



## Original research

# How to select and train professional male soccer goalkeepers: Expert opinion by semi-structured interview

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## ABSTRACT

**Objectives:** The main aim of the present study is to provide insight into the recruitment tactics, and training methods and strategies that professional coaches apply in their day-to-day work to best prepare their athletes for the highest levels of competition.

**Design:** Expert opinion from semi-structured interview, qualitative.

**Methods:** The opinion of 15 professional goalkeeper coaches was gathered using a semi-structured interview. Following transcription, a thematic content analysis was conducted to identify and analyse patterns within the data.

**Results:** Several key considerations emerge that any coach should take into account. 1) When integrating a new goalkeeper into a club, it is essential to assess whether their profile aligns with the club's style of play and philosophy, 2) training should focus both on the goalkeeper's individual development and on preparing them for the challenges posed by upcoming opponents, and 3) coaches must recognise that they are working with individuals rather than a homogeneous group, making it essential to understand and respond to the unique needs of each goalkeeper.

**Conclusions:** The findings suggested that selecting and training professional goalkeepers is a multifactorial process that requires considering technical, tactical, psychological, physical, playing style and organisational factors.

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## Practical implications

The findings of this study provide several practical applications for GK coaches aiming to optimise performance in high-level soccer. Recruitment should prioritise GKs whose profiles align with the team's tactical identity, ensuring consistency with the playing model across all phases of the game. Training sessions should be designed to reflect both the team's style of play and the specific challenges posed by upcoming opponents, incorporating progressive difficulty and adaptability. A combined approach of gym-based and field-specific strength training is recommended to enhance key physical qualities such as speed, power, and jumping ability, whilst also reducing injury risk. Coaches are also encouraged to implement structured core training programmes, given their potential to improve balance and stability, both critical to GK performance. This study also highlights the importance of engaging and developing substitute GKs through task-oriented and self-improvement motivational climates, helping maintain their readiness and psychological well-being despite limited playing

time. Finally, whilst long-term periodisation remains a theoretical ideal, coaches working under high-pressure competitive environments may benefit from reactive periodisation strategies that adjust training loads in real time to meet fluctuating competition and athlete readiness requirements.

## 1. Introduction

The goalkeepers (GKs) and outfield soccer players' demands are different.<sup>1,2</sup> Thus, in recent years training has been defined from different perspectives in order to maximise this process. For instance, Whitmore<sup>3</sup> emphasises maximising performance through learning. However, Rosinski<sup>4</sup> describes coaching as a means to develop an athlete's potential to achieve meaningful goals. In addition, Grant<sup>5</sup> defines coaching as a systematic problem-focused and result-oriented process in which the coach facilitates self-learning, performance enhancement, and personal development.

In recent years, different training strategies for soccer GKs have been explored. Perez-Arroniz et al.<sup>1</sup> concluded that coaches should prioritise, on the one hand, improving high-intensity physical abilities such as jumping, sprinting and agility, and on the other hand, placing strong

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emphasis on technical development improving performance and reducing injury risk. Babic et al.<sup>6</sup> analysed the benefits of Small Sided Games (SSG), concluding that they can greatly support GK training. These tasks allow coaches to impose a higher internal load on GKs compared to individualised exercises, whilst also providing the advantage of strong task specificity. Additionally, Murgia et al.<sup>7</sup> investigated perceptual training for GKs in penalty situations. In their study, GKs participated in 20-minute sessions in which they viewed penalty scenarios on a screen. The footage displayed the entire shooting process except for the final shot, requiring participants to predict the type of strike the shooter would attempt, after which they received immediate feedback. The group that participated in the study showed significant improvements after completing the protocol.

Traditionally, research on GKs has leaned heavily on quantitative approaches.<sup>8–10</sup> However, given the specialised nature of the GK's role, expert opinion can provide highly valuable insights, as has been the case in other sports. In handball, Menezes et al.<sup>11</sup> explored optimal methods for training U-18 and U-16 female players from a game-centred perspective, interviewing six expert coaches. Similarly, in basketball, Nunes et al.<sup>12</sup> engaged six professional coaches in discussions on both offensive and defensive aspects of the pick-and-roll, a two-player offensive manoeuvre.<sup>13</sup> Qualitative methodologies have also been used to generate knowledge in soccer. For example, O'Connor et al.<sup>14</sup> conducted interviews with experienced youth-category coaches to explore talent identification and development in Australian youth soccer, and Mills et al.<sup>15</sup> identified coaches' perceptions of the factors that influence the optimal development of young soccer players.

To the best of the authors' knowledge, only one prior study has conducted interviews with professional GK coaches,<sup>16</sup> providing valuable insights into training session design and key GK attributes. However, no study has yet allowed coaches to freely discuss the entire GK training process. This study focuses exclusively on the training of male professional GKs given that after reviewing the literature we understand that there may be certain differences when training male and female GKs, not only because of physiological and hormonal differences, but also to optimise performance and reduce the risk of injury.<sup>17–19</sup> Therefore, the aim of the present study is to provide insight into the training methods and strategies that professional coaches apply in their day-to-day work to best prepare their athletes for the highest levels of competition.

## 2. Method

### 2.1. Participants

Professional soccer GK coaches (N = 15) were interviewed according to the following inclusion criteria: (1) coaching experience with GKs at top-tier (first and second division) clubs in Spain, England, France, Italy or Germany, or at the national team level; (2) a minimum of two seasons of experience in clubs that meet the first criterion; and (3) active involvement in professional coaching at the time of the interview or within the previous season (Table 1).

### 2.2. Instrument

Semi-structured interviews were conducted to explore coaches' opinions in depth. This method enabled participants to express diverse perspectives whilst ensuring a systematic data collection process.<sup>21</sup> The initial interview guide was developed by the authors (M.P.-A. and A.Z.-Z.) and subsequently tested through three pilot interviews with academy GK coaches (excluded from the main study). Feedback from these pilots helped refine the interview guide.

### 2.3. Procedure

Coaches were contacted through their clubs or via direct email when available. The initial email included detailed information about the

study's objectives, methodology, potential benefits and risks, and ethical approval details. Out of 18 coaches contacted, 15 agreed to participate. Given the elite status and limited accessibility of this population, a sample of six to 12 participants is considered sufficient,<sup>22</sup> and in line with Malterud et al.<sup>23</sup> concept of information power, the sample of 15 elite goalkeeper coaches was considered sufficient. Participants chose between two interview formats: in-person (N = 8) at a location of their choice, or via video call (N = 7) at a convenient time. All interviews were conducted and recorded between June 2023 and January 2024, following approval by the Ethics Committee of the University of the Basque Country (M10/2023/008).

### 2.4. Data analysis and reliability

Interviews were transcribed verbatim and thematic content analysis was conducted to identify and analyse patterns, following the approach proposed by Braun and Clarke.<sup>24</sup> The analysis included several steps: first, familiarisation with the data; then, initial codes were generated to categorise the information; next, an active search for emerging themes was carried out; subsequently, the identified themes were reviewed and refined; then, definition and naming of themes; and finally, report generation.

Qualitative data analysis was performed using the Nvivo 14 software (QSR International, Melbourne, Australia). In order to ensure the validity of the data, two of the authors (M.P.-A. and A.Z.-Z.) independently coded the themes and collaboratively organised them following Auerbach and Silverstein<sup>25</sup> guidelines. High inter-coder agreement was achieved, with only minor adjustments needed. To enhance the rigour of the process, an independent researcher with qualitative expertise reviewed the data collection and analysis procedures as recommended by Sparkes and Smith.<sup>26</sup> This additional review ensured the quality and reliability of the thematic content analysis conducted in the study.

## 3. Results

Given the large volume of information obtained, and in order to facilitate readability, this section has been organised into the following categories: evolution of the GK's role, recruitment, specific training,

**Table 1**  
Accumulated experience and trophies won by participants across different competitions.

Competition	Seasons/participations	Matches	Trophies won
World Cup	8	33	1
Eurocup	7	34	2
Olympic Games	2	9	
UEFA Nations League	7	40	2
Conference Cup	2	10	
World Cup classification	7	62	
Eurocupa Clasification	9	82	
Eurocup U21	6	28	3
Uefa Champions League	35	291	6
Uefa Europa League	18	170	3
Uefa Conference League	2	16	
European Super Cup	6	6	4
FIFA Club World Cup	5	10	4
La Liga	68	2569	2
Premier League	36	1180	5
Ligue One	2	76	1
Spanish Second League	23	951	2
England Championship	6	276	1
Spanish King Cup	83	373	4
FA cup	39	116	3
EFL Cup	40	121	5
Coupe de France	2	12	2
Coupe de la Ligue française de football	2	8	2
Spanish Super Cup	8	13	2
Comunity Shield	7	7	3
Trophée des Champions	2	2	2

conditioning training, psychological training, session design, periodisation and individualisation.

### 3.1. The evolution of the GK role

The most repeated idea when talking about the evolution of the GK role in recent years was the integration of GKs within the team’s tactical structure, mentioned by nine coaches. They emphasised that GKs are now more tactically involved and receive clearer instructions in group drills. This shift has altered training approaches, with a trend towards open drills where GKs must make decisions and increased focus on offensive play. Two coaches noted that this emphasis on the offensive phase may come at the cost of reduced defensive capabilities. Additionally, greater use of match statistics and a heightened focus on physical preparation were also cited as markers of this evolution.

*“The GK has gained greater relevance—not only in their role but in how they’ve been integrated into the overall game. That required time and effort.”*

[Coach 12]

Another key development, supported by four participants, is the increased competence and responsibility of GK coaches. This evolution is attributed to improved learning programmes by GK coaching specialists, which have greatly improved the quality compared to previous times, enabling GK coaches to take on additional responsibilities such as set-piece analysis or performance analysis.

Three coaches also highlighted improved tactical understanding among GKs. Including GKs in team drills has helped them better grasp team needs and adapt their tactical responses accordingly.

*“They understand the game better and better. I think the GK must understand the game just as an outfield player does, from another perspective but still be aware of what’s happening and what it means.”*

[Coach 9]

However, not all changes were seen positively. Two coaches viewed the shift towards individualised physical preparation as beneficial, moving from generic approaches to qualitative motor development tailored to specific movements. Conversely, one coach argued that

this physical focus sometimes detracts from technical–tactical training, as sessions are increasingly shaped by physical rather than game-related needs.

### 3.2. GK recruitment

When discussing what matters most when bringing in a new GK, 11 coaches emphasised the importance of alignment with the team’s playing style. The GK must fit the tactical demands and characteristics of the club, coach, and system. Clubs with a strong identity often seek GKs with very specific traits, whereas clubs whose identity changes with each coach look for more versatile profiles.

Regarding the key skills considered by coaches when recruiting, the most cited (five participants) was mentality or personality (Fig. 1). A strong character is considered essential due to the stress and pressure GKs face. Four coaches highlighted the GK’s relationship with teammates on the pitch as a top priority. Two others emphasised foot skills, whilst another two echoed the sentiment: “Saving is crucial, but not enough on its own”. Five coaches also expressed a preference for having similar profiles among their GKs to ensure consistency with the team’s playing model, though this does not mean the GKs must all be identical.

*“I give greater importance to attributes I can’t develop through daily training, because with dedication and structured work, we can improve many things.”*

[Coach 14]

Another frequently discussed topic in recruitment was age, and opinions are polarised around younger and older GKs. Four coaches preferred bringing in younger GKs as future prospects, not necessarily to play immediately, but to contribute to training and develop over time. In contrast, three coaches valued experienced veterans nearing retirement for backup roles, appreciating their proven reliability and locker room leadership. The recruitment process for external GKs generally follows three steps: First, identifying potential candidates through statistical analysis (noted by three coaches); next, analysing video or observing matches live to assess performance in different scenarios—home vs. away games, stronger vs. weaker opponents, and different competitions; and finally, live scouting is used to evaluate the GK’s behaviour across all phases of play.

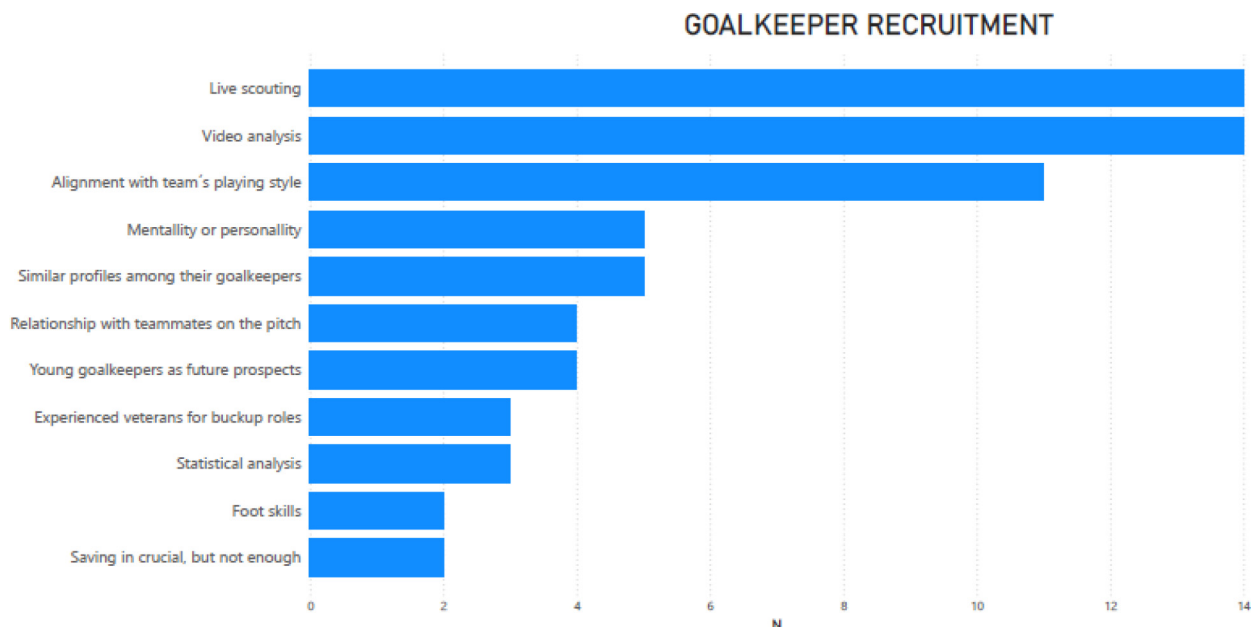


Fig. 1. Visual summary of the number of responses received on goalkeeper recruitment.

### 3.3. Specific training

When designing position-specific drills, six coaches reported devoting more time to open scenarios in which the GK must analyse the situation and react accordingly; one coach estimated that 90 % of his tasks followed this model. These drills often simulate situations aligned with the team’s playing style or anticipated scenarios based on opponents. Coaches aim to give these exercises a tactical dimension to enhance the GK’s understanding of their role within the broader game. On the other hand, 3 coaches emphasised the value of analytical exercises with low uncertainty. These exercises are useful at the beginning of training sessions to ensure proper physical activation and are essential for improving specific technical skills that a GK may struggle with.

*“We give more importance to the situational part, because in the end, the GK must adapt to our game model and has to compete against an opponent. Another reason is that if you compete in international competitions, training time is limited and you have to prioritise drills that deliver the most improvement.”*

[Coach 15]

*“We try to recreate what happens on the pitch, both what we see in each game and what the data from each game show us. To generate realistic scenarios, we need a high number of participants and for this we are fortunate to have a large coaching staff involved in GK training, along with the support of players in post-injury recovery.”*

[Coach 10]

Another perspective in training design focuses on improving the GK either individually, based on their own strengths and weaknesses, or collectively, in terms of what the coach demands from them within the team’s tactical framework. This includes enhancing their understanding and integration into the team’s playing model, or preparing them for the scenarios likely to be posed by the opponent. Eleven coaches acknowledged that they design drills based on the opponent’s style of play. After analysing how rivals attack and defend, they replicate past situations or anticipate a likely scenario in future matches. Each coach integrates this into the weekly microcycle in their own way. Some begin the week working on the team’s own model and individual improvement and then gradually shift towards drills related to the opponent’s game, whilst others follow the opposite order. Regarding individual improvement for each GK, nine coaches provided details on their approach, and they all follow a similar process. They start by simplifying the action, and as the GK masters the basic version, they gradually increase difficulty until reaching game-level demands.

*“If you focus too much on your own model or the opponent, you may neglect the GK’s personal development, and that’s important too. I try to use the time we have for specific GK training to work on personal improvement. That could mean technical gestures, understanding of game situations, speed... And when they’re training with the team, the focus shifts to our own model or the opponent’s playing style.”*

[Coach 13]

An especially interesting point raised by three coaches was the importance of considering the GK’s preferences when designing training sessions (Fig. 2). These coaches recognised that each GK has his own preferences and routines when it comes to training, and they see no issue with adapting to them. As Coach 8 explained, the GK is the one who will step onto the pitch to compete, so everything should be done to help them feel confident and comfortable. Some of these preferences include increasing the number of closed drills before a match, focusing more on areas where the GK feels less secure, or maintaining long-standing training habits that the GK has developed over their career.

As discussed earlier, GKs are becoming increasingly involved in team play. As such, five coaches stressed the importance of including goalkeepers in all group drills with tactical components. This helps deepen their integration into the team’s tactical dynamics.

To conclude this section, all coaches were asked about the time they dedicate each week to GK training. On average, participants reported 159 min per week, distributed across four to five sessions. The coach with the highest volume of specific training scheduled 240 min weekly, whilst the lowest fell between 90 and 100 min (Fig. 3).

### 3.4. Conditioning training

When it comes to conditioning training, the most frequent response among participants (mentioned by eight coaches) was that the club’s physical conditioning department is responsible for managing and designing the GK’s physical workload. However, all coaches emphasised the importance of strong coordination between the physical conditioning and GK coaching departments to ensure their efforts are aligned.

*“We try to ensure that those scenarios are connected with what we’ll be doing on the pitch. That’s why we have those meetings with the fitness staff. Based on their work, we can plan field drills to target vertical, diagonal, horizontal, or rotational strength.”*

[Coach 14]

Regarding gym work, all coaches explained that GKs engage in individualised pre-activation routines before each on-field session. These routines include core training and injury prevention exercises.

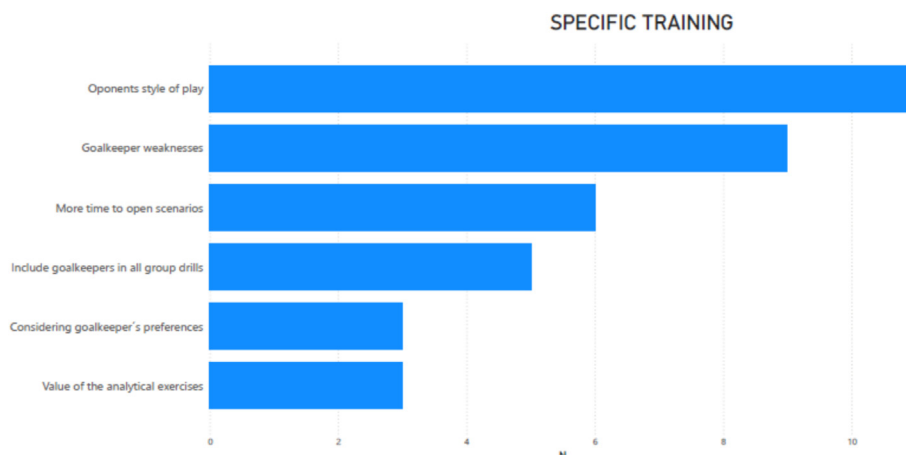


Fig. 2. Visual summary of the number of responses received on specific training.

## PSYCHOLOGICAL TRAINING

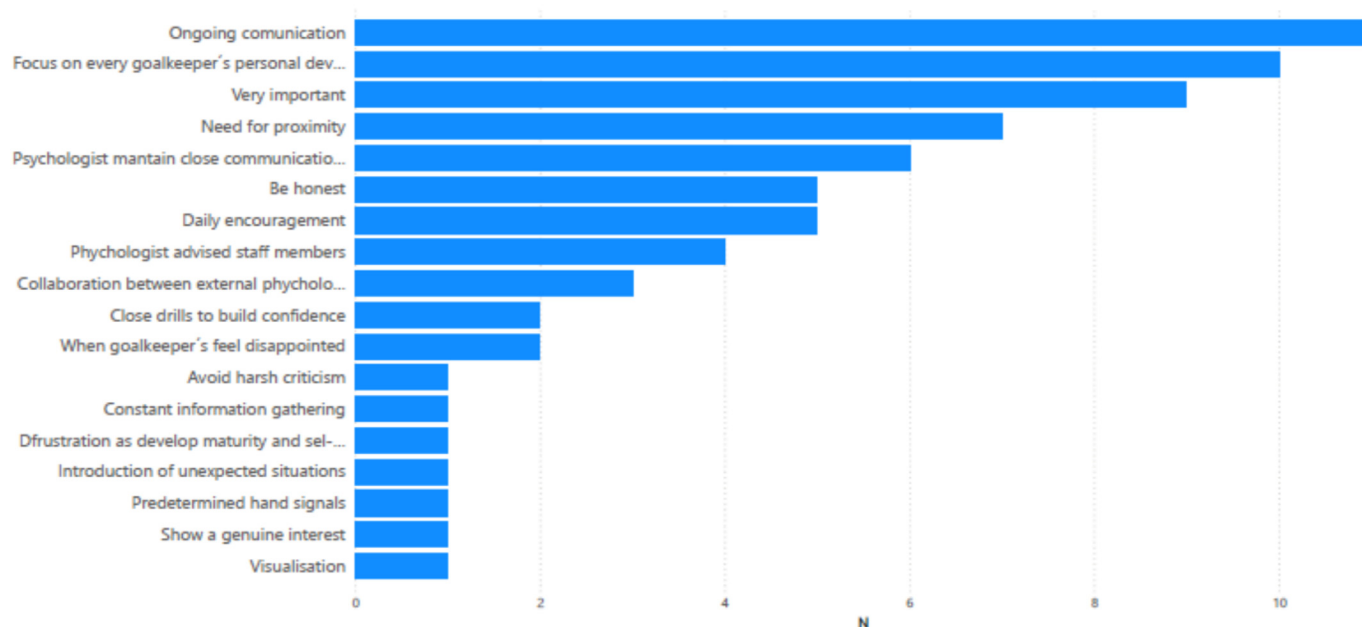


Fig. 3. Visual summary of the number of responses received on psychological training.

In addition to these warm-ups, eight coaches said their GKs also complete between two and four gym sessions per week, focusing on developing strength or speed in both the upper body and lower body. Four coaches highlighted that improved gym equipment has allowed GKs to train using more position-specific movements.

Eleven coaches reported that their GKs also perform strength training on the pitch. Five of them specifically aim to transfer gains from the gym to sport-specific movements, using these sessions as a bridge between strength development and match demands. The primary goals of on-field strength sessions include improving movement efficiency and explosive propulsion, with some coaches using these drills as part of the warm-up.

*“Conditioning work is done in the gym with the fitness coaches and the GK coach. Then we aim to transfer that to the game by working on technical actions from a physical standpoint during field sessions.”*

[Coach 12]

Regarding training volume and intensity across the weekly cycle, four coaches clarified that intensity remains high throughout the week, whilst training volume decreases as match day approaches. Additionally, two coaches noted that if the starting GK shows minimal fatigue the day after a match, they may include an extra strength session.

### 3.5. Psychological training

As with conditioning training, mental health departments are primarily responsible for addressing psychological aspects. Each club's approach varies. In six cases, coaches reported that a psychologist maintains close communication with the GKs. Four coaches noted that the psychologist plays a secondary role, focusing on advising staff members on how best to respond in different situations. Another scenario, mentioned by three coaches, involves GKs who work with a private psychologist. In these cases, effective collaboration between the external psychologist and the club's staff is essential to ensure comprehensive support for the athlete. Two coaches highlighted that the moments when goalkeepers feel disappointed about not being selected are particularly critical and require psychological support.

Nine coaches emphasised the importance of daily emotional support from the GK coach. Seven of them stressed the need for proximity, attentiveness, and frequent conversations. One coach emphasised avoiding harsh criticism of mistakes, viewing them instead as learning opportunities that should contribute to the GK's development. Another coach pointed out the importance of showing a genuine interest in the GK's wellbeing—so that players perceive the coach as someone whose primary aim is to help them improve. Four coaches described how they work to improve the GK's mindset. Two explained that, to build confidence, they use closed drills before matches in which GKs execute familiar techniques. Another coach uses the frustration generated by errors as a tool to develop maturity and self-control. A fourth prefers to break the routine by introducing unexpected situations that require quick problem-solving, thus maximising the GK's attention.

*“Many times, if the GK fails on the last repetition of a drill, they'll ask for one more. In those cases, I sometimes say no. I make them regain their composure and calm down, because in just a few seconds we'll start another exercise, and they need to be ready.”*

[Coach 4]

Regarding competition, three coaches discussed strategies their GKs use to optimise performance or regain focus during matches. The first is visualisation: one coach shared that their GKs take 10–15 min before warm-up to visualise different match scenarios, helping them concentrate. Another coach stressed the importance of constantly gathering information from the game to stay focused and avoid disruptive internal thoughts. A third coach mentioned the use of predetermined hand signals to alert GKs when their concentration lapses, prompting them to refocus.

Finally, all coaches were asked how they support substitute GKs, based on the assumption that their psychological needs differ from those who play regularly, something all fifteen participants confirmed. Ten coaches believe the best way to keep substitute GKs engaged is through regular work with the goalkeeper coach, focused on personal development. They use individual improvement plans to track progress and define key areas for development. Eleven coaches also emphasised the importance of ongoing communication, recognising the work done in training and reinforcing the GK's value to the team. They make it clear

that playing opportunities can arise at any time, so being prepared is essential. A recurring message from coaches was the importance of daily encouragement and honesty when discussing each player's situation.

*"If I see a GK is feeling down during training, I try to lift them up. The GK coach must keep them motivated—after all, each session demands tremendous physical effort. They're diving, rolling, getting up again... They need to be immersed in that intense rhythm to stay motivated."*

[Coach 7]

*"You have to be upfront with the player. You can't promise something that won't happen or create false expectations. You must be honest, this is what builds the foundation for working with GKs who aren't playing regularly."*

[Coach 11]

### 3.6. Session design

When it comes to designing training sessions, five coaches stated that they base their sessions on the team training that GKs will later join. For instance, if the group is practicing crosses, the GK coach will design a session with the same objective. Two other coaches explained that they sometimes align with group training and sometimes not; it depends on the nature of the team drills. If the team tasks are low in tactical load, they prefer to use the specific session to work on other GK-specific needs. One coach said he does not consider group tasks at all, claiming to know his GKs' needs regardless of what is planned for the team, although he does help them transition by ending his session with a drill that prepares them for what they will do with the group.

Regarding how sessions start and progress, all fifteen coaches agreed: every specific session begins with goalkeepers already pre-activated from their individualised gym warm-up. The structure of the session should involve gradual increases in shot power and distance, as well as in the intensity of movements. In parallel, cognitive demand should increase by introducing greater uncertainty. Whilst this structure is consistent, each coach applies it differently. Three coaches start with exercises that avoid falling to the ground, two begin right away with real-game situations but control the intensity when time is short, and another three use the middle portion of the session for drills targeting physical conditioning. Interestingly, two coaches prefer that GKs warm up with the group, believing that it strengthens team bonds through the more relaxed and social nature of the early part of training.

Another key consideration when designing sessions is the training objective. Some coaches define a single primary goal per session, whilst others may set two or three. The objective might be based on the opponent in the upcoming match, on situations the GK has struggled with, or on patterns frequently encountered. Although variables differ across coaches, all aim to orient their sessions towards game-relevant contexts. Additionally, two coaches emphasised the importance of maintaining continuity in play during sessions, especially focusing on transitions, both offensive and defensive, due to their high frequency in competition.

*"Almost every play follows from the previous one. You might face two defensive situations in a row, or two offensive ones, or have to shift from defence to attack and back again. Transitions must be trained; you have to master aspects like space and opponent positioning awareness to handle those moments well."*

[Coach 13]

### 3.7. Periodisation

Regarding periodisation, the most common response (shared by 12 participants) was that annual periodisation is extremely difficult to implement in professional soccer. This is due to the unstable nature of

coaching jobs and the limited training time caused by a high volume of matches. As a result, most coaches reported that their planning focuses on preparing for each competition week individually. They determine what situations to work on based on the demands of the upcoming opponent and design short- to medium-term individual improvement plans for each GK. The overall goal is to arrive at each competition in optimal condition.

Two coaches, however, said they do plan for the entire season, though in completely different ways. One organises all necessary training content into thematic blocks and distributes those blocks throughout the year. This plan serves as a general guide but is not rigid, allowing for flexibility in its execution. The second coach begins by analysing the types of situations GKs faced in 50 matches from that league or competition. Based on the frequency of each situation, he assigns more or fewer training sessions to each topic over the course of the season. He also adapts sessions to specific opponents. For example, if crossing situations are frequent in the league and a particular team relies heavily on them, that topic will be emphasised in training during the week leading up to that match. More general content is reserved for opponents without a distinct style of play.

### 3.8. Individualisation

Eight coaches expressed the importance of truly getting to know their GKs in order to effectively individualise training. To do this, they employ a variety of strategies. Universally, they agreed that building a close relationship with the GKs, promoting open and frequent communication, is fundamental. Additionally, seven participants use video footage from both training and matches to support their assessments. Three coaches complete individual progress reports, whilst one organises group meetings where goalkeepers themselves identify areas for improvement and collectively define a path forward.

In training sessions, two main methods of individualisation were identified, each supported by seven coaches. The first method is rotational individualisation. Once GKs are integrated into group drills, the coach takes advantage of rotations—when some GK trains with the group whilst another trains with the goalkeeper coach—to work one-on-one on specific skills that need improvement. The second method is feedback-based individualisation. Here, all GKs perform the same exercises, but the coach adjusts the difficulty and focus for each GK based on their abilities and needs, offering tailored feedback. Sometimes, drills are designed with a specific GK in mind. Whilst this approach directly targets the development of one player, the others also benefit by maintaining their skills in that particular area.

*"What changes is the feedback I give to each one. Also, with the volume of work during the season, I can focus more on one GK one day and another next—but this kind of work is beneficial to everyone."*

[Coach 1]

Coach 2 provides important information regarding the differing needs between starting and non-starting GKs. He explained that post-match sessions must be differentiated: the starting GK usually requires a recovery session due to fatigue, whereas the non-starters need more intense, game-like drills to simulate the demands of match play.

## 4. Discussion

After conducting, transcribing and analysing the 15 interviews, this study aims to present the training methods and strategies used by professional GK coaches in their daily routines to prepare GKs to perform at the highest level of competition.

As seen in the [Results](#) section, each coach has a unique approach, but there are shared ideas and actions among many of them, suggesting a core set of practices and beliefs that all coaches should consider. One of the most common themes was the importance of aligning new GK

signings with the club's or coach's tactical model. This aligns with findings by Gyarmati et al.,<sup>27</sup> who emphasised the importance of recruiting players based on the playing model, noting that even one individual can influence the team's overall style. To better assess a player's fit within a model, Hewitt et al.<sup>28</sup> propose breaking down the game into five key phases (stable attack, offensive-to-defensive transition, stable defence, defensive-to-offensive transition, and set pieces), which can help determine the specific requirements of a team. One important factor to consider when signing a new GK is their offensive ability, as several studies have shown that GKs are increasingly involved in build-up play and in the offensive phase more broadly.<sup>29–31</sup>

When designing training sessions, coaches aim to improve individual performance whilst preparing GKs for the specific playing style of upcoming opponents. Liu et al.<sup>32</sup> highlight that athletes' perception of their opponents significantly influences decision-making and understanding the opponent's behaviour is key to making better decisions faster. Another widely supported idea among participants is the progressive increase in difficulty to enhance technique or improve problematic scenarios. Wickens et al.<sup>33</sup> found that simplifying tasks into shorter sequences is highly effective for learning, and that increasing difficulty only yields benefits when applied adaptively.

Regarding strength training, many coaches mentioned combining gym-based work with on-field sport-specific strength drills. Mujika et al.<sup>34</sup> concluded that contrast training, which involves both external loads and bodyweight sport-specific movements, enhances the execution speed of key motor actions, a central goal in most sports. Similarly, Helgerud et al.<sup>35</sup> found that maximal strength training during preseason improve sprint speed and jump ability in elite soccer players. However, one of the most innovative studies on strength training and specific jumping ability, conducted by Ibrahim et al.,<sup>36</sup> highlighted the importance of combining strength, power, and technique training on the field to improve GKs' jumping ability. In this study, participants completed six weeks of strength training followed by six weeks of power training, whilst simultaneously practising diving technique throughout the 12-week period. As for core training, which all participating coaches reported using, Ma et al.<sup>37</sup> found that strengthening the core improves physical fitness in badminton players, particularly in terms of strength, power, balance, and stability during movement and striking actions. Given the similarities in anticipation and movement between badminton players and soccer GKs, these findings could reasonably be extrapolated to goalkeeping.

One of the most novel findings in this study concerns the approach coaches take to keeping substitute GKs motivated and ready to play at any time. Numerous studies<sup>38–40</sup> emphasise the importance of athletes' psychological state for optimal performance. Considering the views expressed by many of the participants, who emphasised the importance of promoting individual development of GKs with limited playing time to both enhance their skills and maintain motivation, Castro-Sánchez et al.<sup>41</sup> demonstrated that task-oriented motivational climates can help prevent anxiety in athletes, and even improve performance compared to climates focused solely on outcomes. The authors were surprised to find little to no research on how to support non-playing athletes in team sports. This highlights an important area for future investigation.

Session design practices described by participants in this study align closely with those reported by Otte et al.<sup>16</sup> In both cases, GKs begin training after a gym-based pre-activation routine. Once on the field, sessions start with low intensity and uncertainty, gradually increasing until they closely replicate the demands and rhythm of competition. This type of session progression was recommended by Bompa and Buzzichelli,<sup>42</sup> who also emphasised the importance of periodisation over longer time frames, such as entire seasons or phases lasting two–three months. Such long-term planning should allow for a gradual progression in both training load and skill development. However, as highlighted in the **Results** section, many coaches reported that they do not implement this approach because they lack job security and sufficient training time, given the high

volume of competition. Instead, they rely on reactive periodisation, which adjusts the load in real time according to the athlete's or team's response.

## 5. Conclusions

There are multiple approaches to selecting and training professional soccer GKs. However, after analysing the responses of 15 elite goalkeeper coaches, several key considerations emerge that any coach should take into account. When integrating a new GK into a club, it is essential to assess whether their profile aligns with the club's style of play and philosophy. Training should focus both on the GK's individual development and on preparing them for the challenges posed by upcoming opponents. This includes addressing their technical weaknesses and supporting match performance, whilst also respecting their preferences and ensuring progressive increases in intensity and cognitive demand during sessions. Coaches must recognise that they are working with individuals rather than a homogeneous group, making it essential to understand and respond to the unique needs of each GK. Emotional awareness is also important, as GK coaches must provide the necessary motivation and support to facilitate ongoing development.

It is important to clarify that these conclusions primarily reflect the perspectives and applied knowledge of experienced professional coaches. Consequently, they provide context-specific insights rather than universally generalisable findings across all levels of soccer or coaching environments.

A secondary conclusion is that many of the strategies and principles articulated by the participants closely align with the existing body of sport science literature. Empirical evidence support their views in areas such as tactical recruitment,<sup>27</sup> adaptive skill acquisition,<sup>33</sup> strength and power development,<sup>34,35</sup> and athlete motivation.<sup>42</sup> This convergence suggests that elite GK coaching, whilst fundamentally experiential, increasingly integrates evidence-based practices, reinforcing the value of interdisciplinary collaboration between coaching and applied research.

## 6. Strengths of the study

This study presents three main strengths. First, it is pioneering in offering a holistic overview of professional GK coaching by collecting and comparing the perspectives of practitioners without narrowing the scope to one specific area. This comprehensive view allowed participants to share their insights on the most relevant aspects of their role. Second, the quality of the sample is noteworthy, not only due to the number of participants (15) but also because of their high level of professional experience in elite soccer. Third, the study focused on an often overlooked population compared to outfield players.

## 7. Study limitations and future research

On the one hand, a key limitation of this study is that it did not delve deeply into each individual topic. Instead, it adopted a broader perspective to capture an overall picture of professional GK coaching. However, this choice opens up opportunities for future research with more focused, in-depth approaches on specific aspects of the training process. On the other hand, despite strong participation from elite coaches, this study reflects their perspective, which may differ from those of other coaches.

It would also be of great interest to carry out a similar study on professional female GKs, in order to find out the different strategies adopted when training goalkeepers depending on their gender.

## CRedit authorship contribution statement

**Markel Perez-Arroniz:** Conceptualization, methodology, data collection, data processing, and text writing. **Asier Zubillaga:** Supervision

and data processing. **Javier Fernández-Navarro**: Methodology and text writing. **Julio Calleja-González**: Supervision.

### Confirmation of ethical compliance

Informed consent was obtained from all individual participants included in the study, following approval by the Ethics Committee of the University of the Basque Country (M10/2023/008).

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### Declaration of interest statement

The authors declare that they have no conflict of interest.

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### Data availability

The data used for this study is private, and only the authors were allowed to use it.

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