

This study explored how selected netball skill measures were associated with overall performance among inter-collegiate female players. A random sample of 60 players was considered for the analysis. Seven skill measures were examined: chest pass, overhead pass, bounce pass with both hands, standing shot from 6 ft, single foot landing, double foot landing and zig-zag run. Performance score was used as the outcome variable. The data were summarized through descriptive statistics and examined using Pearson correlation. Standing shot from 6 ft showed a significant positive association with performance ($r = 0.304$, $p < .05$). Single foot landing ($r = 0.470$, $p < .01$) and double foot landing ($r = 0.468$, $p < .01$) also showed significant positive associations. Zig-zag run was significantly and negatively related to performance ($r = -0.294$, $p < .05$), indicating that players who completed the movement task faster tended to have better performance scores. Chest pass, overhead pass and bounce pass with both hands were not significantly associated with performance in this sample. The findings point towards the value of shooting accuracy, landing control and change-of-direction ability in college-level netball performance.

Keywords: Netball Skills, Female Players, Performance, Landing Control, Standing Shot, Zig-Zag Run

Introduction

Netball performance depends on more than general fitness. During play, a performer has to pass and receive the ball quickly, stop under control, land safely, move into space and complete shooting actions with accuracy. These actions are repeated under defensive pressure and within strict footwork rules. For this reason, skill testing can give useful information to coaches who want to understand which parts of play are most connected with overall performance.

Biomechanical work in netball has long indicated that shooting mechanics and landing technique deserve special attention because they influence performance quality as well as injury risk (Steele, 1990). More recent reviews have also noted that netball remains less researched than many other team games, even though the sport places clear technical and physical demands on players (Whitehead et al., 2021). Studies on youth and university-level female players further support the use of field-based testing to understand performance profiles and guide training decisions (Ahsan & Ali, 2021; McKenzie et al., 2020).

Among inter-collegiate players, the contribution of different skill tests may not be equal. A player may score well in a passing test but may still be limited by poor landing balance, slow court movement or inaccurate shooting. Therefore, the present paper focuses on selected netball skill variables and examines their relationship with performance among inter-collegiate female netball players.

Objectives

- To describe selected netball skill variables and performance among inter-collegiate female netball players.
- To examine the relationship between selected netball skill variables and performance.
- To identify which skill variables show stronger practical relevance for performance improvement.

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Methodology

The study followed a descriptive correlational approach. Sixty inter-collegiate female netball players were selected randomly for the analysis. All selected players had experience in regular netball participation and represented different playing roles.

The selected skill variables were chest pass, overhead pass, bounce pass with both hands, standing shot from 6 ft, single foot landing, double foot landing and zig-zag run. Overall performance score was treated as the criterion variable. Mean, standard deviation, minimum and maximum values were computed to summarize the data. Pearson's product moment correlation was applied to determine the relationship of each skill variable with performance. The level of significance was fixed at 0.05.

Results

Table 1 summarizes the descriptive values for the selected skill variables and performance.

Table 1
Descriptive Statistics of Selected Netball Skill Variables and Performance

Variable	N	Minimum	Maximum	Mean	SD
Chest Pass	60	8.000	23.000	16.267	3.134
Overhead Pass	60	7.000	25.000	16.150	4.103
Bounce Pass with both hands	60	6.000	25.000	14.383	3.890
Standing Shot from 6 ft	59	2.000	17.000	9.271	4.289
Single Foot Landing	59	3.000	7.000	4.932	0.860
Double Foot Landing	60	3.000	7.000	5.017	0.987
Zig-Zag Run	60	23.450	28.600	25.383	0.969
Performance	60	23.000	59.000	38.759	11.652

The mean performance score was 38.759 (SD = 11.652), showing clear variation in the playing performance of the selected group. Among the skill variables, the larger standard deviation in standing shot from 6 ft indicates wider differences in scoring accuracy.

Table 2 shows the correlation between each selected skill variable and performance.

Table 2
Correlation of Selected Netball Skill Variables with Performance

Skill Variable	r	Level	Inference
Chest Pass	0.175	NS	Not significant
Overhead Pass	0.109	NS	Not significant
Bounce Pass with both hands	-0.167	NS	Not significant
Standing Shot from 6 ft	0.304*	$p < .05$	Significant
Single Foot Landing	0.470**	$p < .01$	Significant
Double Foot Landing	0.468**	$p < .01$	Significant
Zig-Zag Run	-0.294*	$p < .05$	Significant

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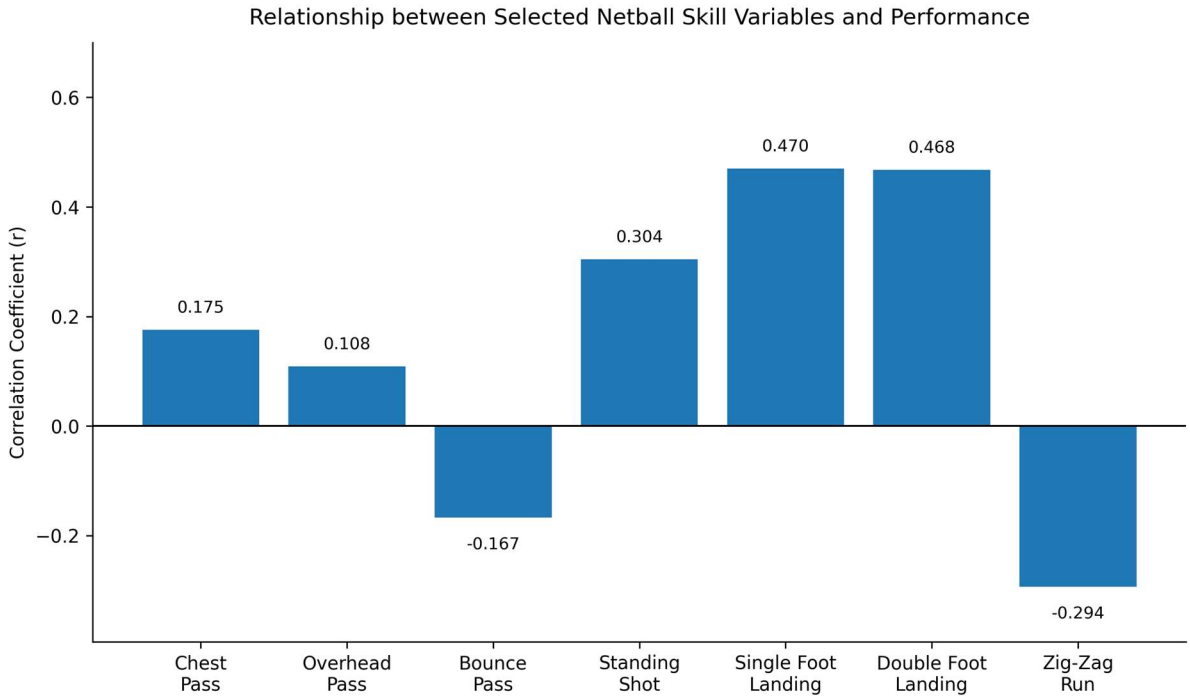
Note. $p < .01$; $p < .05$; NS = not significant.

Standing shot from 6 ft was positively related to performance ($r = 0.304$, $p < .05$). Single foot landing and double foot landing showed stronger positive relationships with performance ($r = 0.470$ and $r = 0.468$, respectively; $p < .01$). Zig-zag run showed a significant negative relationship ($r = -0.294$, $p < .05$), which means that shorter completion time was linked with better performance. The three passing variables did not reach statistical significance.

Figure 1. Correlation of selected netball skill variables with performance.



Note: Positive values indicate direct relationship; negative values indicate inverse relationship with performance.

Discussion

The results suggest that the performance of the selected inter-collegiate players was more closely associated with shooting, landing and movement-based skill indicators than with isolated passing test scores. The significant result for standing shot is understandable because scoring is directly linked with successful attacking play. Earlier biomechanical discussion of netball also identified goal shooting as a key skill area for performance analysis (Steele, 1990).

The strongest relationships in the present analysis were observed for single foot and double foot landing. This highlights the importance of body control after receiving, jumping or changing direction. Landing quality can influence how quickly a player stabilizes, passes, shoots or repositions for the next action. Steele (1990) also noted that landing mechanics are relevant in netball because they affect both movement efficiency and stress on the lower limbs.

The negative association between zig-zag run and performance shows that players who moved through the directional task faster tended to score higher in performance. This agrees with the practical demands of netball, where quick changes of direction and court movement are needed during both attack and defence. Previous work has recognized change-of-direction and movement-related testing as useful in profiling female netball players (McKenzie et al., 2020), and applied reviews also show the importance of sport-specific testing in netball (Whitehead et al., 2021).

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The non-significant findings for chest pass, overhead pass and bounce pass should be interpreted carefully. Passing remains a basic requirement of netball, but a simple passing test may not capture game factors such as timing, opponent pressure, receiving angle, decision making and tactical support. Therefore, coaches should not ignore passing practice; instead, passing should be trained along with movement, decision-making and match-like pressure.

Conclusion

The study concluded that standing shot from 6 ft, single foot landing, double foot landing and zig-zag run were significantly related to performance among inter-collegiate female netball players. Chest pass, overhead pass and bounce pass with both hands were not significantly related to performance in the selected sample. The findings indicate that scoring skill, landing control and movement efficiency may have greater practical connection with performance than isolated passing test scores.

Practical Recommendations

- Netball training sessions should include regular standing shot practice under varied conditions.
- Single foot and double foot landing drills should be included to improve balance and body control.
- Zig-zag and change-of-direction drills may be used for performance monitoring.
- Passing practice should be combined with movement, decision-making and defensive pressure rather than trained only in isolation.
- Future studies may use larger samples and compare players by position or level of competition.

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