

Analysis of contextual and technical-tactical variables of penalty shots in the Spanish 2nd B Division

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Introduction

In football, set pieces gather 30-45% of goals scored during competition. Penalties require special attention and despite being the most studied set piece, they receive less attention in training. This descriptive research aims to determine the effectiveness of penalties according to contextual, technical and tactical variables.

Methods

A total of 378 penalties from the 80 teams that competed in the Spanish 2nd B Division during the season 15-16 were analysed. A notational analysis system was designed to register all the variables related to goalkeepers, penalty takers score and effectiveness. Two different analysts fulfilled the analysis and an acceptable level of error was achieved on all variables in both intra- and inter-reliability tests ($p < 0.05$).

Results

Results showed a high effectiveness (75,4%) and a low frequency (0,2 penalties/game). Regarding goalkeepers, diving towards the natural footedness of a striker to save the ball is the most used action (58,2%). Effectiveness relationship was significant with shot direction ($\chi^2=365,134^a$; $p < ,000$), being the upper third most effective area and the bottom third most used; the relationship with the final score was also significant ($\chi^2=29,483^a$; $p < ,000$), with the ability of winning points 82% of the time that penalties were scored.

Discussion & Conclusion

Individual characteristics are the most important in penalty preparation but when individual reports are unavailable, general penalty trends are very useful. This research helps goalkeeper coaches to prepare their players before competition and highlights the utmost importance of penalty practice, both for players and goalkeepers.

References

- Andrés, J. M. P., Montero, M. L., & Botella, M. L. (2010). Relación entre eficacia, lateralidad y zona de lanzamiento del penalti en función del nivel de competición en fútbol. *RICYDE. Revista Internacional de Ciencias del Deporte*, 6(19), 154-165.
- Bar-Eli, M., Azar, O. H., Ritov, I., Keidar-Levin, Y., & Schein, G. (2007). Action bias among elite soccer goalkeepers: The case of penalty kicks. *Journal of Economic Psychology*, 28(5), 606-621.
- Hughes, M., & Wells, J. (2002). Analysis of penalties taken in shoot-outs. *International Journal of Performance Analysis in Sport*, 2(1), 55-72.
- Navia, J. A., & Ruiz, L. M. (2014). Análisis de la complejidad perceptivo-motriz y psicológica del penalti en el fútbol. [Analysis of the perceptual-motor and psychological complexity of the soccer penalty kick]. *RICYDE. Revista Internacional de Ciencias del Deporte*. doi: 10.5232/ricyde, 10(37), 264-280.