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**Defending corner kicks in the English Premier League: Near-post guard systems**

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**Defending corner kicks in the English Premier League: Near-post guard systems**

**Abstract**

The aim of this study was to investigate the use of near-post guard systems when defending corner kicks in the English Premier League during the 2015/2016 season. A total of 750 corner kicks from 79 English Premier League matches were analysed. There were a total of eight different near-post guard systems observed. Only six corner kicks (0.8%) were observed where there was no guard positioned in the near-post area when defending corner kicks. The one-one system only conceded one goal from 148 corner kicks (0.7%) observed, whereas the one-zero system conceded eight goals from 159 corner kicks (5.0%) observed. However, when all attempts at goal were included, there was no significant association between the different near-post guard systems and the number of attempts at goal (p>0.05) An important finding was that there were 236 defensive clearances performed by the guards from the 750 corner kicks that were analysed (31.5%), this suggests that these defensive players play an important role in preventing the attacking team from having an attempt at goal from a corner kick. Further research on corner kicks is still required and suggestions have been made for future investigations.

Key words: performance analysis; tactics; strategy; coaching; set play; football.

**Introduction**

Soccer has been one of the most widely researched sports within the area of sports performance analysis. Various facets of soccer performance have been explored and recently the following areas have been investigated: game style (Hewitt et al., 2016); the impact of player dismissals (O’Donoghue & Robinson, 2016a; Lago-Penas et al., 2016a); score-line effects (O’Donoghue & Robinson, 2016b); home advantage (Lago-Penas et al., 2016b); fixture scheduling (Soroka & Lago-Penas, 2016); and the influence of substitutions (Gomez-Ruano et al., 2016).

For a team to be successful in soccer, they must score more goals than the opposition and therefore previous research has investigated how soccer teams create opportunities to score (e.g. Gonzalez-Rodenas et al., 2016). In soccer, goals can be scored from open play or from set-plays (penalty kicks, free kicks and corner kicks) (Pulling, 2015). Previous research has stated that approximately one-third of goals within elite soccer are scored either directly or indirectly from a set-play (Yiannakos & Armatas, 2006; Armatas et al., 2007). This suggests that set-play goals may be very important for winning soccer games.

A corner kick is awarded when the whole of the ball passes over the goal line, on the ground or in the air, having last touched a player of the defending team, and a goal is not scored (Federation Internationale de Football Association, 2015). A long corner kick is defined as a corner kick that is delivered directly into the 18-yard box by the corner kick taker with the intention of creating a goal scoring opportunity (Pulling, 2015). It has previously been reported that an average of 10 corner kicks are taken per match (Casal et al., 2015). Armatas et al. (2007) stated that it is important to analyse and research the offensive and defensive aspects of corner kicks as this may help a soccer team to win games. The offensive perspective of corner kicks has been explored in the majority of previous research. Carling et al. (2005) explored the delivery type of corner kicks; whilst Ensum et al. (2000); Taylor et al. (2005); Page and Robins (2012); Schmicker (2013); and Pulling (2015) explored the area of delivery of corner kicks along with the delivery type. Corner kick research has also explored the impact of match status (De Baranda & Lopez Riquelme, 2012) and the influence of numerous offensive and defensive variables on elite corner kick success (Casal et al., 2015).

Pulling et al. (2013) investigated defensive tactics of English Premier League teams at corner kicks, specifically exploring the marking systems applied and the positioning of players on goalposts. It was clearly evident that that the majority of coaches and managers within the English Premier League preferred to implement a one-to-one marking system (90.1% of total corner kicks) as opposed to a zonal marking system (9.9% of total corner kicks). The most common system for defenders positioned at the goalposts was having a defender positioned only on the far post (47.3% of total corners). Pulling et al. (2013) stated that future research could explore how teams use a defender/s in front of the near-post and the role that this player has in defending corner kicks. This suggests that the near-post guard systems that teams utilise to defend corner kicks should be investigated.

There has been no previous research on near-post guard systems when defending corner kicks, however, soccer coaching literature has provided some discussion in this area. Hughes (1996) suggests that the player positioned on the near-post when defending corner kicks should be a yard off of the goal-line and a yard in front of the post. This player should be more concerned with the space in front of them than the space behind, suggesting that this player is acting as a guard. Hughes (1996) also stated that the defender positioned on the near-post cannot defend the near-post area alone and diagrammatically demonstrates that another player is required to be positioned in the area in front of the near-post. Hargreaves (1990) supports this and highlights that a defensive player is positioned close to the near-post when defending corner kicks with another defender positioned three yards from the goal line and in front of the near-post. It appears that a near-post guard system is required when defending corner kicks as it has been suggested that attacking players are regularly positioned in the near-post area and corner kicks delivered to the near-post area can create goal scoring opportunities for the attacking team (Hughes, 1996; Welsh, 1999; Smith et al,, 2000; Edward, 2003). Hargreaves (1990) stated that near-post corners have two main variations. The target player, who is positioned in or moves into the near-post area, either takes a direct shot on goal, usually by heading the ball, or flicks the ball into an area in front of the goal. Wilkinson (1996) suggests that two defenders are required in the near-post area to defend the target player as well as positioning a defensive player inside the near-post. It appears that defending the near-post-area successfully during corner kicks would reduce the number of attempts at goal for the attacking team.

Due to the paucity of research into defensive tactics of corner kicks in soccer, it seems that there is a need to investigate the use of near-post guard systems when defending corner kicks. Previous research has also highlighted the corner kicks are regularly delivered into the near-post area by the attacking team (Schmicker, 2013; Pulling, 2015). The aim of this study was to investigate the use of near-post guard systems when defending corner kicks in the English Premier League during the 2015/2016 season.

**Method**

Corner kicks were sampled from 79 English Premier League soccer matches during the 2015/16 season. The games sampled were collected through broadcast coverage provided by both Sky Sports and BT Sport. The games were recorded and 750 corner kicks were analysed post event. A pilot test was conducted on 50 corner kicks with a view of developing operational definitions and making them as unambiguous as possible (Hughes, 2015). The pilot test also enabled the zones for the near-post guards to be devised (figure 1). All corner kicks analysed within the pilot test were not used in the sample for this study.

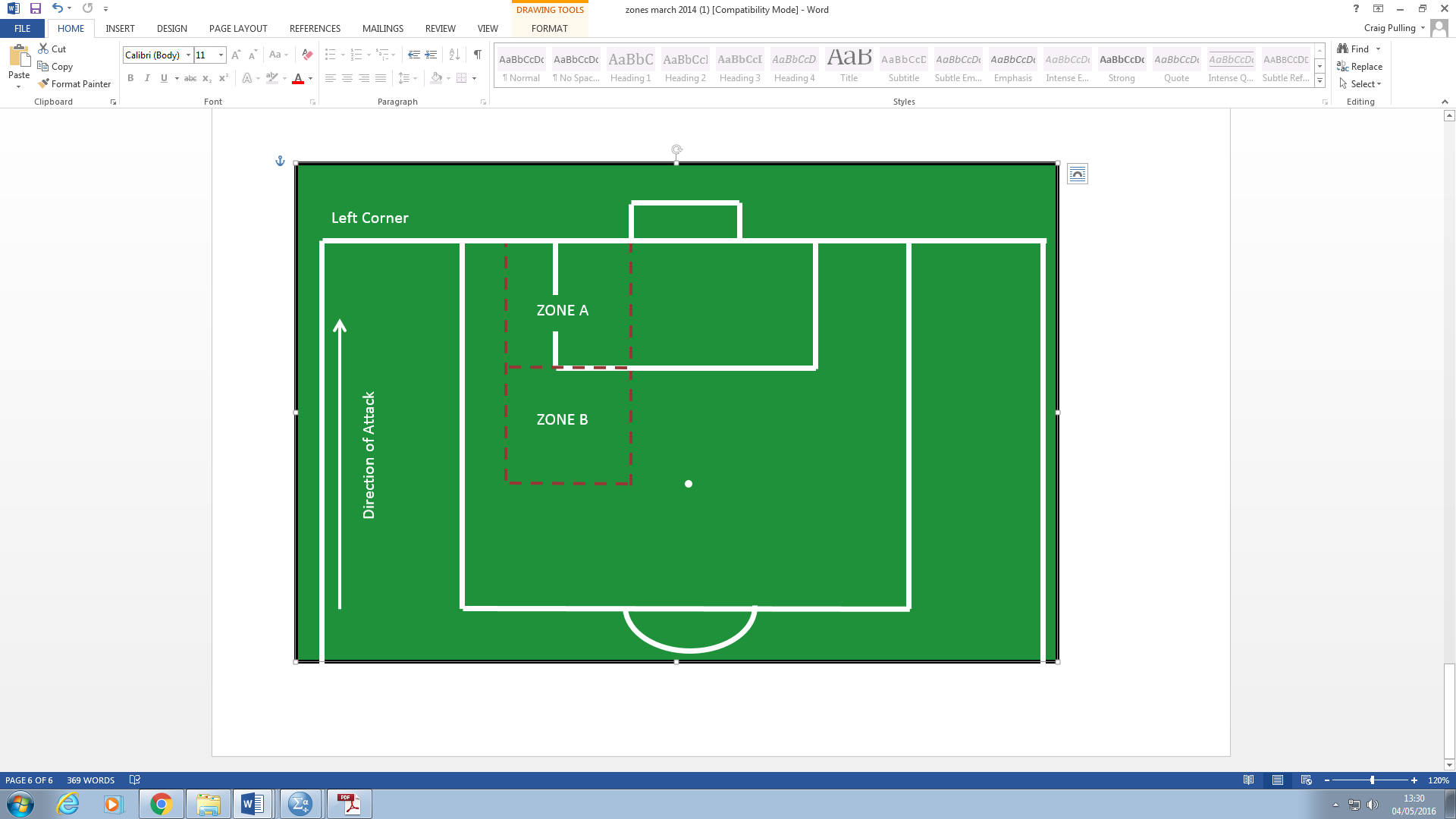


Figure 1. Zones for near-post guards.

The data were recorded and input into a Microsoft Office Excel spread sheet (Microsoft Corporation, Excel 2010, Redmond, WA). The near-post guard system (the number of guards positioned in zone A and zone B) was recorded as the corner kick taker struck the ball. A total of eight different near-post guard systems were recorded based on the number of guards in each zone (see table 1). Once the corner kick had been taken the main outcome was recorded. The operational definitions of the corner kick outcomes are presented in Table 2.

Table 1. Near-post guard systems.

|  |  |  |
| --- | --- | --- |
| Number of guards in zone A | Number of guards in zone B | Name of system |
| 0 | 0 | Zero-zero |
| 0 | 1 | Zero-one |
| 1 | 0 | One-zero |
| 1 | 1 | One-one |
| 1 | 2 | One-zero |
| 2 | 0 | Two-zero |
| 2 | 1 | Two-one |
| 2 | 2 | Two-two |

Table 2. Operational definitions of the corner kick outcomes (majority of definitions from Pulling et al., 2013 & Pulling, 2015)

|  |  |
| --- | --- |
| **Corner Kick Outcome** | **Operational Definition** |
| Goal | The ball went over the goal-line inside the dimensions of the goalposts. The referee awarded the goal. |
| Attempt on target excluding goals | Any goal attempt that was heading towards the goal which was saved by the goalkeeper or blocked by a defensive player. |
| Attempt off target | Any attempt by the attacking team that was not directed within the dimensions of the goal. An attempt that made contact with the crossbar or either of the posts was classified as an attempt off target. |
| Penalty | The defending team commits a foul during the corner kick phase and the referee awards a penalty kick. |
| Ball recycled out of the 18 yard box | The attacking team made contact with the ball which led to the ball exiting the 18-yard box and possession being retained by the attacking team. |
| Defensive clearance (non-guard) | A defensive player who was not a near-post guard made contact with the ball and it either exited the 18 yard box or the referee awarded another corner. |
| Defensive clearance (guard in Zone A) | A guard in Zone A made contact with the ball and it either exited the 18 yard box or the referee awarded another corner. |
| Defensive clearance (guard in Zone B) | A guard in Zone B made contact with the ball and it either exited the 18 yard box or the referee awarded another corner. |
| Defensive free kick | The referee awarded a free kick to the defensive team. |
| Ball did not come into play | The corner kick failed to enter the field of play. |
| Ball exited 18 yard box without any contact | The ball was not touched by any player and the ball exited the 18 yard box. |
| Goalkeeper catch | The goalkeeper gained possession of the ball by catching the ball. |
| Goalkeeper punch | The goalkeeper made contact with the ball by using a punching action. |

***Reliability***

Inter-observer and intra-observer reliability analyses were conducted to assess the objectivity and reliability of the data, respectively (O’Donoghue, 2015). For inter-observer reliability, an analyst who was independent of the research team observed 75 (10%) of the original sample of corner kicks. This analyst had three years of experience of analysing soccer. Prior to analysing the corner kicks, the analyst was given access to the specifically designed Microsoft Excel spread sheet and the operational definitions. The data collected by the independent analyst was compared to the data collected by the original observer. The intra-observer reliability analysis was conducted by the initial observer analysing 75 corner kicks (10%) from the original sample. This was conducted two weeks after the initial analysis in order to reduce potential learning affects (O’Donoghue, 2015). Kappa were utilised to assess both inter-observer and intra-observer reliability for near-post guard system and corner kick outcomes.

Table 3. Reliability tests Kappa statistics.

|  |  |  |  |
| --- | --- | --- | --- |
| **Reliability Test** | **System/Outcome** | **Kappa Value** | **Strength of Agreement**  **(Altman, 1995).** |
| Inter-observer | Near-post guard system | 0.81 | Very good |
| Inter-observer | Corner kick outcome | 0.92 | Very good |
| Intra-observer | Near-post guard system | 0.89 | Very good |
| Intra-observer | Corner kick outcome | 0.97 | Very good |

***Data Analysis***

Statistical analysis was performed using IBM SPSS for Macintosh, version 22.0 (IBM Corp., New York, USA). Four of the near-post guard systems were removed from the statistical analysis due to a small sample size. Therefore the following five near-post guard systems were utilised for the statistical analysis: (1) one-zero, (2) two-zero, (3) one-one, (4) two-one, (5) two-two. In addition all outcome data were collapsed in the following manner: Attempts at goal were defined as a goal, attempt on target excluding goals, and attempt off target. Defensive outcomes were defined as a defensive clearance (non-guard), defensive clearance (guard in Zone A), defensive clearance (guard in Zone B), defensive free kick, ball did not come into play and ball exited 18 yard box without any contact. Attacking outcomes were defined as ball recycled out of the 18 yard box and a penalty. Goalkeeper outcomes were defined by goalkeeper punch and goalkeeper catch. The following associations were tested statistically using the chi-squared (χ2) test of independence; (1) Attempts at goal in relation to defensive system, (2) the number of attacking outcomes in relation to defensive system, (3) defensive outcomes in relation to defensive system, and, (4) the number of goalkeeper outcomes in relation to defensive system. The alpha level was set at 0.05. Cramer’s V was used to calculate the effect sizes.

**Results**

From the 750 corner kicks analysed within this study 22 goals were scored (2.9% of total corners). In total there were 155 attempts at goal from the 750 corner kicks that were analysed, therefore 20.7% of corner kicks led to an attempt at goal. Of the 155 attempts at goal, 83 (53.5% of total attempts at goal) of these were off target, whereas 50 (32.3% of total attempts at goal) were on target but did not lead to a goal, 22 (14.2% of total attempts at goal) of the attempts at goal led to a goal being scored. There were a total of eight different near-post guard systems observed, with the two-zero system being used most frequently (27.5% of total corners). Four of the near-post guard systems (two-two, zero-one, one-two and zero-zero) conceded no goals, however, a relatively few number of corner kicks were observed with these systems. The one-one system only conceded one goal from 148 corner kicks (0.7%) observed, whereas the one-zero system conceded eight goals from 159 corner kicks (5.0%) observed. However, when all attempts at goal are included, there was no significant association between the different near-post guard systems and the number of attempts at goal (ᵡ24 = 1.65, p = 0.801, V = 0.05).

Table 4. Near-post guard systems and attempts at goal.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Guards in zone A** | **Guards in zone B** | **Frequency** | **Goal** | **Attempt on target (excl’ goals)** | **Attempt off target** | **Total attempts** |
| **Two** | **Zero** | 206 (27.5) | 8 (3.9) | 12 (5.8) | 18 (8.7) | 38 (18.4) |
| **Two** | **One** | 168 (22.4) | 5 (3.0) | 13 (7.7) | 21 (12.5) | 39 (23.2) |
| **One** | **Zero** | 159 (21.2) | 8 (5.0) | 9 (5.7) | 17 (10.7) | 34 (21.4) |
| **One** | **One** | 148 (19.7) | 1 (0.7) | 9 (6.1) | 18 (12.2) | 28 (18.9) |
| **Two** | **Two** | 47 (6.3) | 0 (0) | 7 (14.9) | 2 (4.3) | 9 (19.2) |
| **Zero** | **One** | 9 (1.2) | 0 (0) | 0 (0) | 5 (55.6) | 5 (55.6) |
| **One** | **Two** | 7 (0.9) | 0 (0) | 0 (0) | 1 (14.3) | 1 (14.3) |
| **Zero** | **Zero** | 6 (0.8) | 0 (0) | 0 (0) | 1 (16.7) | 1 (16.7) |

From the near-post guard systems that were involved in the statistical analysis, the two-two system had the highest percentage of defensive outcomes (72.3%), closely followed by the one-one system (70.3%). The lowest percentage of defensive outcomes were for the one-zero system (57.2%). There was no significant association between the different near-post guard systems and the number of defensive outcomes (ᵡ24 = 7.40, p = 0.116, V = 0.10).

Table 5. Near-post guard systems and defensive outcomes.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Guards in zone A** | **Guards in zone B** | **Defensive clearance (non-guard)** | **Defensive**  **clearance (guard in zone A)** | **Defensive**  **clearance (guard in zone B)** | **Defensive free kick** | **Ball did not come into play** | **No contact with the ball** |
| **Two** | **Zero** | 59 (28.6) | 64 (31.1) | n/a | 5 (2.4) | 1 (0.5) | 7 (3.4) |
| **Two** | **One** | 37 (22.0) | 47 (28.0) | 19 (11.3) | 1 (0.6) | 1 (0.6) | 7 (4.2) |
| **One** | **Zero** | 56 (35.2) | 26 (16.4) | n/a | 5 (3.1) | 0 (0) | 4 (2.5) |
| **One** | **One** | 44 (29.7) | 26 (17.6) | 25 (16.9) | 5 (3.4) | 0 (0) | 4 (2.7) |
| **Two** | **Two** | 9 (19.1) | 14 (29.8) | 10 (21.3) | 1 (2.1) | 0 (0) | 0 (0) |
| **Zero** | **One** | 3 (33.3) | n/a | 1 (11.1) | 0 (0) | 0 (0) | 0 (0) |
| **One** | **Two** | 2 (28.6) | 2 (28.6) | 2 (28.6) | 0 (0) | 0 (0) | 0 (0) |
| **Zero** | **Zero** | 3 (42.9) | n/a | n/a | 0 (0) | 0 (0) | 1 (16.7) |

From the 750 corner kicks observed, there were only 23 attacking outcomes (ball recycled out of play and penalty) recorded. There was no significant association between the different near-post guard systems and the number of attacking outcomes (ᵡ24 = 3.76, p = 0.440, V = 0.07). From the near-post guard systems that were involved in the statistical analysis, the one-zero system had the highest percentage of goalkeeper outcomes (16.4%), whilst the two-one system had the lowest percentage of goalkeeper outcomes (7.1%). There was a significant association between the different near-post guard systems and the number of goalkeeper outcomes (ᵡ24 = 10.37, p = 0.035, V = 0.12).

Table 6. Near-post guard systems with attacking outcomes and goalkeeper outcomes.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | |  |  | | **Attacking outcomes** | |  | | **Goalkeeper outcomes** | | |  |
| **Guards in zone A** |  | **Guards in zone B** | | | Ball recycled out of the 18 yard box | | Penalty | | GK Punch | | GK Catch |
| **Two** |  | **Zero** | | | 5 (2.4) | | 0 (0) | | 15 (7.3) | | 12 (5.8) |
| **Two** |  | **One** | | | 3 (1.8) | | 2 (1.2) | | 4 (2.4) | | 8 (4.8) |
| **One** |  | **Zero** | | | 7 (4.4) | | 1 (0.6) | | 15 (9.4) | | 11 (6.9) |
| **One** |  | **One** | | | 4 (2.7) | | 1 (0.7) | | 5 (3.4) | | 6 (4.1) |
| **Two** |  | **Two** | | | 0 (0) | | 0 (0) | | 0 (0) | | 4 (8.5) |
| **Zero** |  | **One** | | | 0 (0) | | 0 (0) | | 0 (0) | | 0 (0) |
| **One** |  | **Two** | | | 0 (0) | | 0 (0) | | 0 (0) | | 0 (0) |
| **Zero** |  | **Zero** | | | 0 (0) | | (0) | | 1 (16.6) | | 0 (0) |

**Discussion**

The aim of this study was to investigate the use of near-post guard systems when defending corner kicks in the English Premier League during the 2015/2016 season. There was a total of 22 goals scored (2.9%) from the 750 corner kicks that were observed. This finding is similar to previous research that has recorded goals from corner kicks; Taylor et al. (2005) 2.8%; Pulling et al. (2013) 4.1%; Schmicker (2013) 2.2%; and Pulling (2015) 2.7%. There were 155 attempts at goal from the 750 corner kicks analysed (20.7%) in the current study, this is lower than previous research conducted by Pulling et al. (2013) where there were 136 (31.2%) attempts at goal from 436 corner kicks in the English Premier League (2012-2013 season) and Taylor et al. (2005) who reported 68 (31.3%) attempts at goal from 217 corner kicks analysed from the English Premier League (2001-2002 season). The results imply that teams within the English Premier League have reduced the amount of attempts at goal that are being conceded from corner kicks. However, the attacking team are still able to create attempts on target (32.3% of total attempts at goal) and goals (14.2% of total attempts at goal) from corner kicks.

The most common near-post guard system that was observed was the two-zero system (27.5% of total corner kicks), followed by the two-one system (22.4%). Only six corner kicks (0.8%) were observed where there was no guard in either zone A or zone B. This suggests that the positioning of defensive players in the near-post area is an important defensive tactic for teams defending corner kicks in the English Premier League. This supports previous coaching literature that has highlighted the need to place defensive players in the near-post area (Hargreaves, 1990; Hughes, 1996; Wilkinson, 1996). Another important finding was that 576 of the 750 corner kicks analysed (76.8%) had at least two guards positioned in the near-post area, supporting the suggestions made by Hargreaves (1990), Hughes (1996) and Wilkinson (1996) that two defensive players are required to defend the near-post area. Four of the near-post guard systems (two-two, zero-one, one-two and zero-zero) conceded no goals, however, a relatively few number of corner kicks were observed with these systems. The one-one system only conceded one goal from 148 corner kicks (0.7%) observed, whereas the one-zero system conceded eight goals from 159 corner kicks (5.0%) observed. However, when all attempts at goal are included, there was no significant association between the different near-post guard systems and the number of attempts at goal (ᵡ24 = 1.65, p = 0.801, V = 0.05). It is difficult to interpret the overall success of each near-post guard system, as many factors can influence the outcome of a corner kick including the type of delivery and the location of the delivery (Ensum et al., 2000; Taylor et al., 2005; Page & Robins, 2012; Schmicker, 2013; Pulling, 2015). Future research on corner kicks could consider a number of different variables and complete a multivariate analysis (see Casal et al., 2015).

The two-two system had the highest percentage of defensive outcomes (72.3%) form the systems that were included in the statistical analysis, closely followed by the one-one system (70.3%). The lowest percentage of defensive outcomes was for the one-zero system (57.2%). There was no significant association between the different near-post guard systems and the number of defensive outcomes (ᵡ24 = 7.40, p = 0.116, V = 0.10). An important finding was that there were 236 defensive clearances performed by the guards from the 750 corner kicks that were analysed (31.5%), this suggests that these defensive players play an important role in preventing the attacking team from having an attempt at goal. When a two-two near-post system was applied, the ball was cleared on 24 occasions from a total of 47 corners (51.1%), whereas when only a one-zero system was used there 26 clearances performed from a total of 159 corner kicks (16.4%). Although it is expected that there would be a higher percentage of clearances when more players are positioned in the near-post area, the difference between the two systems is relatively large. This may be due to the positioning of the attacking players within the near-post area (Hughes, 1996). From an attacking perspective, it may be advantageous to deliver the corner kick to a different area of the penalty box (e.g. far-post area) when the defensive team positions a high number of players within the near-post area (Smith et al., 2000).

From the near-post guard systems that were involved in the statistical analysis, the one-zero system had the highest percentage of goalkeeper outcomes (16.4%), whilst the two-one system had the lowest percentage of goalkeeper outcomes (7.1%). There was a significant association between the different near-post guard systems and the number of goalkeeper outcomes (ᵡ24 = 10.37, p = 0.035, V = 0.12). However, the effect size of the association (0.12) is considered to be weak (Cohen, 1988). The position of the goalkeeper is critical when defending corner kicks (Hughes, 1996). The goalkeeper should be positioned half way across the goal and be positioned sideways (Lauffer, 1989; Hughes, 1996). This position is important as it will allow the goalkeeper to have a view of the corner kick taker and the position of the defensive and attacking players in the near-post area. The one-zero system has only one guard positioned in the near-post area and this may allow the goalkeeper to have a better view of the corner kick delivery and therefore able to make a better decision of whether to come and catch or punch the ball (Welsh, 1999). It is important to note that other factors, particularly the location of the delivery and the delivery type would influence the decision making of the goalkeeper (Pulling, 2015).

A limitation of the current study concerns the generalisability of the results, as this study only investigated one specific competition, the English Premier League. Future research may investigate how near-post guard systems are used in different leagues and competitions. For example, it could be beneficial in the future to compare other major leagues such as the Bundesliga and La Liga, which are of a similar standard of soccer (Mackenzie & Cushion, 2013). This would allow for similarities and differences to be explored between different leagues in regards to near-post guard defensive systems. Future research could investigate near-post guard systems in relation to the delivery type (inswinger, outswinger, clipped, driven or short) and the location of the delivery. Furthermore, future research could investigate defensive and offensive player movements at corner kicks and the interaction that occurs between these players.

**Conclusion**

The purpose of this study was to investigate the use of near-post guard systems when defending corner kicks in the English Premier League during the 2015/2016 season. There were a total of eight different near-post guard systems observed, with the most common near-post guard system being the two-zero system. The one-one system only conceded one goal from 148 corner kicks (0.7%) observed, whereas the one-zero system conceded eight goals from 159 corner kicks (5.0%) observed. However, when all attempts at goal were included, there was no significant association between the different near-post guard systems and the number of attempts at goal (p>0.05) An important finding was that there were 236 defensive clearances performed by the guards from the 750 corner kicks that were analysed (31.5%), this suggests that these defensive players play an important role in preventing the attacking team from having an attempt at goal from a corner kick. Further research on corner kicks is still required and it may be appropriate to conduct a detailed investigation exploring numerous variables that allows for a multivariate analysis.

**References**

Altman, D. G. (1995). *Practical Statistics for Medical Research.* London: Chapman and Hall.

Armatas, V., Yiannakos, A., Papadopoulou, S., & Galazoulas, C. (2007). Analysis of the set-plays in the 18th football World Cup in Germany. *Physical Training.* Retrieved from http://ejmas.com/pt/2007pt/ptart\_galazoulas\_0710.html.

Carling, C., Williams, A.M., & Reilly, T. (2005). *Handbook of Soccer Match Analysis: A Systematic Approach to Improving Performance.* Abingdon: Routledge.

Casal, C.A., Manerio, R., Arda, T., Losada, J.L., Rial, A. (2015). Analysis of corner kick success in elite football. *International Journal of Performance Analysis in Sport, 15*(2), 430-451.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* *(2nd edition).* Hillsdale, New Jersey: Lawrence Erlbaum Associates.

De Baranda, P.S., & Lopez-Riquelme, D. (2012). Analysis of corner kicks in relation to match status in the 2006 World Cup. *European Journal of Sports Science, 12*(2), 121-129.

Edward, T. (2003). *Soccer Skills and Tactics*. Bath: Parragon.

Ensum, J., Williams, M., & Grant, A. (2000). An analysis of attacking set plays in Euro 2000. *Insight: The F.A Coaches Association Journal,* *1*(4), 36-39.

Federation Internationale de Football Association. Laws of the Game: 2015-2016. Retrieved from http://www.fifa.com/mm/Document/FootballDevelopment/Refereeing/02/36/01/11/LawsofthegameLawso\_Neutral.pdf. 2015.

Gomez, M.A., Lago-Penas, C., & Owen, A.L. (2016). The influence of substitutions on elite soccer teams’ performance. *International Journal of Performance Analysis in Sport,* *16*(2), 553-568.

Gonzalez-Rodenas, J., Lopez-Bondia, I., Calabuig, F., Perez-Turpin, J.A., & Aranda R. (2016). Association between playing tactics and creating scoring opportunities in counterattacks from United States Major League Soccer games. *International Journal of Performance Analysis in Sport,* *16*(2), 737-752.

Hargreaves, A. (1990). *Skills and Strategies for Coaching Soccer*. Champaign, Illinois: Leisure Press.

Hewitt, A., Greenham, G., & Norton, K. (2016). Game style in soccer: What is it and can we quantify it? *International Journal of Performance Analysis in Sport, 16*(1), 355-372.

Hughes, C. (1996). *The Football Association Coaching Book of Soccer Tactics and Skills.* Harpenden: Queen Anne Press.

Hughes, M. (2015). How do we design simple systems? How to develop a notation system. In M. Hughes & I. M. Franks (Eds.), *Essentials of Performance Analysis in Sport* (pp.124-134). Abingdon: Routledge.

Lago-Penas, C., Gomez-Ruano, M., Megias-Navarro, D., & Pollard, R. (2016b). Home advantage in football: Examining the effect of scoring first on match outcome in the five major European leagues. *International Journal of Performance Analysis in Sport*, *16*(2), 411-421.

Lago-Penas, C., Gomez-Ruano, M., Owen, A.L., & Sampaio, J. (2016a). The effects of player dismissal on competitive technical match performance. *International Journal of Performance Analysis in Sport,* *16*(3), 792-800.

Lauffer, R. (1989). *Coaching Soccer*. New York: Sterling.

Mackenzie, R., & Cushion, C. (2013). Performance analysis in football: A critical review and implications for future research. *Journal of Sports Sciences,* *31*(6), 639-676.

O’Donoghue, P. (2015). *An introduction to performance analysis of sport*. Abingdon: Routledge.

O’Donoghue, P., & Robinson, G. (2016a). The effect of dismissals on work-rate in English FA Premier League Soccer. *International Journal of Performance Analysis in Sport,* *16*(3), 898-909.

O’Donoghue, P., & Robinson, G. (2016b). Score-line effect on work-rate in English FA Premier League Soccer. *International Journal of Performance Analysis in Sport,* *16*(3), 910-923.

Page, R., & Robins, M. (2012). A corner kick analysis of a League One professional football team. *International Journal of Performance Analysis in Sport*, *12*(3), 793.

Pulling, C. (2015). Long corner kicks in the English Premier League: Deliveries into the goal area and critical area. *Kinesiology, 47*(2), 193-201.

Pulling, C., Robins, M., & Rixon, T. (2013). Defending corner kicks: Analysis from the English Premier League*. International Journal of Performance Analysis in Sport*, *13*(1), 135-148.

Schmicker, R.H. (2013). An application of SaTScan to evaluate the spatial distribution of corner kicks goals in Major League Soccer. *International Journal of Computer Science in Sport, 12,* 70-79.

Smith, D., Edwards, P., & Ward, A. (2000). *Step-by-Step Soccer Skills*. London: Hamlyn.

Soroka, A., & Lago-Penas, C. (2016). The effect of a succession of matches on the physical performance of elite football players during the World Cup Brazil 2014. *International Journal of Performance Analysis in Sport, 16*(2), 434-441.

Taylor, J.B., James, N., & Mellalieu, S.D. (2005). Notational analysis of corner kicks in English Premier League soccer. In T. Reilly, J. Cabri, & D. Aranjo (Eds.), *Science and Football V: the Proceedings of the Fifth World Congress on Football*(pp.229-234). Abingdon: Routledge.

Welsh, A. (1999). *The Soccer Goalkeeping Handbook: The Essential Guide for Players and Coaches.* Indianapolis, USA: Masters Press.

Wilkinson, W. H. G. (1996). *Soccer Tactics: Top Team Strategies Explained.* Marlborough: Crowood.

Yiannakos, A., & Armatas, V. (2006). Evaluation of the goal scoring patterns in European Championship in Portugal 2004. *International Journal of Performance Analysis in Sport*; *6*(1), 178-188.