Revista Pensar a Prática | ISSN: 1980-6183 DOI 10.5216/rpp.v27.78221

Artigos Originais

The use of an additional field player in handball and its implications for defensive organization and behaviours

A utilização do jogador de quadra adicional no handebol e suas implicações para a organização e comportamentos defensivos

El uso del jugador de campo adicional en balonmano y sus implicaciones para la organización y comportamientos defensivos

João Paulo Torres di Gilio
Universidade de São Paulo, Ribeirão Preto, São Paulo, Brasil.
E-mail: joao.gilio@alumni.usp.br

Renato Francisco Rodrigues Marques
Universidade de São Paulo, Ribeirão Preto, São Paulo, Brasil.
E-mail: renatomarques@usp.br

Rafael Pombo Menezes
Universidade de São Paulo, Ribeirão Preto, São Paulo, Brasil.
E-mail: rafaelpombo@usp.br

Abstract: The change in handball rules has facilitated the use of an additional field player (AFP) during matches, and the investigations on this topic are centered on offensive behaviors. This work aimed to identify and analyze the behaviors advocated by elite Brazilian coaches for defensive return and positioned defense during the use of the AFP. Speeches of seven Brazilian handball coaches were analyzed using the Reflexive Thematic Analysis. Coaches emphasized the defensive reorganization process in two sub-themes: defensive return and instructions for AFP substitution;

1 This study did not receive financial support.

and positioned defense against the use of AFP. They suggest pressuring the opponents as soon as they lose the ball possession when playing with the AFP, and in the positioned defense they prefer 6:0 and 5:1 defensive systems.

Keywords: Sports Coaching; Team Sports; Players' Development; Coaches; Sports Training.

Resumo: A mudança nas regras do handebol facilitou o uso do jogador de quadra adicional (JQA) durante as partidas, e as investigações sobre esse tema estão centradas em comportamentos ofensivos. O objetivo deste trabalho foi identificar e analisar os comportamentos defendidos por treinadores de elite brasileiros para o retorno defensivo e a defesa posicionada durante o uso do JQA. Os discursos de sete treinadores brasileiros de handebol foram analisados usando a Análise Temática Reflexiva. Os treinadores enfatizaram o processo de reorganização defensiva em dois subtemas: retorno defensivo e instruções para substituição do JQA; e defesa posicionada diante do uso do JQA. Eles sugerem pressionar os oponentes assim que perderem a posse de bola ao jogar com o JQA e, na defesa posicionada, preferem usar sistemas defensivos como o 6:0 e o 5:1.

Palavras-chave: Treinador Esportivo. Esporte Coletivo. Desenvolvimento de Jogadores. Treinadores. Treinamento Esportivo.

Resumen: La modificación en las reglas del balonmano ha facilitado el uso de un jugador de campo adicional (JCA) durante los partidos, y las investigaciones sobre este tema se centran en comportamientos ofensivos. El objetivo de este trabajo fue identificar y analizar los comportamientos defendidos por entrenadores de élite brasileños para el retorno defensivo y la defensa posicionada durante el uso del JCA. Se analizaron los discursos de siete entrenadores brasileños de balonmano utilizando el Análisis Temático Reflexivo. Los entrenadores enfatizaron el proceso de reorganización

defensiva en dos subtemas: retorno defensivo e instrucciones para la sustitución del JCA; y defensa posicionada contra el uso del JCA. Sugieren presionar a los oponentes tan pronto como pierdan la posesión de la pelota al jugar con el JCA, y en la defensa posicionada prefieren utilizar los sistemas defensivos 6:0 y 5:1.

Palabras clave: Entrenador Deportivo. Deporte de Equipo. Desarrollo de Jugadores. Entrenadores. Entrenamiento Deportivo.

Submetido em: 04/01/2024
Aceito em: 17/04/2024

1. Introduction

Handball can be characterized as a complex and dynamic system marked by the competition between players from two teams who simultaneously pursue opposing objectives and self-organize based on the behaviors of their teammates and opponents (Passos; Araújo; Davids, 2013). Depending on ball possession, the game can be divided into phases with specific action rules (offensive and defensive) (Grehaigne; Godbout, 1995) that guide players' behaviors. Considering the specificities caused by the handball rules, principles of handball gameplay (Estriga, 2019) were proposed to contribute to a sports development process that respects the stages of athletes' development.

Coaches play a significant role in contributing to the self-organization process of the game through their leadership within the team (Passos; Araújo; Davids, 2013), by creating game models, strategies, and game plans that guide individual, group, and collective actions (Garganta, 2008; Ribeiro *et al.*, 2019). The coach's game model should provide general and specific strategic, tactical, and technical guidelines that allow players to adapt their behaviors to the game context (Mendes *et al*., 2021; Ribeiro *et al.*, 2019) and help them achieve the objectives of each game phase (Garganta, 2008), even in specific situations (such as numerical asymmetry and passive play in handball).

Numerical asymmetry in handball can be caused by player exclusions and the use of the additional field player (AFP) strategy and may be associated with winning teams (Prieto; Ruano; Sampaio, 2017). The AFP strategy can be employed to achieve numerical superiority (7vs6) or to balance the numerical relation after a suspension, and it was favored by the regulatory change in 2016 (IHF, 2016a; b), which no longer requires a specific player to substitute the goalkeeper.

The rule change triggered a process of self-organization in the game of handball (Passos; Araújo; Davids, 2013) and required teams to adapt their offensive behavior in the years following the

changes (Gilio, 2021). In the 2016 Olympic Games, there were no significant differences between situations with and without the use of AFP (Krahenbühl *et al.*, 2019). However, attacks that utilized AFP during exclusion situations showed higher effectiveness than attacks that did not use AFP in the two adult World Championships in 2017 (Maroja *et al*., 2020; Prudente *et al*., 2019). The analysis of various parameters in the 5vs6 situations than in the 7vs6 situations revealed higher values of gained penalties, missed shots, technical errors, received goals empty net, and received fast-break goals (Gumus; Gencoglu, 2020).

Several studies have addressed the offensive effectiveness of using AFP in exclusion situations (Beiztegui-Casado; Oliver-Coronado; Sosa-González, 2019; Gumus; Gencoglu, 2020; Prudente *et al*., 2019) and those that aimed to achieve offensive numerical superiority (Krahenbühl *et al.*, 2019; Maroja *et al*., 2020; Musa *et al.*, 2017). However, although these studies have focused on the offensive consequences of using AFP, there is a lack of studies regarding the intended behaviors of coaches for the defensive return and positioned defense in handball. Therefore, this study aimed to identify and analyze the behaviors advocated by elite Brazilian coaches for defensive transition and positioned defense during the use of AFP, their relationship with the handball game context, and the potential implications for the training and playing process.

2. method

2.1 Participants and ethical aspects

Seven Brazilian handball coaches participated in this study, with an average age of 46.6 (± 9.4) years. All seven coaches are males, with six of them residing in the State of São Paulo and one in the State of Santa Catarina. On average, they graduated in Physical Education 25.9 (± 9.9) years ago and have 26 (± 11.6) years of professional experience. Four coaches work with male teams

(T1M, T5M, T6M, and T7M), and three work with female teams (T2F, T3F, and T4F).

The coaches were selected based on inclusion criteria that aimed to include those who coached both female and male senior teams that ranked from first to fourth position in the national handball league and the Brazilian senior squads between 2016 and 2018. Ten potential participants met the inclusion criteria; however, three were excluded for not responding to the researcher's contact and/or not agreeing to participate. The seven coaches who participated signed an Informed Consent Form, ensuring the confidentiality of their identities and the use of data solely for scientific purposes. The ethical process was approved by an institutional Research Ethics Committee.

2.2 Production and data analysis

For data production, a semi-structured interview script was developed, allowing the researchers to utilize a protocol with pre-established questions. In a semi-structured interview, the researcher has the flexibility to intervene and ask additional questions to delve deeper into topics that were covered superficially or were not initially anticipated (Marconi; Lakatos, 2011; Purdy, 2014).

Three questions guided the elaboration of the interview instrument, jointly developed by the authors: 1. talk about the expected behaviors for the defensive return after using AFP; 2. talk about the substitution of AFP; 3. talk about your expectations regarding the defensive behavior when facing the utilization of AFP by the opponents. All interviews were scheduled according to the participants' availability, and the interviews were concluded in 2020.

The first author, with prior experience of four years in data production techniques, conducted the interviews through video call applications due to logistical challenges that made it difficult to travel to the cities where the coaches reside. All interviews were

recorded (video and audio) for later full transcription into a text editor. The transcriptions were sent to the coaches for review and consent, allowing the treatment and the start of the data analysis.

The discourses were analyzed using the Reflexive Thematic Analysis (RTA), which consists of six stages: 1. familiarization with the data; 2. generation of initial codes; 3. production of initial themes; 4. revision of themes; 5. definition and naming of themes; 6. production of the report. (Braun; Clarke, 2006; 2019; Braun; Clarke; Rance, 2014). Relying on a predominantly theoretical-deductive, latent, and constructionist approach, specific aspects of the discourses were analyzed, supporting the definition of themes based on recurrence and/or relevant codes in the coaches' speeches.

The RTA reinforced its flexible nature through an interactive analysis process between data and theory, highlighted in the role of the researcher who produced themes based on categories resulting from a profound reflexive engagement with specific literature and the data (Braun; Clarke, 2019). The flexibility of the analysis process justified the choice of RTA and proved to be an accessible method for categorizing large amounts of data (Braun; Clarke, 2006).

The RTA produced the theme "Aspects of the defensive phase and defensive return from the utilization of AFP" and two sub-themes. The first sub-theme ("Defensive return and guidelines for AFP substitution") addresses the defensive return phase and identified analysis categories related to "avoiding the opponent's throw after losing the ball", "when to substitute AFP", and "court player responsible for the substitution". The second sub-theme ("Aspects of the positioned defense against the use of AFP") presented relevant elements to the positioned defense in equal numerical situations and numerical inferiority.

3. Findings

This study identified and analyzed the behaviors adopted by Brazilian coaches for defensive return and positioned defense during the use of AFP, their relationship with the handball game context, and potential implications for the training and playing process. The coaches emphasized that the defensive phase begins with the defensive return process (from the change of possession in attack). As a result, the RTA highlighted a theme ("Aspects of the defensive phase and defensive return from the utilization of AFP"), which comprised two sub-themes ("Defensive return and guidelines for AFP substitution", and "Aspects of the positioned defense against the use of AFP").

3.1 Sub-theme 1. Defensive return and guidelines for AFP substitution

The RTA identified that coach T3F showed concern about the moments when his goal was empty after the end of the attack. He expects his players to inhibit the opponent's throw during the substitution of AFP for the goalkeeper:

> The team that is attacking [with AFP] also needs to train the defensive return to inhibit throws. Returning to defense while hindering passes, getting in the throwing lane to block, and preventing quick shots after a throw-off (T3F).

Coach T3F's concern is evident in inhibiting a potential throw using a defensive return that hinders the opponent's progression, protects the most dangerous areas (even on throw-off), and quickly organizes the defensive system. These aspects are important principles of the defensive return (Antón García, 2002; Estriga, 2019; Menezes; Morato; Marques, 2016). Coach T3F's excerpts reinforce the need for defensive principles and defensive return in the game modeling process and in the identification and implementation of possible action rules (such as limiting passing possibilities and avoiding throws).

For the substitution of AFP, two relevant aspects were identified, involving: 1. the appropriate moment for the substitution; and 2. the players who should anticipate the end of the attack and proceed with the substitution. The RTA highlighted important directions related to the timing of the substitution, which can be identified in the following excerpts:

> There is a well-established action before the substitution; usually, a player performs a specific action and then leaves before the throw. Teams frequently employ this strategy when facing a 2-minute suspension. In the 7vs6 situation, it becomes a bit more challenging to anticipate the substitution, but it still occurs when there are established actions (T1M).

> Some players tend to leave [the court] too early, which can be counterproductive. Even though the team is technically in a numerical advantage, the early substitution of the player balances the game, and the desired superiority is not achieved (T3F).

> When there is a player already designated to throw, you can anticipate the substitution, and the other player leaves [the court] before the throw. As soon as the throwing action begins, someone else must be returning to the defense. It is not necessarily predetermined; it depends on the specific situation (T7M).

The coaches emphasized the importance of players not directly involved in the throwing area and responsible for the substitution to anticipate this moment for the goalkeeper's return to the court. An important point was observed regarding the timing of the substitution, where coaches T1M and T3F highlighted instances when athletes left the court too early, resulting in the loss of the previously numerical advantage without a benefit. To assist in decisions concerning the timing of the substitution, the

RTA identified the following excerpts where the coaches assign the responsibility of the substitution to specific positions based on the game situations:

> During training, it is instructed that players who are closer to the substitution area, such as the center back, the right/left back, and the wing on the substitution side, can anticipate the substitution, provided the throw occurs in a predictable manner (T2F).
>
> In the 7vs6 situation, to have a real advantage, you cannot simply select a player to leave because it will balance the situation in attack. So, after the throw, the closest player [to the substitution area] leaves the court for the substitution. In the 6vs6 situation, there is a proposal for who leaves, which can be a player who only plays in attack or the wing on the substitution side (T6M).
>
> Initially, you establish who leaves [the court], and then you define the nearby areas. You need to practice actions for the closest player to the substitution area to understand when to substitute (T7M).

The RTA revealed that the coaches choose to assign the responsibility of substitution to players closer to the substitution area, such as the center back, the right/left back, and the wing. This option presented some possibilities in a scenario where any offensive player may be involved in the throw. If a specific player was designated for substitution and that player participated in the offensive actions to throw, the substitution could be delayed. However, coach T6M's discourse differed from the others when he highlighted that in situations where he uses AFP during periods of exclusion (e.g., to generate a 6vs6 situation), he designates a specific player for the substitution. In this case, the coach suggested a standardized situation (with the definition of specific substitution) due to a specific circumstance (offensive numerical inferiority).

The defensive behaviors highlighted by the RTA revealed content regarding specific situations of using AFP for the game modeling process. This includes the assignment of responsibilities for AFP substitution and the guidelines for identifying the appropriate moment for the substitution. The game model must allow and identify possibilities for adaptation in response to the different game situations (Garganta, 2008; Passos; Araújo; Davids, 2013; Ribeiro *et al.*, 2019). It was observed that the context of simultaneous opposition and cooperation offered by the game creates an unstable environment that influences players' decision-making in the AFP substitution.

3.2 Sub-theme 2. Aspects of the positioned defense against the use of AFP

The offensive game with AFP can present two distinct situations: 1) in moments of numerical exclusion, AFP is used to balance the numerical situation or to reduce numerical inequality (e.g., 6vs6, 5vs6, 5vs5...); and 2) when substituting the goalkeeper to create a numerical advantage (e.g., 7vs6). The sub-theme 1 revealed that coaches understand that the defensive aspects required to face attacks with AFP in moments of numerical exclusion do not differ significantly from traditional 6vs6 situations.

> The first thing as a [defensive] plan is that we will try to steal the ball. We have to be aggressive, floating, and covering the passing lanes. The mindset doesn't change [when the opponents have or do not have the goalkeeper] (T4F).

> What is your defensive game model? Is it based on pressure or anticipation? You will maintain your model regardless of whether the [opponent] goalkeeper in on the court (T7M).

The coaches stated that they prioritize maintaining the defensive game model regardless of whether the opposing teams use AFP to create numerical superiority or to balance the numerical

situation during exclusions. The game model represents the strategic, tactical, and technical possibilities for fulfilling the game principles, where the coach selects and emphasizes behaviors relevant to each typical constraint that the game presents (Passos; Araújo; Davids, 2013; Ribeiro *et al.*, 2019).

Coaches also emphasized that in both possibilities offered by the use of AFP, it is important for the defenders to induce the throw from specific areas of the court. This can be seen in the following excerpts from the coaches' discourses:

> Many teams try to create superiority on the side of the substitution area, allowing the players who are closer to there to have the possibility to throw and have a longer substitution with a bit more difficulty (T3F).

> [It is expected] that the throw always comes from the side of the substitution area so that they have more difficulty and conflict during the substitution (T6M).

The team using AFP in their offensive strategy needs a player to take anticipatory action during the throw to facilitate the substitution of a court player with the goalkeeper, ensuring that the goal does not remain vulnerable for a long period. Coaches T3F and T6M highlighted their intention to induce throws of players positioned in areas near the substitution area against teams that use AFP. This approach favors the participation of players in the throw region and consequently hinders their return for substitution. Before the regulation change in 2016 (IHF, 2016a; 2016b), Brazilian coaches emphasized that the defense induced shots from the player in a goalkeeper's jersey, making it difficult for the goalkeeper to be substituted (Gilio, 2021).

Advocating for throws in specific regions proves to be a relevant aspect of the defensive game model as it provides possibilities for "how" and "what" to do when facing an opponent using AFP. While the defense attempts to induce the attack to throw from a specific

area, the offensive team may have opposing objectives. Coaches T2F, T3F, T6M, and T7M stated that the regulatory change in 2016 affected the game model of some teams, as shown in the following excerpts:

> Many teams from Africa, Asia, and South America used open defensive systems, and today it is not so easy. [...]. Mixed defenses are difficult now because if you take someone out of the defensive lines to mark someone, the other team uses the seventh player, and it becomes impossible (T2F).
>
> Often, Asian teams defended very openly, with a 3:3 almost in the middle of the court, sometimes in man-to-man defense. [The rule change] harmed them because now the seventh player makes it difficult if they want to play very high, inducing the opponent to play close to their own goal (T3F).
>
> It's a rule that prevents teams from Asia, South America, and Africa from playing with an open defensive system (T6M).
>
> Throughout the pre-Olympic phase, continental championships, and then the pre-Olympics, they played with the old rule, and at the Olympics, they played with the new rule. [...]. No one had had so much time to practice with the new rule (T7M).

The rule change facilitated the use of AFP and proposed changes to defensive game models that previously prioritized open, individual, and mixed defenses. The numerical asymmetry challenges the direct correspondence of a defender with their opponent, requiring adaptations to the game modeling process through performance evaluation and training sessions (Ribeiro

et al., 2019). It is noteworthy that Coach T7M's reflection on the need for regulatory changes to allow sufficient time for teams to adapt their game models for competition. According to the interviewed coaches, defensive systems such as 6:0 and 5:1 prove to be possible strategic resources for addressing this situation of numerical asymmetry:

> At times, we started using the 5:1 with the advanced player slightly lower, to keep the center back further away and create difficulty to pass the ball (T1M).
>
> I practice two defensive actions to play in 6vs7, both 6:0 and 5:1. I train both, and it will depend on the game which one we will use (T3F).
>
> You have to look at why you're doing it and against whom you're doing it [...] if you try to play 5:1 against teams with very competent pivots, you may have difficulties depending on where they are. If the attack tends to move to the center [diagonals], you put the 5:1, and it disrupts the game (T7M).

The RTA revealed that coaches identify numerical asymmetry as a factor that hinders the use of defensive systems other than 5:1 and 6:0. The results reinforce the difficulty of establishing direct and immediate defensive responsibilities in defensive numerical inferiority, as previously reported (Antón García, 2002). The option for more compact defensive systems (in theory) during numerical inferiority situations underscores their role in facilitating certain technical-tactical actions, such as defensive triangle, covering, and pressure (Antón García, 2002; Menezes, 2011). The closer proximity between defenders enables the reestablishment of the defensive system in areas where there is greater vulnerability.

Although it is possible to maintain defenses with two lines, such as the 5:1, the difficulty of organizing open defensive systems

and adopting specific behaviors is evident, which may impact younger teams. This factor was advocated by coach T5M: "I do not recommend it for younger teams; I think there are many other things to focus on, like games with open and individual defenses", and reinforced by the scenario found in the under-12 and under-14 teams in the State of São Paulo-Brazil (Leonardo *et al.*, 2019). On the other hand, the use of AFP in senior teams reinforces high levels of specialization because its use is a pertinent strategy to achieve favorable results (even momentary).

For situations in which they face attacks using AFP to create numerical superiority (7vs6), the coaches emphasized the need for defensive behaviors that aim to equalize the numerical relationship in the area close to the ball.

> To defend in inferiority, I have to anticipate what the opponent wants or intends to do. [...] Everyone has to be very good at reading passing options, not only in occupying the space but also intercepting the ball's trajectory, both in defensive blocks and passing to the pivots, whether it is a pass in the same line or different lines. [...] Creating situations where the attack is always unsure about what to do (T2F).

> Depending on where the pivots are, you can organize your defensive system to nullify the superiority. Initially, placing the pivot between the outside and half defenders on both sides was common, but that did not work well because the outside defenders started moving up, and the middle of the attack would be balanced in a 3vs3 situation, undoing any numerical advantage (T7M).

The RTA revealed that individual technical-tactical actions, such as dissuasion and floating, gain prominence during situations of defensive numerical inferiority. These actions aim to pressure potential receivers and limit the options of the attacking player with ball possession, which favors numerical balance in that area (Antón

García, 2002; Menezes, 2011). When T7M emphasizes the role of the outer defenders in defensive balance through dissuasion, it reinforces the significance of other collective and individual actions such as closing out and covering.

The complex systemic relationship presented in the coaches' discourses in both sub-themes reinforces the need for developing a game model that allows players to adapt to the adversities posed by various game situations. The results also emphasize the importance of a training process that enables the learning of defensive action rules to operationalize the principles of this phase, such as creating uncertainties and reducing attackers' options (Estriga, 2019). Additionally, the discussed results on the relevant behaviors related to defensive recovery and positioned defense suggest performance indicators that can assist in evaluating handball teams during the utilization of AFP.

The RTA identified that adaptations to the game context were relevant elements for the AFP training process. Although this was not the central focus of this study, the use of Game-Based Approaches (GBA) is suggested for training content related to AFP. In terms of selecting strategies for training substitution (for defensive return) and the required behaviors of positioned defense against AFP, games similar to the formal context and specific situations in handball can reinforce the context of numerical asymmetry and enable players to make decisions based on the specificity of the context.

For the game modeling process to occur, there must be a connection between training tasks and the intended principles of the model (Ribeiro *et al.*, 2019). This highlights the importance of GBA (Kinnerk *et al*., 2018; Light; Harvey, 2017) when seeking to consolidate action rules (Grehaigne; Godbout, 1995) relevant to the context of handball. As this study focuses on adult teams, the need for GBA that offers the chaining of various phases of the game and the challenges presented during ball loss becomes evident.

Although the interviews allowed for the identification and analysis of the coaches' subjectivity regarding their behaviors in response to the use of AFP, one limitation of this study is the difficulty in verifying if the reported facts by the coaches have been practiced through direct observation of training sessions. The discussion of the results suggests GBA as a pedagogical alternative for handball coaches when dealing with AFP-related content. Further investigations are needed to understand how coaches emphasize and implement this content in practice.

In conclusion, the combination of interview data with direct observation can provide a more comprehensive understanding of how coaches apply their knowledge and strategies in training sessions and matches, providing insights into the implementation and effectiveness of the strategies discussed during the interviews.

4. Conclusion

The Brazilian coaches interviewed advocate for pressuring opponents as soon as they lose the ball possession when playing with AFP, to allow the substitution of the player positioned near the substitution area who anticipates the end of the offensive phase for the goalkeeper's entry during defensive return. For positioned defense, the coaches recommend using defensive systems such as 6:0 and 5:1, with the employment of technical-tactical actions of anticipation that aim to achieve numerical equality in the ball's region.

As specific contents of the defensive phase, some behaviors were perceived, such as: pressuring the opponent with the ball as soon as lost possession; defensive technical-tactical actions of anticipation (dissuasion, pressure, defensive triangle...); and the pursuit of numerical equality in the ball's region when facing defensive numerical inferiority. This study provided potential contributions to the construction of guidelines for playing with AFP within the game model considering: when to substitute and the player who will leave the court; the role of closed defensive

systems in the face of numerical asymmetry; the ability to adapt defensive instructions to the complex scenario of the game.

The findings also underscore the significance of creating a flexible game model that can adapt to different game scenarios, the importance of effective defensive training to develop players' decision-making, and the potential use of performance indicators to evaluate teams' defensive performances when employing AFP. Such insights can contribute to enhancing team performance against the use of AFP.

References

ANTÓN GARCÍA, J. L. **Balonmano, táctica grupal defensiva**: concepto, estructura y metodología. Granada: Grupo Editorial Universitario, 2002.

BEIZTEGUI-CASADO, C.; OLIVER-CORONADO, J.; SOSA-GONZÁLEZ, P. I. Portero-jugador en situaciones de inferioridad numérica ofensiva en balonmano: ¿Penalización o ventaja? **Revista Internacional de Medicina y Ciencias de la Actividad Física y del Deporte**, Madrid, v. 19, n. 74, p. 293-307, 2019.

BRAUN, V.; CLARKE, V. Using thematic analysis in psychology. **Qualitative Research in Psychology**, London, v. 3, n. 2, p. 77-101, 2006.

BRAUN, V.; CLARKE, V. Reflecting on reflexive thematic analysis. **Qualitative Research in Sport, Exercise and Health**, Abingdon, v. 11, n. 4, p. 589-597, 2019.

BRAUN, V.; CLARKE, V.; RANCE, N. How to use thematic analysis with interview data. *In*: VOSSLER, A.; MOLLER, N. (ed.). **The counselling & psychotherapy research handbook**. 1 ed. Sage, 2014. p. 183-197.

ESTRIGA, L. **Team handball:** teaching and learning step-by-step. 1 ed. Coimbra: Agência Nacional, 2019.

GARGANTA, J. Modelação táctica em jogos desportivos: a desejável cumplicidade entre pesquisa, treino e competição. *In*: TAVARES, F.; GRAÇA, A.; GARGANTA, J.; MESQUITA, I. (ed.). **Olhares e contextos da performance nos jogos desportivos**. 1 ed. Porto: Universidade do Porto/Faculdade de Desporto, 2008. p. 108-121.

GILIO, J. P. T. D. **O jogador de quadra adicional no handebol**: perspectivas de treinadores brasileiros sobre a estratégia. 2021. 94 f. Dissertação (Mestrado em Educação Física) - Escola de Educação Física e Esporte de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto/SP, 2021.

GREHAIGNE, J. F.; GODBOUT, P. Tactical knowledge in team sports from a constructivist and cognitivist perspective. **Quest**, Champaign, v. 47, n. 4, p. 490-505, 1995.

GUMUS, H.; GENCOGLU, C. The effects of the goalkeeper substitution rule as a new strategy in handball: analysis of Men's European Handball Championship 2020. **Acta Gymnica**, Olomouc, v. 50, n. 3, p. 113-121, 2020.

IHF – INTERNATIONAL HANDBALL FEDERATION. Rules of the game. IHF, 2016a. Disponível em: https://www.ihf.info/sites/default/files/2024-07/09A%20-%20Rules%20of%20the%20Game_Indoor%20Handball_E_0.pdf

IHF – INTERNATIONAL HANDBALL FEDERATION. New Rules: 7 field players – New tactical possibilities! Youtube, 2016b. Disponível em: https://www.youtube.com/watch?v=ynaGE_vIBRk.

KINNERK, P. *et al*. A review of the game-based approaches to coaching literature in competitive team sport settings. **Quest**, Champaign, v. 70, n. 4, p. 401-418, 2018.

KRAHENBÜHL, T. *et al.* The use of the additional field player in handball: analysis of the Rio 2016 Olympic Games. **RICYDE**

Revista internacional de ciencias del deporte, Madrid, v. 57, n. 15, p. 295-306, 2019.

LEONARDO, L. *et al.* Opiniões de treinadores sobre o uso do sétimo jogador de quadra contra o sistema defensivo individual obrigatório em competições de handebol das categorias sub-12 e sub-14. **Corpoconsciência**, Cuiabá, v. 23, n. 1, p. 1-12, 2019.

LIGHT, R. L.; HARVEY, S. Positive pedagogy for sport coaching. **Sport, Education and Society**, London, v. 22, n. 2, p. 271-287, 2017.

MARCONI, M. A.; LAKATOS, E. M. **Metodologia científica**. 6. ed. São Paulo: Atlas, 2011.

MAROJA, G. *et al*. Caracterização do ataque em sistema com a utilização da "baliza deserta" no handebol feminino. **Revista Brasileira do Esporte Coletivo**, Recife, v. 4, n. 1, p. 10-20, 2020.

MENDES, J. C. *et al*. Construcción del modelo de juego en balonmano. **Pensar en Movimiento**: Revista de Ciencias del Ejercicio y la Salud, San José, v. 19, n. 1, p. 1-25, 2021.

MENEZES, R. P. **Modelo de análise técnico-tática do jogo de handebol:** necessidades, perspectivas e implicações de um modelo de interpretação das situações de jogo em tempo real. 2011. 302 f. Tese (Doutorado em Educação Física) - Faculdade de Educação Física, Universidade Estadual de Campinas, Campinas/SP, 2011.

MENEZES, R. P.; MORATO, M. P.; MARQUES, R. F. R. Offensive and defensive strategies in handball during the transition phase from the perspective of experienced coaches. **Journal of Physical Education**, Maringá, v. 27, n. 1, p. e-2753, 2016.

MUSA, V. *et al.* Participação do goleiro-linha no handebol: análise a partir do tempo de jogo, relação numérica, posto específico e

match-status. **Revista Portuguesa de Ciências do Desporto**, Ribeirão Preto, v. 17, n. S1.A, p. 213-221, 2017.

PASSOS, P.; ARAÚJO, D.; DAVIDS, K. Self-organization processes in field-invasion team sports: implications for leadership. **Sports Medicine**, Auckland, v. 43, n. 1, p. 1-7, 2013.

PRIETO, J.; RUANO, M.; SAMPAIO, J. Players' exclusions effects on elite handball teams' scoring performance during close games. **International Journal of Performance Analysis in Sport**, London, v. 15, n. 3, p. 983-996, 2017.

PRUDENTE, J. N. *et al*. Analysis of the influence of the numerical relation in handball during an organized attack, specifically the tactical behavior of the center back. **Frontiers in Psychology**, Pully, v. 10, p. 2451, 2019.

PURDY, L. Interviews. *In*: NELSON, L.; GROOM, R.; POTRAC, P. (ed.). **Research methods in sports coaching**. London: Routledge, 2014. p. 161-170.

RIBEIRO, J. *et al.* Exploiting bi-directional self-organizing tendencies in team sports: the role of the game model and tactical principles of play. **Frontiers in Psychology**, Pully, v. 10, p. 2213, 2019.

Publisher

Universidade Federal de Goiás. Faculdade de Educação Física e Dança. Publicação no Portal de Periódicos UFG. As ideias expressadas neste artigo são de responsabilidade de seus autores, não representando, necessariamente, a opinião dos editores ou da universidade.