

TECHNICAL PERFORMANCE ANALYSIS OF IRAN PREMIER LEAGUE SOCCER PLAYERS IN 2012-2013 SEASON

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Abstract. *Background and purpose of study:* analysis of IRAN premier league soccer players' technical performance in season 2012-2013, using a computerized match analysis system (Borhan Mobin Development Management Co, IRAN). *Material and methods:* in this study, data were obtained from 120 players, who performed in competitions 90 minutes. The players were classified into 3 positional roles: defenders, midfielders and forwards. Technical performance variables analysis included: total passes, total successful passes, pass accuracy, total shots; total shots to target, shot accuracy, ball interception and ball losses. The data were statistically analyzed by one-way ANOVA, Kruskal-Wallis, Mann-Whitney U and Tukey post hoc test. *Results:* The findings of this study showed that players performed about 45 passes per competition. Midfielders and defenders had significantly higher number of passes than forwards. Pass accuracy was about 67% and there were no significant differences between positional roles. Also, the players performed about 0.8 shots per competition, forwards and midfielders had significantly higher number of shots than defenders. Shot accuracy was about 31%; midfielders and forwards had significantly higher shot accuracy than defenders. Forwards showed significantly lower ball interception and higher ball losses than other positions. *Conclusion:* The result of this study showed that there were significant differences between some technical actions in positional roles. Therefore, coaches can use this information for individualization of training according to playing positions and for optimization of training in the amateur game.

Keywords: Technical performance analysis, soccer, specific training, passing, shooting.

Introduction

Sports scientists, coaches and athletes are continuously looking for ways to easy and legal improvement of athletic performance (Nevill, Atkinson, & Hughes, 2008). Performance in soccer has been described as the interaction between several factors such as technical, tactical, physical and psychological ones (Stolen, Chamari, Castagna, & Wisloff, 2005). Coaches and scientists need to develop their knowledge about mentioned factors during competition with special reference to playing position. To obtain such information as well as to collect data, different methods have been proposed in the literature (Barros et al., 2007; Ferrario, Sforza, Dugnani, Michielon, & Mauro, 1999; Toki & Sakurai, 2005). Methods that often used include visual assessment (Bangsbo, Norregaard, & Thorso, 1991) and semi-automatic video analysis (Rienzi, Drust, Reilly, Carter, & Martin, 2000). Semi-automatic computerized technologies are replacing subjective assessment methods (Barros et al., 2007; Bradley et al., 2009; V. Di Salvo, Gregson, Atkinson, Tordoff, & Drust, 2009). These up-to-date systems allow collection of more quick and accurate performance data than other visual assessment methods (Drust, Atkinson, & Reilly, 2007).

Technical or skill-related abilities of players are important for success in soccer (Ermanno Rampinini, Impellizzeri, Castagna, Coutts, & Wisløff, 2009). However, while many studies have analyzed physical performance (Bangsbo, 1994; Bangsbo et al., 1991; Barros et al., 2007; Bradley, Di Mascio, Peart, Olsen, & Sheldon, 2010; V Di Salvo et al., 2007; Ekblom, 1986; Krustup, Mohr, Ellingsgaard, & Bangsbo, 2005; Mayhew & Wenger, 1985; E. Rampinini et al., 2007; Reilly, 2003; Rienzi et al., 2000), very few studies have investigated technical performance of elite soccer players (Carling & Dupont, 2011; Dellal et al., 2011; Dellal, Wong, Moalla, & Chamari, 2010; Ermanno Rampinini et al., 2009; Russell, Rees, Benton, & Kingsley, 2011; Russell, Rees, & Kingsley, 2013). Dellal et al. (2011) (Dellal et al., 2011) have compared technical and physical performance in FA premier league and La Liga during the 2006-2007 season. They have found that La Liga players won more heading duels (49.32% vs. 48.68%) and performed the same proportion of successful passes (76.17%). In England Premier League, wide midfielders had 20% more ball touches per possession than their La Liga counterparts. Also, they have showed that defenders won more heading and ground duels. In another study, Dellal et al. (2010) (Dellal et al., 2010) have analyzed physical and technical activity of soccer players in French first league with special reference to their playing position. They reported that the players had possession of the ball between 55.5 sec. and 74.2 sec. per match played and midfielders performed successful passes ranging from 75% to 78%, whereas lower values were found for the forwards (71%) and central defenders (63%) respectively. Rampinini et al. (2009) (Ermanno Rampinini et al., 2009) have investigated technical performance during soccer matches of the Italian Serie A league and showed that involvements with the ball, short passes, successful short passes, tackles, dribbling, shots and shots to target were higher in the more successful teams (ranked in the first 5 positions) than in the less successful teams (ranked in the last 5 positions).

This information can provide more profound understanding of technical requirement and may have direct consequences for specific training regimes and talent identification schemes (Dellal et al., 2011). Also, these findings can be a useful

tool for individualization of training according to the positional roles and provide a model for planning of training in amateur soccer players (Dellal et al., 2010). Dellal et al. (2011) (Dellal et al., 2011) proved that there are differences in various aspects of physical and technical performance of soccer players in the Spanish and English Leagues according to their playing positions. Therefore, it can be concluded that there are differences in some aspects of technical performance between various leagues and countries. This differences seem to be more obvious between Iran premier league and European leagues due to the differences in playing styles. Because of mentioned reasons in above and unavailability of match analysis studies in Asian leagues especially IRAN premier league, researchers intend to analyse technical performance of soccer players in IRAN premier league according to their playing position in the 2012-2013 season.

Material and methods

A total of observations of 330 players in the IRAN premier league for 2012-2013 season, who had participated in the matches played in Azadi stadium, was analyzed. Data were collected from these matches with the help of multiple-camera match analysis system (Borhan Mobin Development Management Co, IRAN). In this study, in order to compare players' technical performance, only the results of those outfield players, who participated in whole game (90 minutes) (n = 120 players) were used. The players were classified into 3 positional roles: defenders (n=53), midfielders (n=50) and forwards (n= 17). The recorded technical parameters were: total passes, total successful passes, passes accuracy, total shots as well as total shots to target, shots accuracy, ball interception, and ball lost.

All values are expressed as means of \pm standard deviations. The normality distribution of the data was checked using the Kolmogorov-Smirnov and Shapiro-Wilk tests. Differences between the positional roles were determined with analysis of variance (ANOVA) and Kruskal-Wallis and Significant main effects of each factor were followed-up with post hoc Tukey pair wise multiple comparison and Mann-Whitney U test. Statistical significance was set at $P < 0.05$. All statistical analyses were conducted using SPSS (Version 18.0; SPSS Inc., Chicago, IL, USA).

Results

The means \pm standard deviations of variables, one-way ANOVA and Kruskal-Wallis results and Tukey post hoc and Mann-Whitney U tests' results are showed in Table 1. Technical analysis indicated that defenders and midfielders performed a significantly higher total number of passes than the forwards ($P = 0.009$, $P = 0.001$, respectively). They also, performed a significantly greater number of successful passes than forwards ($P = 0.01$, $P = 0.001$, respectively) whereas, various playing positions showed no significant difference in pass accuracy ($P=0.225$).

Midfielders and forwards completed significantly greater total number of shots than defenders ($P = 0.001$, $P = 0.004$, respectively). They also, completed significantly greater number of shots to target than defenders ($P = 0.001$, $P = 0.009$, respectively). In addition, shots' accuracy was significantly higher for midfielders and forwards than the same of defenders ($P = 0.001$, $P = 0.016$, respectively).

Defenders and midfielders performed significantly greater number of ball interception in comparison with the forwards ($P=0.001$). Also, forwards showed significantly greater number of ball losses than defenders and midfielders. ($P = 0.003$, $P = 0.001$, respectively).

Table 1.

Technical characteristics of IRAN Premier League professional soccer players in match

	Total of players (n=120)	Forwards (n=17)	Midfielders (n=50)	Defenders (n=53)	P Value
Total of passes	47.67 \pm 13.20	37.38 \pm 11.52 ^{††}	47.97 \pm 13.06	50.68 \pm 12.38	0.001*
Number of successful passes	33.24 \pm 11.56	24.39 \pm 7.92 ^{††}	33.63 \pm 11.74	35.72 \pm 11.16	0.002*
Passes' accuracy %	0.68 \pm 0.09	0.65 \pm 0.06	0.68 \pm 0.1	0.69 \pm 0.08	0.225
Total of shots	0.68 \pm 0.82	1.19 \pm 1.01 [□]	0.85 \pm 0.81 [□]	0.35 \pm 0.61	0.001*
Number of shots to target	0.33 \pm 0.55	0.69 \pm 0.68 [□]	0.44 \pm 0.63 [□]	0.12 \pm 0.30	0.001*
Shots' accuracy %	0.27 \pm 0.39	0.46 \pm 0.40 [□]	0.33 \pm 0.43 [□]	0.15 \pm 0.32	0.006*
Ball interceptions	14.44 \pm 6.01	7.94 \pm 6.16 ^{††}	14.36 \pm 5.64	16.61 \pm 4.73	0.001*
Ball losses	1.61 \pm 1.74	3.14 \pm 1.72 ^{††}	1.62 \pm 1.62	1.12 \pm 1.58	0.001*

*Significant difference set at $p < 0.05$

†Significant difference with Midfielders

□Significant difference with Defenders

Discussion

The main purpose of this study was to analyze technical activity of IRAN Premier League professional soccer players in season 2012-2013. Results of present study show that players performed about 48 passes per competition. Also, midfielders, defenders and forwards performed about 48, 51 and 37 passes per competition respectively. Defenders and midfielders performed significantly greater total number of passes than the forwards. Also, players in this league need to achieve success rate 68% in passing the ball. However, midfielders, defenders and forwards attained pass accuracy about 68%, 69% and 65% respectively. Various positions showed no significant difference in pass accuracy. The current study

revealed different findings that differ considerably from other leagues' results, especially at European leagues level. Russell et al. (2013) have investigated technical demands of soccer match play in the English championship. They reported that players performed about 59 passes per competition, also, in the same way, they showed that percentage of successful passes was about 77% (Russell et al., 2013). On the other hand, our findings approximately were similar to the findings reported by Carling and DuPont (2011) (Carling & Dupont, 2011). They reported that midfielders of one team in French league performed 43 passes per competition and percentage of successful passes was about 68%. In the other study, Dellal et al. (2011) (Dellal et al., 2011) compared physical and technical performance of players in FA premier league and La Liga and reported that passes' accuracy in both leagues was about 77%, that for midfielders, defenders and forwards in England league were 79, 78 and 70% respectively and in Spanish league it was 78, 78 and 74% respectively. According to the reports it seems that the observed differences in results of studies may be related to teams' playing styles in various leagues. Moreover, it seems that teams that prefer short passes and occasional use of long and direct passes have higher number of passes and also higher passes' accuracy. Therefore, in IRAN league passes' number and accuracy are less than the some European leagues and it may be related to more frequent use of long and direct passes, as well as to challenging playing styles of teams in IRAN league.

In present study, players performed about 0.7 shots per competition. The total of forwards' (1.19 shots per competition) midfielders' (0.85) shots was significantly higher than defenders' (0.35). This may be related to the fact that forwards and midfielders are close to the opponent's goal and have more opportunity for shots to the opponent's goal. Shot accuracy was about 27% for all players. The forwards' (46%) and midfielders' (36%) shot accuracy was significantly higher in comparison with defenders (15%). These differences can be explainable due to position-related technical tasks. Rampinini et al. (2009) have investigated technical characteristics of Italian Serie A league and reported that average of total shots for players of the more successful teams were 1.8 shots and for players of the less successful teams were 1.2 shots per competition (Ermanno Rampinini et al., 2009). This information shows that total number of shots in IRAN Premier League's players is even less than of the less successful teams (ranked in the last 5 positions) in Italian Serie A league. In another study, Carling and Dupont (2011) have investigated skill-related performance when competing in successive matches within short time. They reported that midfielders performed about 2 shots in the first match in the sequence and 1.3, 2.5 shots in the second and third matches respectively (Carling & Dupont, 2011). One of the other potential reasons is that IRAN premier league played the most times of match in center of field and less played in one third of the opponent's defense and for this reason the number of shots in IRAN Premier League are less than European Leagues.

In this study, quantity of ball interceptions was 14 per competition. Whereas, Russell et al. (2011) reported that mean number ball interception was 5 per competition in the soccer players from junior department of a club that competes in English championship. Also, in this study midfielders and defenders had significantly higher quantity of ball interceptions than forwards (Russell et al., 2011). This can be related to technical and tactical tasks of positional roles. Mean number of ball losses in present study was 1.6 per competition; forwards showed more balls losses than other playing positions. This result is similar to the findings reported by Dellal et al. (2010) (Dellal et al., 2010) that forwards showed greater ratio of ball losses in possession than the other playing position and central defenders had the lowest ratio of ball losses in possession. This can be related to positional characteristics of forwards, because they need to use dribbling more frequently and endure higher risk than other positions. Also, a ball loss by midfielder and particularly by defenders is very dangerous for the team because the opposing players are very close to the goal and have an unbalanced defense.

Conclusion

In general, the results of present study show the technical demands of IRAN premier league players according to their playing position and indicate that there are significant differences in some technical characteristics of positional roles. Consequently, coaches can use this information for individualization of training according to playing position and also for training optimization in the amateur game. Also, such information can be used by persons responsible for technical training of soccer players in order to increase the specificity of used before training procedure and during competitions. In addition, our findings exhibit that number of total passes, passes' accuracy, number of total shots, and shot accuracy of players in IRAN Premier League's players are lower than in European leagues such as English FA premier league, Spanish La Liga and Italian Serie A leagues. Therefore, Iranian coaches should emphasize the mentioned technical actions to obtain better results.

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