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ORIGINAL

INTERCEPTION OF A CORNER KICK IN FOOTBALL: A TASK ANALYSIS

INTERCEPCIÓN DE UN LANZAMIENTO DE CÓRNER EN FÚTBOL: ANÁLISIS DE LA TAREA

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ABSTRACT

Due to the inexistence of previous studies, the present research is aimed at performing an analysis of the task of intercepting a ball coming from a corner kick. With that objective in mind, the motor behaviour and eye movements of young goalkeepers were analysed when performing the aforementioned task. Also, variables dependent on the number of right and wrong movements during the interception were compared. Results show that errors in blocking are due to the fact that goalkeepers began their run too early and also used an inadequate pattern of hand movement and jump. The analysis of eye movements shows

that the ball is the most important informational zone, but no differences were found between hits and misses in the interception.

KEY WORDS: task analysis, movement behavior, visual search behavior, football

RESUMEN

Debido a la inexistencia de estudios previos, la presente investigación tiene como objetivo realizar un análisis de la tarea, que es atrapar un balón procedente de un lanzamiento de córner. Para ello se analizó el rendimiento, el comportamiento motor y los movimientos oculares de jóvenes porteros cuando realizaban esta tarea. Además se compararon las variables en función de los aciertos o fallos durante el bloqueo. Los resultados muestran que los fallos en el bloqueo se deben a que los porteros iniciaron su carrera demasiado pronto y además utilizaron un patrón inadecuado del movimiento de sus manos y salto. El análisis de los movimientos oculares muestra que el balón es la zona informativa más importante, pero no se obtienen diferencias entre los aciertos y los fallos en el bloqueo.

PALABRAS CLAVE: análisis de la tarea, comportamiento motor, comportamiento visual, fútbol

INTRODUCTION

The theoretical paradigm for the present study is based on the work of Newell (1986). From this point of view, the development of coordinated movements is done through changes imposed by constraints in the organism-environment system. Therefore, the constraints-led approach is a theoretical approximation that is developed from concepts taken from ecological psychology, cognitive psychology and the theory of dynamic systems. According to this theory, constraints do not prescribe a given coordinative pattern; they guide the appearance of movements when performing certain impossible or improbable patterns (Newell, 1986).

Newell (1986) proposed three categories of constraints, corresponding to organism, environment and task. These three constraints interact and limit the behaviour, so that a certain coordination pattern (optimal) arises from a specific task (Vickers, 2007). Organism constraints refer to specific features such as height or weight, as well as experiences from past training sessions or skill (Davids, Button and Bennett, 2008; Vickers, 2007). Environment constraints refer to the world's generic features, such as temperature or light, and also include the performance of the opponents in a given sport environment (Davids et al., 2008). Task constraints are more specific than the other two, and include the objective of the task and its specific rules (Vickers, 2007). The study of several sport actions, using Newell's constraints theory (1986) as starting point and its relation to decision making, motor behaviour and visual behaviour, is receiving a great deal of attention from researchers in sports sciences in the last

few years (Correia et al., 2012; Correia, Araújo, Vilar and Davids, 2013). For instance, Vaeyens, Lenoir, Williams, Mazyn and Philippaerts (2007) studied the visual behaviour of football players which were ranked beforehand according to their performance in a test that measured their decision making skills in different conditions (2 vs. 1, 3 vs. 1, 3vs. 2, 4 vs. 3 and 5 vs. 3). The most successful players showed a number of gaze focusing instances with a lower duration. Also, when comparing the different situations to analyse, determined by the task constraints, the differences between the most successful players and their less successful peers increased significantly in the more difficult situations (3 vs. 2 and 4 vs. 3).

In a specific situation, such as intercepting balls coming from a corner kick, and according to the work of Newell (1986), the three types of constraints interact globally, creating a specific organization of movement based on the task. For instance, a given organism (a goalkeeper), with its specific features (sport level, years of practice, etc.), in a given environment (football pitch, open task and conditioning factors such as the possibility or the impossibility of blocking the ball) tries to intercept the ball from a corner kick (task) with opponents (which may or may not move) in its action zone. In this situation, the goalkeeper must choose between a great variety of behaviours in order to find the most adequate solution, that is, goalkeepers must use strategies that provide a specific solution for the task they are facing (Davids et al., 2008). The goal of the present study is to perform an analysis of the task constraints, the task being intercepting a ball coming from a corner kick. For that end, following the constraints-led approach (Newell, 1986), it becomes necessary to review the specific rules corresponding to the specific task (Vickers, 2007). Those rules are explained below (FIFA, 2013).

In short, a corner kick is “a method of restarting play” when “the whole of the ball passes over the goal line, either on the ground or in the air, having last touched a player of the defending team, and a goal is not scored”. The procedure is as follows: “The ball must be placed inside the corner arc nearest to the point where the ball crossed the goal line”, “The ball is in play when it is kicked and moves” by a member of the attacking team and “The kicker must not play the ball again until it has touched another player” (FIFA, 2013:53).

In collective sports like football, a successful performance implies being in the right place at the right time. In this regard, the most experienced and successful players use anticipatory strategies to obtain a greater performance than their less experienced or successful peers (Savelsbergh et al., 2002; Mann, Williams, Ward and Janelle, 2007). Motor behaviour and anticipatory strategies are researched by examining the visual behaviour of players. From this point of view, the analysis of the goalkeeper's performance has received a great deal of attention by researchers in different collective sports. For example, the studies undertaken by Cañal-Bruland, Van der Kamp, Arkesteijn, Van Kesteren and Savelsbergh (2010) in hockey; Panchuk and Vickers (2006) in ice hockey; Antúnez, García, Argudo, Ruiz and Arias (2010) in handball and Navia, Ruiz, Graupera, Van der Kamp and Avilés (2013) in indoor football. When it comes to football, this analysis has focused on the study of motor behaviour, visual behaviour and penalty kicks (Dicks, Button and Davids, 2010; Savelsbergh, Van

der Kamp, Williams and Ward, 2005; Savelsbergh, Williams, Van der Kamp and Ward, 2002; Savelsbergh, Van Gastel and Van Kampen, 2010; Williams and Burwitz, 1993). For instance, Savelsbergh et al. (2002) studied anticipation and visual behaviour in football goalkeepers who had to predict the destination of a penalty kick by means of the movements of a joystick. Expert goalkeepers began their movements later than the rest. In a subsequent experiment (Savelsbergh et al., 2005), goalkeepers were ranked according to their ability at predicting the destination of penalty kicks. Again, results showed that the most successful goalkeepers began their movements later, and acted close to the contact with the ball. Results in the analysis of visual behaviour for both investigations (Savelsbergh et al., 2002 y 2005) were more contradictory. The results of the first study show that the ball is the most relevant informative area, although there are no differences between the penalty kicks that goalkeepers were able to predict and those they were not (Savelsbergh et al., 2002). Whereas in the second study, we observed that the leg that does not hit the ball in the penalty kick is the location with the greater fixation time (Savelsbergh et al., 2005).

However, there are no studies focused on investigating the motor and visual behaviour of football goalkeepers during corner kicks. And that is despite the fact that corner kicks are one of the most repeated actions during football games (Borrás and Sainz, 2005; Sainz and López-Riquelme, 2012). For instance, in the last FIFA World Cup (South Africa 2010) a total of 627 corner kicks were taken, with an average of 9.79 corner kicks by match.

The first objective of this study was to analyse the task, that is, we have described the movement of goalkeepers when they try to intercept a corner kick, using the work of Newell (1986) as starting point. More specifically, the motor behaviour of football goalkeepers has been studied using a new methodology, which consists in the undertaking of two different types of analysis: the “analysis from the moment of the kick” and the “analysis from the moment of the interception”. In the first, the temporal occurrence of different moments is studied, analysed from the moment in which the ball is hit. This type of analysis provides information on the participation of goalkeepers. The second has been used to describe the coordinative pattern of goalkeepers. This analysis provides temporal information regarding the interception, as it collects the times in which the different actions needed to successfully catch the ball are performed (for more info, see the section on dependent variables). These variables have also been compared according to the success or failure of the interception.

The second objective of this study was to describe the visual behaviour of goalkeepers when they try to intercept a ball coming from a corner kick. A calculation was also made of the percentage of failures, the types of failures and the distribution of interceptions in the pitch, with the aim of obtaining a more comprehensive information regarding the performance of goalkeepers during corner kicks.

METHOD

Participants

An intentional sample was used, composed of 22 goalkeepers (average age=17.55 years, DT= 0.8 years; average experience=8.91 years, DT=3.73 years) who played in one of the three categories in Spanish youth football (Honour division, national youth and provincial youth). The participants signed an informed agreement before their participation, and in the case of minor goalkeepers, it was their parents or tutors who signed the informed agreement. Both the participant goalkeepers and their coaches were informed of the nature of the study and took part voluntarily.

Instruments

The motor behaviour of goalkeepers was registered by means of a video camera (Sony Handycam DCR-HC42E PAL) placed in the corner of the area opposite the corner kick location (Figure 1). The camera was placed on the other side once the first 10 corner kicks had been taken.

Visual behaviour was recorded with a gaze registry system (ASL Mobile Eye). This system is composed of two cameras mounted in a glasses-shaped rack. One of the cameras records the mirror on which the pupil is reflected, with the aim of registering eye movements. The second camera is in charge of recording the scene. The computer system combines both signals in one video which shows the scene with a cursor indicating the point the goalkeeper is looking at. The cursor indicates where participants are looking at. Before the beginning of the test a calibration was done for each goalkeeper. Also, the calibration for five kicks was checked; to do that, participant goalkeepers were asked to look at five points located in a panel behind the goal.

Procedure

The procedure to access the sample was as follows: first, the responsible (coach or president) of each of the teams participants belonged to was approached. Then, the main researcher travelled to the training pitch of each participant to perform the data collection. Goalkeepers were instructed to intercept balls coming from corner kicks, both from the right and the left sides (10 corner kicks from each side). The order of the kicks was randomly chosen for each participant. Each of the attempts began with the goalkeeper located in the goal line (Figure 1). Two right-footed players performed the kicks, rotating after every two kicks. Corner takers had the same competitive level as the participant goalkeepers. They were instructed to act as they would in a real match.

Participants were equipped with the gaze registry system. They were instructed to act as in a real match, but taking into account security limitations, related to the fragility of the instrument. During the task, the goalkeeper was alone on the

penalty area, without any adversaries or team mates. Each participant undertook 20 kicks (10 for each side) in a single session.

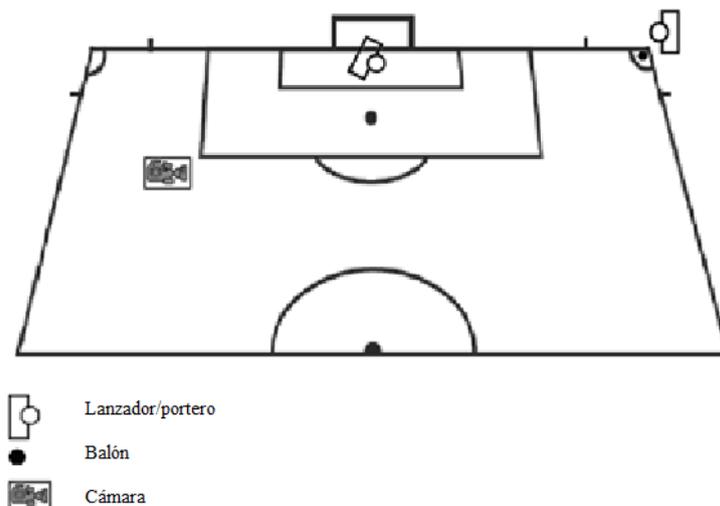


Figure 1. Experiment design view from the left side.

Design

It is a descriptive, exploratory, prospective and transversal study.

Independent variable

The study's independent variable was:

- Corner kick side: corner kicks taken from the right side and corner kicks taken from the left side.

Dependent variables

The resulting videos (Figure 1) were watched after data collection and analysed frame by frame. From the analysis three different types of data were obtained (performance data, motor behaviour data and eye movement analysis data).

Performance data

The performance of goalkeepers was analysed using the following variables:

- Error percentage: the percentage of corner kicks in which the goalkeeper did not manage to intercept the ball.
- Error type percentage: the percentage of errors in which the goalkeeper touched the ball and the percentage of errors in which the goalkeeper did not touch the ball.

- Interception distribution: the places in the pitch in which the goalkeeper caught the ball.

Temporal aspects of movement

The motor behaviour of goalkeepers was analysed in two ways: from the moment the corner taker kicked the ball and from the moment the goalkeeper blocked the ball. All variables were calculated in seconds. The analysed variables from the moment of the kick were:

- Run time: the interval of time between the moment the corner taker hits the ball and the moment in which the goalkeeper begins to move.
- Jump time: the interval of time between the moment the corner taker hits the ball and the moment in which the goalkeeper begins to jump.
- Hand movement time: the interval of time between the moment the corner taker hits the ball and the moment in which the goalkeeper begins to move his hands towards the ball.
- Block time: the interval of time between the moment the corner taker hits the ball and the moment in which the goalkeeper blocks the ball. When goalkeepers are not able to intercept the ball, block time is obtained from the moment goalkeepers touch the ball or the moment the ball passes close to their hands.

The analysed variables from the moment of the block were:

- Hand movement time: the time interval between the beginning of the hand movement by the goalkeeper and the interception of the ball.
- Jump time: the time interval between the beginning of the jump by the goalkeeper and the interception of the ball.
- Run time: the time interval between the beginning of the run by the goalkeeper and the interception of the ball.
- High ball time: the interval of time between the moment the corner taker hits the ball and the moment in which the goalkeeper blocks the ball.

Eye movements

Due to problems with the calibration of the instrument (Mobile Eye), eye movements were obtained for a sample of 10 goalkeepers (from a total of 22 participants). The gaze registry system was used to analyse the percentage of time goalkeepers spent looking while they tried to intercept balls from corner kicks. Two temporal periods were chosen to be analysed. They were:

- Pre-contact period: the time interval of one second between the run by the corner kick taker and the moment the ball is hit (the location of the run by the player was registered in this period).
- High ball period: the time interval between the moment the corner taker hits the ball and the movement in which the goalkeeper begins to run in order to intercept the ball (the location of the ball was registered in this period).

For both variables the percentage of time spent looking at the locations was calculated in relation to the period's total time percentage.

Statistical analysis

The two resulting videos (analysis of motor behaviour and analysis of eye movements) were analysed frame by frame. The data obtained by the analysis of both videos were converted to an Excel document and afterwards to SPSS 19.0 for their analysis. Descriptive analysis of the pertinent variables were performed, and parametrical statistics was applied after verifying its normal distribution with the Kolmogorov-Smirnov normality test. Student's T tests were done for independent samples with the goal of obtaining significant differences for $p \leq 0.05$, and before them a Levene variance homogeneity test was done. In the analysis of motor behaviour Student's T tests were done for independent samples, with the aim of comparing motor behaviour in successful and non-successful interceptions. In the analysis of eye movement Student's T tests were done for independent samples for each dependent variable separately, with the aim of comparing the percentage of time spent looking by attempt (hits vs. misses). Also, Student's T tests were done for independent samples in order to compare the locations (run by corner taker vs. ball) both in hits and misses in blocking.

RESULTS

From a total of 440 corner kicks, 414 were analysed in the end.

Performance data

The range of error percentage in the interception is between 0 and 38.89%, with an average of 12.13%. 57.14% of all errors originate in corner kicks from the left side, and 42.86% from the right side. Regarding the types of errors, 64.4% correspond to errors in which goalkeepers touched the ball but were not able to catch it, while the remaining 35.6 % corresponds to errors in which goalkeepers did not touch the ball when trying to catch it. Figure 2 shows the distribution of the interceptions.

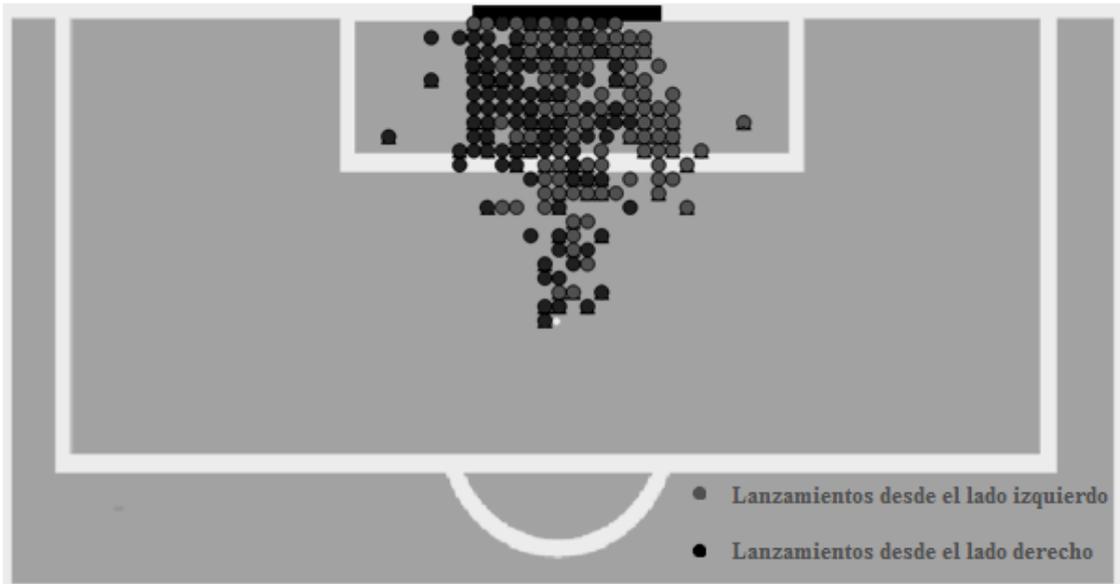


Figure 2. Places in which goalkeepers caught the ball.

Temporal aspects of movement

Table 1 shows the average results of motor behaviour analysed at the moment the ball is hit. Table 2 shows those results divided into successful interceptions (in which the goalkeeper caught the ball) and non-successful interceptions (in which the goalkeeper did not catch the ball).

Table 1. Average values and deviations in motor behaviour (in seconds) in corner kicks analysed from the moment the ball is hit.

	Right	Left	Total
Run	0.53 ± 0.15	0.56 ± 0.21	0.54 ± 0.17
Jump	1.55 ± 0.19	1.65 ± 0.20	1.62 ± 0.14
Hand movement	1.53 ± 0.16	1.64 ± 0.20	1.59 ± 0.14
Blocking	1.85 ± 0.16	1.97 ± 0.20	1.91 ± 0.14

Table 2. Average values and deviations in motor behaviour (in seconds) in corner kicks analysed from the moment the ball is hit divided into hits and misses. Asterisks (*) indicate significant differences for $p \leq 0.05$.

	Hits			Misses		
	Right	Left	Total	Right	Left	Total
Run*	0.54 ± 0.19	0.54 ± 0.24	0.53 ± 0.22	0.43 ± 0.14	0.63 ± 0.23	0.53 ± 0.23
Jump	1.60 ± 0.28	1.62 ± 0.35	1.62 ± 0.28	1.49 ± 0.21	1.67 ± 0.21	1.59 ± 0.23
Hand movement	1.54 ± 0.27	1.64 ± 0.30	1.58 ± 0.43	1.45 ± 0.23	1.66 ± 0.28	1.41 ± 0.60
Blocking*	1.87 ± 1.96	1.96 ± 0.29	1.91 ± 0.30	1.73 ± 0.21	1.95 ± 0.23	1.85 ± 0.24

The results of the Student's T tests reflected significant differences between hits and misses in blocking in the run time and in the blocking time for the right side. In blocking hits, goalkeepers waited more to begin their run compared to misses in blocking ($t(205)=2.36$, $p=.019$). Also, in hits, goalkeepers caught the ball significantly later than in misses ($t(204)=2.15$, $p=.033$).

The average results for motor behaviour analysed from the moment of the blocking are shown in Table 3. Also, in Table 4 results are divided into hits (in which goalkeepers blocked the ball).

Table 3. Average values and deviations in motor behaviour (in seconds) in corner kicks analysed from the moment of the interception.

	Right	Left	Total
Hand movement	0.32 ± 0.06	0.33 ± 0.09	0.32 ± 0.07
Jump	0.30 ± 0.06	0.32 ± 0.06	0.31 ± 0.06
Run	1.30 ± 0.22	1.41 ± 0.27	1.37 ± 0.18
High ball	1.85 ± 0.16	1.97 ± 0.20	1.91 ± 0.14

Table 4. Average values and deviations in motor behaviour (in seconds) in corner kicks analysed from the moment of the interception divided into hits and misses. Asterisks (*) indicate significant differences for $p \leq 0.05$.

	Hits			Misses		
	Right	Left	Total	Right	Left	Total
Hand movement*	0.32 ± 0.11	0.33 ± 0.15	0.32 ± 0.13	0.27 ± 0.08	0.28 ± 0.08	0.28 ± 0.08
Jump*	0.30 ± 0.10	0.32 ± 0.10	0.31 ± 0.09	0.24 ± 0.09	0.30 ± 0.08	0.28 ± 0.09
Run	1.31 ± 0.33	1.43 ± 0.36	1.37 ± 0.35	1.29 ± 0.21	1.34 ± 0.27	1.32 ± 0.24
High ball*	1.87 ± 0.26	1.96 ± 0.28	1.91 ± 0.27	1.68 ± 0.19	1.95 ± 0.25	1.84 ± 0.26

The Student's T tests done for each variable separately revealed significant differences between hits and misses in interceptions in the high ball time from the right side and in the hand movement time and the moment of the jump in the total analysis. In hits from the right side, high ball time was higher when compared to misses in the right side ($t(205)=2.71$, $p=.007$). Also, in blocking hits, goalkeepers began to jump ($t(273)=2.01$, $p=.046$) and move their hands towards the ball ($t(395)=2.06$, $p=.04$) significantly before in relation to interceptions than in misses. These results show that goalkeepers had more time to perform their actions, such as jumping and intercepting, when they managed to catch the ball.

Eye movements

Results in the analysis of the percentage of time spent looking show that goalkeepers spent more time locating the ball (in the high ball period: 32.02 ± 10.99 % of time looking) than locating the corner taker run (in the pre-contact period: 20.49 ± 9.39 % of time looking).

The percentage of time looking has been divided into successful interceptions (in which the goalkeeper caught the ball) and non-successful interceptions (in which the goalkeeper did not catch the ball). Average scores in visual behaviour have been analysed comparing both groups. The results are shown in Figure 3.

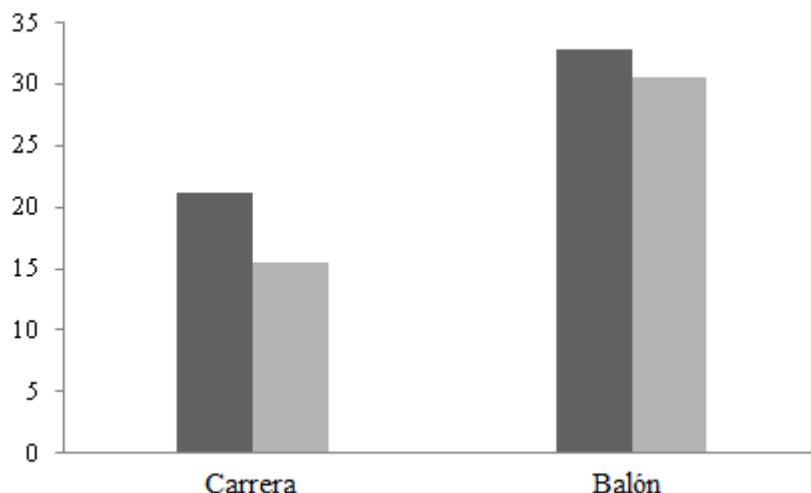


Figure 3. Average differences in eye movements (in percentage of time spent looking) in the two temporal periods analysed: pre-contact period and high ball period.

In intercepting hits, goalkeepers showed a greater percentage of time in the two locations analysed (21.09% of the time looking at the location of the corner taker's run and 32.88% of the time looking at the location of the ball), than in intercepting misses (with 15.56% of the total time looking at the location of the corner taker's previous run and 15.56% of the total time looking at the location of the ball). Furthermore, the location of the high ball has obtained a greater percentage of time than the time locating the run of the corner taker in both analysis groups (hits and misses). Therefore, goalkeepers employed significantly more time looking at the location of the ball in hits ($t(259)=-5.22$, $p=.000$) and in misses ($t(24.75)=-2.619$, $p=.015$). However, Student's T test did not reveal significant differences when comparing hits and misses in intercepting between the two analysed locations. Therefore, we may conclude that there are no differences in the visual behaviour between hits and misses in intercepting, but there are differences between locations (high ball > corner taker run).

DISCUSSION

The first objective of this study was to describe the motor behaviour of goalkeepers when they had to intercept a ball coming from a corner kick. In order to achieve a complete description of the task, namely the interception of a corner kick, three different types of data were obtained. In the first place, performance data, corresponding to the percentage of errors, the types of errors and the location of the interceptions. Secondly, data about the temporal aspects of movement, which were obtained from two different types of analysis: the first from the moment the ball is hit, aimed at obtaining the coordinative pattern of goalkeepers during the task, and the second analysis from the moment the ball is blocked, aimed at obtaining the anticipatory behaviour of goalkeepers during the task. Finally, data for visual behaviour were obtained with the goal of studying the visual behaviour of goalkeepers during the task. Additionally, an independent variable was introduced, that is, corner kicks were divided into hits and misses in the interception, from which comparisons were done in the dependent variables.

The results obtained from the performance data show that the average percentage of misses is 12.13%, with a minimum of 0% and a maximum result of misses of 38.89%. Figure 1 shows a homogeneous distribution of interceptions. All interceptions were located in a zone delimited between the box and the penalty spot, and most of them were registered in a rectangle formed by the two goal posts and the penalty spot. In 64.4% of misses, goalkeepers did not touch the ball; in those cases, mistakes are due to a poor coordinative pattern and therefore a poor motor execution on the part of goalkeepers. Thus, the goalkeepers who were able to use an adequate anticipation to try and catch the ball, were on the contrary unable to catch the ball at the right moment. The remaining misses (35.6%) in which goalkeepers were not able to catch the ball are due to an inadequate decision, that is, a poor anticipation. In these cases, goalkeepers were not able to adapt their motor behaviour with the objective of catching the ball at the right time.

The anticipation of goalkeepers, studied through the analysis from the moment the ball is hit shows that misses (from the right side) are due to an excessive anticipation and therefore an earlier blocking action. The results agree with the results registered by Savelsbergh et al. (2002) in their destination prediction study in penalty kicks. Expert goalkeepers waited more time to act than less experienced goalkeepers. However, misses in blocking from the left side in the present study cannot be explained with this type of analysis.

The coordinative pattern of goalkeepers was studied from the analysis beginning with the moment of the interception. In the total analysis (without any distinction of corner kicks by right side or left side), goalkeepers began to move their hands closer to the interception (and therefore later) in misses than in hits. The results agree with the results obtained by Savelsbergh et al. (2005), in which the most successful goalkeepers, when predicting destinations for penalty kicks, began to move closer to the contact with the ball by the shooters.

The results of the analysis of eye movements show that during hits in the interception, football goalkeepers look for longer at the studied locations than during misses, but the differences are not significant. Other studies had already shown the possibility that results in the visual behaviour were not significantly different; for instance, Savelsbergh et al. (2002) did not find significant differences in the visual behaviour of football goalkeepers of different levels when trying to predict the destination of penalty kicks. However, Martell and Vickers (2004) did find differences when analysing the visual search strategies of hockey players. Elite players were able to change their visual strategies in order to adapt to different environments. In the present study, when comparing fixed locations (corner taker's previous run and high ball), results show that goalkeepers employed more time looking at the flight of the ball than at the corner taker's previous run, regardless of their subsequent performance (whether they did or did not catch the ball). The idea that the ball is one of the zones that obtains a greater attention from players during sport actions comes up quite frequently on the research. Therefore, these results agree with previous studies such as those of Moreno, Reina, Sanz and Ávila (2002), Reina, Moreno and Sanz (2007), Sáez-Gallego, Vila-Maldonado, Abellán and

Contreras, (2013), Savelsbergh et al. (2002), Vila-Maldonado, Sáez-Gallego, Abellán and Contreras (2012).

To conclude, this study describes the performance, motor behaviour and visual behaviour of football goalkeepers when trying to intercept a ball coming from a corner kick. The distribution of interceptions in this study was homogeneous, within a specific zone delimited by the two goal posts and the penalty spot, and the percentage of errors may be considered low (12.13%). Errors in the present study (with a reduced sample) are due to an excessive anticipation, with a too quick start of the run, combined with a poor coordinative pattern of hand movements and the beginning of the jump action.

The present study should be considered a first step in the analysis of motor behaviour, visual behaviour and performance of football goalkeepers when trying to intercept balls coming from corner kicks. The limitations of this study are related mainly to three aspects: firstly, the limited number of participants makes it impossible to generalise the findings; secondly, the systematic reduction of the data coming from the gaze registry system (from 22 initial participants to 10 analysed participants) makes it hard to draw conclusions from this variable; and lastly, although data collection was done with the goal of obtaining a task very close to that of an actual sport, the fragility of the gaze registry system conditions that premise, since in a real match goalkeepers must try to intercept the ball from a corner kick in an environment in which their adversaries (trying to score) and their team mates (trying to defend) are also present. Future possible research directions are very much related to the limitations of the present study. For starters, it would be convenient to obtain a greater number of participants, which would allow us to generalise the results obtained; secondly, to extend the number of valid data for the analysis of eye movements; and lastly, we suggest the possibility of analysing the variables that integrate the present study in an environment closer to a real match situation, adding attacking and defending players to the analysis.

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