Sports Training

The structuring of the defensive phase of beach handball

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Associate Editor: Luca Paolo Ardigò. Università di Verona, Verona, Italia.

Abstract - Aims: To analyze the structuring elements of the defensive phase of beach handball based on the coaches' speeches. **Methods:** Five coaches of adult male and/or female teams that played the Beach Handball championship of Sao Paulo State were interviewed. For the analysis of the speeches, the Collective Subject Discourse method was used. **Results:** The defensive phase is structured from hierarchical aspects: numerical asymmetry (by the presence of the specialist player), defensive systems (influenced by the characteristics of the players of their own team and the opponents), and technical-tactical specific actions (defensive blocking, coverage, dissuading…). The numerical asymmetry and the defensive system are responsible for the choices of the technical-tactical actions. **Conclusion:** The defensive structuring elements are related in a hierarchical way, which provides a better understanding of beach handball by coaches and players.

Keywords: sport pedagogy, team sport, teaching-learning, game structure, coaching.

Introduction

Beach handball is characterized as an invasion team sport, and Brazil occupies a prominent position in the international scenario, with good results in South American and World Championships[1,2]. This sport is characterized by the simultaneous dispute for the ball possession, whose context is drawn from the relationships between the players (teammates and opponents).

The possibility of a goal worth two points (spin shots, inflight shots, and specialist goals)[1,3,4], the presence of the specialist (which implies a numerical asymmetry)[2], and the sand (which makes dribbling difficult) influences the relationships between teammates and opponents, and the process of strategy selection[2]. The analyzes of the European Beach Handball 2015 showed that the behaviors in the competition were different according to gender, so the spin shots were used more often to end the attack by male teams than in female teams, in which inflight shots are decisive[5]. Hierarchically, the numerical asymmetry, the presence of the expert, the game systems, and the technical-tactical actions are preponderant in the structuring of the attack and are related to the players' decision making[2]. The use of closed defensive systems can favor positive decisions by attackers related to goals with double scores, as seen in the seniors Spanish Cup in 2016[6].

The offensive numerical superiority (4 vs. 3) caused by the specialist, is a prerequisite for the offensive and defensive organization and is found in most offensive actions[1,7]. The specialist is a central element to the team's organization in the attack on beach handball and influences the choices of offensive and defensive systems[2]. The presence of this player results from the substitution of the goalkeeper by a court player (called specialist) and represents the end of the offensive transition[7,8]. The analysis of some male and female teams that participated in the 2016 Beach Handball Spanish Cup identified that in the male teams the specialist's assistance is not related to a positive result of the attack, while in the female teams the specialist's assistance is independent of the positive result[3]. This situation changes the mode of the defensive organization due to the score given to their converted finishes[7,8].

Beach handball defense systems (zonal, man to man, and mixed) must be dynamic to enable coverage, hampering, and difficulty the movement of your opponents[3,9]. The main zonal defensive systems are 3:0, 2:1, 1:2, and 0:3[9], and man to man is characterized by a very close marking of the direct opponent highlighting the direct opposition relations[10]. Due to the particularities of the playing field and the rules of the game, the technique of beach handball differs from handball, such as dribbling and defensive blocking (jumping allowed into the goalkeeper's area without contact with the attacker)[11]. Other technical-tactical handball actions are also found in beach handball, such as (scaling, floating, dissuading, and counter blocking)[10,12]. The mentioned situations cause a challenging environment, especially for young players[1] and adults, then there is a demand to understand how the defensive elements are structured in beach handball.

Several studies in handball have analyzed the general structure[1,8], the goalkeepers' analysis[3], the specialist player[3], the defensive tactical aspects[9], the internal and external load[13], and the offensive structure[2], especially through official matches or quantitative analysis[3,4,7,9,13]. There is a lack of studies on defensive structure (when compared to offensive phase analyzes), mainly based on qualitative studies. Our study addresses this topic based on the coaches' speeches (qualitative research), by revealing how defensive structuring is hierarchically thought by them and for allowing to understand the main aspects that subsidize this structure.

The attempt to reveal how the defense is structured can help the methodological decisions of beach handball coaches, analysts and support future researches about the theme[2]. Therefore, this work aimed to identify and analyze the structuring aspects of the defensive phase from the opinion of beach handball coaches.

Methods

Participants and ethical aspects

Five beach handball coaches who played at least one stage of the State of Sao Paulo Championship (organized by the São Paulo Handball Federation) were interviewed. All coaches signed the Free and Informed Consent Term approved by an Ethics in Research Committee (CAAE: 39797014.1.0000.5659).

The mean age of the coaches was 32 ± 12.6) years old and 3 ± 3.2 years of professional experience; three of them were coaches of both genders, one was a male team coach and one female team coach. All coaches were Physical Education professionals for an average of 11 ± 10.9 years and three have postgraduate degrees. Four respondents were also handball coaches.

Interview instrument and procedures

The choice for qualitative research was due to the concern to analyze and interpret aspects regarding the reality of the practice, the knowledge of the participants, and the understanding of the characteristics of a group, organization, or social phenomenon[14]. To access the coaches' thoughts about the offensive and defensive content of beach handball, as well as the teaching approaches prioritized by them, a semi-structured interview instrument was elaborated. With this, there was concern about the level of reality that cannot be quantified and is full of meanings, beliefs, and values[15], related to the dynamic and complex context of the game, the interactions between players, and their possible consequences[10].

The semi-structured interview allows the researcher to talk about the subject, giving freedom to the coach to develop the proposed theme, expanding access to subjective data[10]. The interview with the coaches was scheduled by e-mail and/or telephone contact, at which time the importance of participation in the research and its contributions was emphasized, ensuring the confidentiality of their identity. The interview was divided into two blocks: 1) personal information and academic background; 2) defensive aspects of beach handball.

Speeches analysis

In order to organize, tabulate and analyze the speeches of the coaches, the Collective Subject Discourse (CSD) method was used, which is based on discursive questions to produce the information regarding the thoughts and opinions that will be expressed from the discourse about a subject[16]. The CSD is based on Serge Moscovici's Theory of Social Representations, whose concern is with the subject-object relationship and with the process of individual and collective knowledge construction[17].

The CSD is composed of three methodological figures: central ideas (CI - succinct and reliable description of the meaning of a discourse on a theme), key expressions (KE - continuous and/or discontinuous excerpts of the discourse), and the collective subject discourse (CSD - first-person synthesis speech based on KE with the same CI)[16]. The CSD was prepared by consensus by two authors of this study, both with experience in the teaching of handball. In the Results section, the CSD will be presented in full, with the origin of the speeches highlighted in a superscript way.

Results

Three CSD were elaborated and revealed the structure of the defensive phase of beach handball (as seen in Table 1): CSD1 ("Numerical asymmetry", shared by all coaches); CSD2 ("Defensive systems", shared by four coaches); and CSD3 ("Defensive technical-tactical action aspects", shared by all coaches).

Discussion

This study aimed to identify the aspects that structure the defensive phase of beach handball and analyze how these elements are organized in the context of the game through the opinion of coaches. It was possible to identify three main aspects: numerical asymmetry, defensive systems, and the group and individual technical-tactical actions. The coaches addressed the complexity of the organization and structuring of the defensive phase of beach handball and revealed contents that should be addressed throughout the teaching-learning process.

Considering numerical asymmetry as an initial condition in beach handball, the region occupied by the specialist and its characteristics directly influence the choice of defensive systems and the use of different defensive skills and technical-tactical actions by the defenders, as

Table 1 - Central ideas (CI) and collective subject discourses (CSD) referring to the structuring of the defensive game.

CI-1: Numerical asymmetry (S1, S2, S3, S4, S5)CSD1: Defense is very important[S1], because we are outnumbered[S1,S2,S4]. Most of the time it's three defenders against four attackers[S2,S3] with the goalkeeper, which is the most determining issue and influences the disadvantage concerning the attack[S3]. If the opposing team has a good offensive view, they will be able to see who is left, so it is important to worry about superiority[S1]. Equality happens, 3x3, your defense must be smart when you are numerically superior because you can't let the opposing team score goal with three or two[S2].

CI-2: Defensive systems (S1,S2,S3,S4)CSD2: We can have various types of defensive systems: 0:3 a little more advanced, 1:2 with two advanced players and one more backward[S4], 2:1, 3:0 is the most common we use[S1,S4] and there is also the man to man who all three have been marking on the entire court, even though there is one less player[S4]. The defense can be posted/positioned, floating/advanced[S1,S3]. One player can go up to individualize the specialist[S3, S4], who is the athlete who by nature the goal score two points[S3], or an athlete who overpower the attack even having one less player in defense[S4]. Or stay on a fixed defender and two go away inhibiting the athletes who theoretically have the most potential[S3]. This is often used when teams have a clear deficiency, for example, one side doesn't know how to spin and has difficulty going to an inflight, so you leave room for that attacker understanding when he receives you will have the block positioned to nullify his action[S3]. They must learn and pay attention to space they may be leaving[S2]. We have to know how to mark in the zone with one less player, we have to know the zone we are doing, know how to position defensively[S2]. It has to be very close [*the distance between the defenders*], the three markers very dynamic, because there will always be one left, so you have to let them make mistakes[S1].

CI-3: Defensive skills and technical-tactical actions (S1, S2, S3, S4, S5)CSD3: You must be very fast displacements[S1,S2,S4,S5]: sideways, backwards, forward to mark, steal a ball or make a lunge[S2]. Players try to occupy, close spaces as quickly as possible[S5]. Try to mark two players is always very hard! Always you are marking in a 1x2 situation, then the concern is the very fast displacements[S1]. It has the double-up, the man-to-man defensive systems marking kinda close to the court. Coverage is also very important in defense[S4]. In beach handball, you can jump into the area to block[S2,S4] and defend the ball helping the keeper[S5]. Defensive blocking is one of the primordial actions in the defensive system, we use a lot[S1,S2,S3,S4,S5]. In defense positioning[S2,S4] you have to think about closing a shot angle on the pitch for the goalkeeper to try to save on the other[S1]. The player has to be well prepared physically and defensively[S4], because if he realizes that the attacker has filled his space you already have to prepare to use defensive blocking, which is the first action, whether in a spin, inflight or specialist shot[S1]. The question of timing for blocking has to work with the attacker's shot to provide the error because in the beach handball you cannot touch the opponent; so you have to work the displacement between the player and the goal[S1]. When blocking happens the other defenders should also be alert if the attacker's option is to find another partner to pass the ball[S3].

seen in the previous studies[2,3]. Thus, the numerical asymmetry is hierarchically superior to other aspects for the structuring of the defensive phase (Figure 1). Numerical asymmetry appears at the bottom of the pyramid as it is the main aspect for the choice and organization of defensive systems and technical-tactical means. Numerical asymmetry is represented by situations of defensive numerical inferiority (3 vs. 4) caused by the goalkeeper replacing an attacker when ball possession is recovered[2,8].

Defenders should also be concerned about the specialist (CSD1)[2], who plays as a court player in most of the team's positioned attacks[1,2]. In CSD1, coaches relate the specialist is decisive during defensive numerical inferiority situations, and its positioning demands the adequacy of the defensive system. Their presence implies defenders to pay attention to the position of more than one attacker and their possible trajectories, trying to find numerical equality in the ball side and preventing situations that pro-

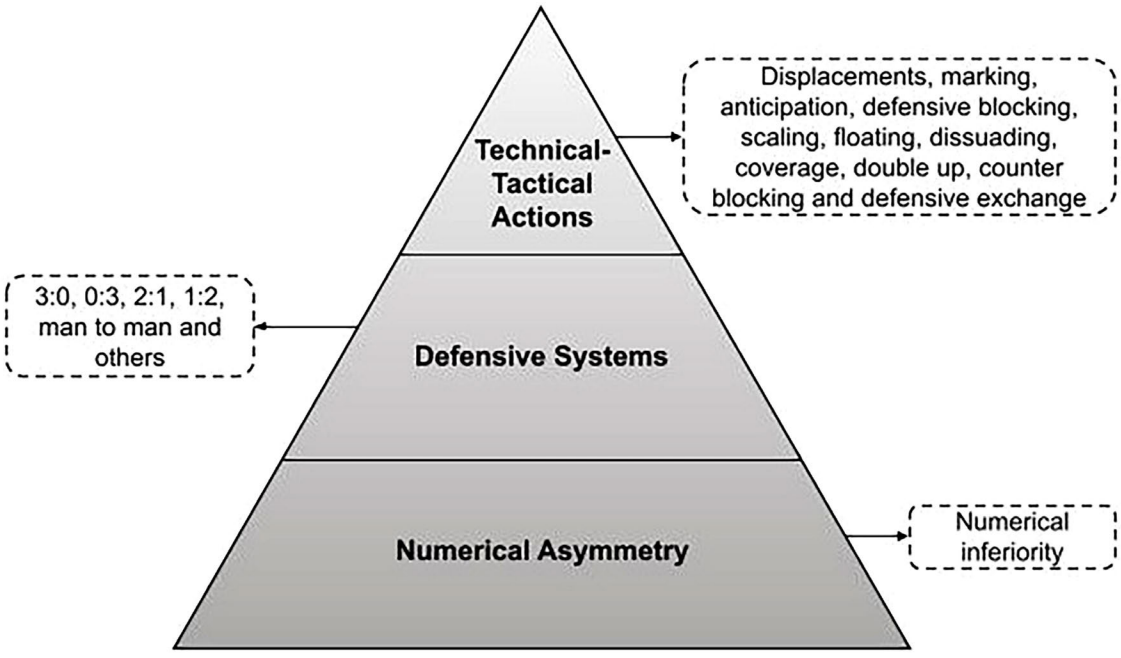

Figure 1 - The structuring elements of defensive phase in Beach Handball.

vide higher scoring[2,3]. CSD1 reports possible situations of numerical equality (3 vs. 3) that occur due to player exclusion[2], and require greater effectiveness of defenders for highlighting direct opposition relations.

Defensive systems are in the middle of the pyramid (Figure 1), as CSD2 revealed the organization of players in the zone, combined, and man-to-man systems. The variety of actions and characteristics of attackers influence the various forms of organization of defenders because in some moments it is more advantageous to mark more closed and others more openly[18]. The 3:0 defensive system is the most used in the beginning and end of the defensive phase (as described in CSD2), followed by the 2:1 with the defender of the second line alternating between the center and wing attackers. The 3:0 system is probably the most likely due to the defensive numerical inferiority, as defenders are positioned close to the area to hinder central throws and induce side shots (with limited space and/or unbalanced attackers)[7,9].

CSD2 also reports situations in which teams are in numerical equality, which is conducive to teams adopting deep defensive systems (such as 0:3 and 2:1) to pressure attackers, cause errors and regain the ball possession[7,9]. If it is not possible to regain the ball possession, the intention is to induce the throwing of advantageous conditions for the defense[9]. In this speech situations of combined defensive systems were observed. It highlights aspects relevant to defensive situations in numerical inferiority in handball, such as the focus on actions in an athlete who overpower the attack and the induction of the throw by the less skilled attacker, also identified in CSD2[12,18]. The full-court man-to-man defense[9,18] was also mentioned during the speech, even with the defense in numerical inferiority.

The defensive skills and technical-tactical actions (CSD3) manifest from the numerical relationship and the defensive system used. Therefore, CSD3 revealed the defensive skills and the group and individual technical-tactical actions as structuring principles for this phase of the game and are presented at the top of the pyramid (Figure 1). Although the importance of theoretically hierarchical skills is highlighted, it is understood that only these do not solve the problems presented by the game[19]. One example refers to the defensive block, which was highlighted by CSD3 and is closely related to the attacker's throw and the goalkeeper's[3]. Therefore, this discourse characterizes the skill elements and the group and individual technical-tactical actions that emerge from the relations between teammates and opponents.

Defensive skills that stand out in the beach handball are the counter-spin and counter-fly which are attempts to prevent the spin shot and inflight shot, respectively[3], in opposite to the offensive skills (spin and inflight shots)[2]. The skill elements and defensive technical-tactical actions listed by the CSD3 (such as blocks and displacements) are not exclusive to beach handball and are frequent in other team sports. The CSD3 also verified the proximity to handball-specific elements (such as double up, coverage, and floating)[2]. Defenders should prioritize mutual help and cover actions to make it difficult to throw in the central area of the court and to induce wing shots (where defenders are more likely to block).

Other technical-tactical actions present in beach handball and handball, such as scaling, defensive exchange, counter block, dissuading, and coverage[10,12] were not mentioned by the coaches. These actions are important for good defensive performance, as the variability of defensive actions performed synchronously and at the right time hinders offensive actions and anticipation processes by attackers[12]. Proximity to handball reveals perspectives for the teaching-learning process in beach handball, as well as guidelines for defenders in numerical inferiority situations[18].

Some games have greater proximity due to the rules, in which relationships respect the standard dispositions of complex unity - the game[20], with transferable actions and skills between handball and beach handball, a concept called *transfert*[19]. Learning elements relevant to games with similar characteristics enables a positive transfer of learning[20], either from handball to beach handball or vice versa, as shown in different excerpts of the CSD.

Conclusion

The reflections pointed that the defensive phase in beach handball is organized respecting three interrelated and hierarchical structures: numerical asymmetry, defensive systems, and technical-tactical actions. It is concluded that understanding the organization of this phase of the game, and the hierarchy of its contents helps the coaches in the systematization of the teaching-learning process in different age groups, in order to develop the specific aspects of beach handball. It does not intend to end discussions on this issue, it is expected that other studies will be able to investigate a larger number of coaches from different regions of the country to broaden the debate on this topic. It was also possible to produce subsidies for future quantitative and qualitative investigations that aim to deepen the debate about the defensive phase of beach handball and its organization. Complementarily, performance analysts can leverage their analysis with the information produced in this study to structure different game investigation models, as well as direct the information specific to the structure of defenders.

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Manuscript received on June 25, 2020
Manuscript accepted on January 2, 2021