

Analysis of technical-tactical factors in beach volleyball: a systematic review

Análisis de los factores técnico-tácticos en vóley playa: una revisión sistemática

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Abstract

The development of an effective performance is determined by a multidimensional character, being a combination of physical, technical, tactical, and psychosocial qualities. Sport technique is a fundamental aspect in the improvement process, influencing other aspects such as tactics. In beach volleyball, due to its sequential character, it is essential to study each of the technical actions. The aim of this study was to carry out a systematic review of the different articles published on the analysis of beach volleyball and to identify the criteria used for the analysis of technical-tactical components. The PRISMA guidelines were followed for this review. The databases PubMed, Web of Science and SportDiscus were searched. Based on the criteria, 33 articles were included. The results show a tendency towards the specific analysis of terminal actions versus continuity actions. The power serve was the most used in the men's category. In women's teams, the standing serve was the most used. The forearm reception was the most frequent. Women's teams tended to use forearm set more than men's teams. The spike was the most used in the men's category, while in the women's category it was the shot. The line block was the most used. Diagonal defense was the most used and effective.

Keywords: game analysis, performance, observational methodology, efficacy.

Resumen

El desarrollo del rendimiento eficaz viene determinado por el conjunto de cualidades físicas, técnicas, tácticas y psicosociales. La técnica deportiva resulta fundamental en el proceso de mejora contando con gran influencia sobre otros aspectos como la táctica. En vóley playa, debido a su carácter secuencial, es necesario el estudio de cada una de las acciones técnicas. El objetivo fue realizar una revisión sistemática de los diferentes trabajos publicados sobre el análisis del vóley playa e identificar los criterios utilizados para el análisis de componentes técnico-tácticos. Para la presente revisión se siguieron las directrices PRISMA. Se realizó la búsqueda en las bases de datos PubMed, Web of Science y SportDiscus. En base a los criterios se incluyeron 33 artículos. Los resultados muestran una tendencia hacia el análisis específico de las acciones terminales. El saque potente fue el más utilizado en categoría masculina, mientras que en femenino fue el saque en apoyo. La recepción de antebrazos fue más común. Los equipos femeninos tienden más a la colocación de antebrazos que los masculinos. El remate potente fue el más utilizado en categoría masculina, mientras que en femenina fue el remate palmeado. El bloqueo a la línea y la defensa diagonal fueron más utilizados.

Palabras clave: análisis de juego, rendimiento, metodología observacional, eficacia.

Introduction

Nowadays, sports performance is an important area of investigation in sports science (Andreea-Georgiana et al., 2020). This is the result of a sports practice or activity. However, it is important to consider all the different components, such as physical, technical, tactical, and psychosocial qualities that can be trained and/or learnt (Farley et al., 2020). Therefore, we must analyse the different components taking into account the specific characteristics of the sport in question.

The sport technique is a series of sequential movements made in an effective way to solve a specific motor task (Martin et al., 2007). It is one of the pillars of performance since its improvement means a rise in the movement efficacy. It also has a strong link and influence on other aspects such as tactic (Andreea-Georgiana et al., 2020). Moreover, we should pay attention to the positive link that exists between the physical qualities of an athlete and a better improvement of the technical aspects. This benefits the training process (Farley et al., 2020).

This way, the analysis of technical actions can be an important indicator of success, giving patterns and tendencies of performance, and contributing to an improved training (Liu et al., 2016). This is the reason why the analysis and evaluation of sport technique should be considered a tool that allows us to have useful information to adjust the improvement process of the requirements of a certain sport, and the athlete's characteristics (Izquierdo & Redín, 2008).

It is therefore necessary to know and describe the intrinsic characteristics of the studied sport first, to then proceed to its analysis and have optimal results.

Beach volleyball is considered a sport where two teams of two players each, divided by a net and on a sand surface, compete (Natali et al., 2017). The court is 8x8m in size. The games are a best of three set format where the first two sets are played to 21 points and the third set (tie break) is played to 15 points (FIVB, 2016).

Beach volleyball has a sequential and cyclic character where we can distinguish two plays: complex 1 (KI) or side out and complex 2 (KII) or counterattack (Giatsis et al., 2015; Medeiros et al., 2017; Pérez-Turpin et al., 2019). Within these two plays are the six basic actions of beach volleyball: the serve, the reception, the setting, the attack, the dig and the block (Palao et al., 2019; Pérez-Turpin et al., 2019).

Because of the rapid increase in popularity of beach volleyball, the analysis of performance parameters is now an essential tool to control the athletes' training (Griego-Cairo et al., 2016). The need to know the performance factors is even higher due to the high level seen in competitions and, this is the reason why a strong development of skills is needed to be successful (Griego-Cairo et al., 2016).

The study of each technical action in beach volleyball, will give relevant information to achieve an optimal

performance (López-Martínez et al., 2018; Valladares et al., 2016). Bearing this in mind, the objective of this study was to do a systematic review of all the different works that have been published about beach volleyball and identify the criteria used for the analysis of technical-tactical components.

Methods

Study design

A bibliographic revision of different databases of sports science was carried out. For the study to have a better consistency and scientific rigour, PRISMA directions were followed (Urrútia & Bonfill, 2010),

Investigation strategy

Different search engines were used, such as PUBMED, Web of Science and SportDiscus. For the search, we used the following strategy: *"Beach volleyball" AND (psychology OR decision making OR technique OR tactic OR performance OR game OR efficacy OR analysis OR game observation)*.

Inclusion and exclusion criteria

Studies were excluded considering the following criteria: a) the language they were published in- we excluded those that were not written in English or Spanish; b) the accessibility to the whole document - we excluded those we did not have full access to; c) revision of title and synopsis - we excluded those that were not relevant to our objectives.

The main inclusion criterion was the methodology used for the study. We included those works where observational methodology was used for the analysis of technical-tactic aspects.

Works selection process

The reading of the different titles and synopsis happened first. This was followed by a systematic reading of the whole text of 134 articles (33 of these followed under the inclusion criteria and 92 had to be excluded because they were duplicated). Finally, and once conceptual, methodological, and statistical criteria were applied, 98 studies were eliminated (see Figure 1)

Results

Sample characteristics

Around 41.13 games were analysed in the different articles. The average of technical actions analysed per article was 3131.90. In terms of genders, 24 articles within the men's category were found and 16, within the women.

Works related to the serve

In the men's category, the power serve prevails (Buscá et al., 2012; Tilp et al., 2006), while it is the float jump serve the most common in women (Koch & Tilp, 2009a; Tilp et al., 2006) (Table 1).

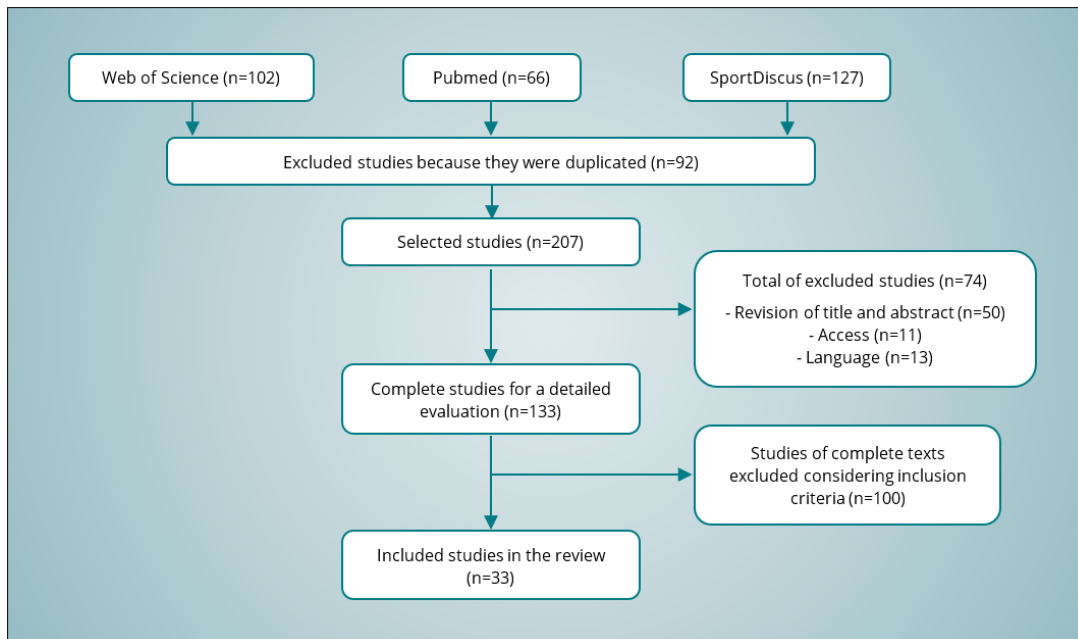


Figure 1. Flow chart

Works related to the reception

The efficacy of reception has a direct influence over the attack (Koch & Tilp, 2009b; Palao et al., 2019). Palao et al. (2019) indicate that the most used type of reception was the forearm (Table 2)

Works related to the setting

Pérez-Turpin et al. (2019) suggest that female teams and those of lower categories tend to use the forearm setting

more. Moreover, winning teams present more efficacy than those with less success (Simac et al., 2017) (Table 3).

Works related to the attack

Male teams tend to use the spike more often (Giatsis et al., 2015; Koch & Tilp, 2009a; Tilp et al., 2006), while the shot is more frequently seen in female teams (López-Martínez & Palao, 2010; Tilp et al., 2006). López-Martínez & Palao (2010) also suggest that the most effective attack is the one directed to the deep and side areas of the opponent court (Table 4).

Table 1. Synopsis of articles relating to the action of the serve

Author/s	Results
Palao et al. (2019)	The power jump serve was the most limiting for the receivers
López-Martínez & Palao (2009)	The jump serve caused a greater number of errors, points and actions that limit the opponent. The jump serve and the standing serve obtained similar levels of efficiency. The zone between the two players is where the most effective direct serve was produced. The players used both the jump serve and the standing serve.
Gea-García & Molina-Martín (2013b)	The finalist pairs had a lower number of serving errors, as well as a higher percentage of direct points. Serving in support is associated with fewer errors, as well as more direct points. The jump serve was related to a higher number of errors.
Buscá et al. (2012)	In the men's teams the jump serve was predominant, while in the women's teams there was similar use of all three types of serve. There was a higher percentage of serves when the speed of the serve was slower. When the speed of the serve was higher, the number of errors increased. In the women's category, the higher ranked teams had higher serving speeds.
Gea-García & Molina-Martín (2015)	In national teams, the tendency is to serve towards the centre of the opponent's court. In international teams, the most frequently used serves were those with greater depth and directed to the sides of the opponent's court.
Koch & Tilp (2009b)	No differences were found between the serving techniques with respect to generating difficulty or error in the opponent's reception.
Koch & Tilp (2009a)	In the women's category, the most used serve was the floating serve in support, while in the men's category it was the powerful serve. As for the quality criterion, differences were found in the serving and attacking actions.
Kotev (2014)	The Bulgarian players had low efficiency in serving. 12% of them were serve errors, as well as 62.95% were inadequate serves.
Pérez-Turpin et al. (2019)	Serving actions show differences according to gender and age.
Jménez-Olmedo et al. (2012)	The power serve is the most used in the first period (89.7%) and its use decreases throughout the set, being less used in the third period (27.3%). The use of the float serve and the jump serve increases throughout the set. The float jump serve is the most used in the last period of the set (49.4%).
Jménez-Olmedo et al. (2014)	The power serve was the most used serve (46.2%), with the second most used serve being the float serve (40.5%). The use of the power serve decreases as the set progresses (84.1% - 4.8%). The use of the float serve increases throughout the set (13.5% - 40.2%).
Smac et al. (2017)	The successful players obtained higher efficiency values in the actions compared to the less successful players. A lower efficiency coefficient was obtained in the serve actions (2.21) in relation to the other technical actions.
Medeiros et al. (2017)	In all age categories, the winning teams scored the highest number of serve points.
Palao & Ortega (2015)	The winning teams had higher efficiency values in all the actions analysed. Winning teams in the serve action score more points (5.14%) than losing teams (3.42%).
Giatsis & Zahariadis (2008)	The losing teams made more serve and attack errors.
Tilp et al. (2006)	The power serve and the jump float serve were the most used in the men's category (74%). In the women's category it was the float serve (35%).
López-Martínez et al. (2020)	The jump float serve was the most used (44.85%), followed by the standing serve (32.8%) and the power jump serve (32.8%). The powerful jump serve involved a higher error rate. Both standing serves (56%) and jump serves (>90%) were mostly performed close to the line. Regardless of the serve technique, the most common direction was the back of the opponent's court (>87%).

Table 2. Synopsis of articles relating to the action of the reception

Author/s	Results
Palao et al. (2019)	The forearm reception was the most used and effective. The effectiveness of the reception was directly related to the effectiveness of the attack and the winning of the point.
Koch & Tilp (2009b)	Reception efficiency did influence the type and efficiency of the attack. With good receptions, spike was used, resulting in greater efficiency.
Kotev (2014)	The efficiency coefficient in attack (2.19) is higher than in serve (1.35) and reception (1.70). In the reception action, 70.04% were positive actions.
Seweryniak et al. (2020)	The central area of the court and close to the net (4m x 2m) was the optimal area for directing the reception. The most frequent area for directing the reception in elite teams was the central area of the court at a distance of 1-2m from the net.
Smac et al. (2017)	The lowest efficiency coefficient was obtained in serving (2.21) and blocking (2.62). The highest efficiency coefficients were obtained in setting (3.49) and receiving. The largest differences in efficiency coefficients between successful and less successful players were found in the reception action (3.40 - 3.16).
Palao & Ortega (2015)	The efficiency of the winning teams in reception (90.75) was higher than that of the losing teams (86.32).
Giatsis & Tzetzis (2003)	In 9x9 dimensions, the reception action was decisive, finding greater efficiency in winning teams. Losing teams committed a greater number of errors in reception.
Tilp et al. (2006)	The front reception position was the most used in both categories.

Table 3. Synopsis of articles relating to the action of setting

Author/s	Results
Pérez-Turpin et al. (2019)	In the setting action, women's teams used the forearm pass more than men's teams. In terms of age, younger players tended to use forearm pass more than older players.
Smac et al. (2017)	The lowest efficiency coefficient was obtained in serving (2.21) and blocking (2.62). The highest efficiency coefficients were obtained in setting (3.49) and reception. The greatest differences in the efficiency coefficients between successful and less successful players were found in the setting action (3.64 - 3.34).

Works related to the block

Tilp et al. (2006) show that the block is more frequently used in male teams than in females. It is in the later where we can observe a bigger number of mistakes in blocking (Pérez-Turpin et al., 2019). Lineal and diagonal block are very similar in efficacy (Jiménez-Olmedo & Penichet-Tomás, 2017a), while the lineal block is more commonly seen in the defence (Seweryniak et al., 2013) (Table 5).

Works related to the dig

Tilp et al. (2006) suggest that defence strategies are more commonly seen in female teams. Top players direct the defence ball to the central area closest to the net (García & Molina-Martín, 2014). This is the optimal area for

defence (Seweryniak et al., 2020). Seweryniak et al. (2013) show that the most used strategy was the diagonal defence (Table 6).

Works related to tactical aspects

Medeiros et al. (2017) show that the performance of winning teams is greater during counterattack actions. Moreover, there is a better performance in matches that end in 2-0 (Giatsis & Zahariadis, 2008). In terms of defensive system, Jiménez-Olmedo et al. (2016) suggest that it is more common and effective the system where the player on the right is the one defending (sistema 2:1). Giatsis & Tzetzis (2003) suggest that on 9x9 courts the reception is essential for the performance (Table 7).

Table 4. Synopsis of articles relating to the action of the attack

Author/s	Results
López-Martínez & Palao (2010)	The shot was the most used in both categories, obtaining similar efficiency values to the spike. The lateral zones of the court were the most used by the men's teams, while in the women's category it was zones 2 and 3. In the men's teams, the spike was more effective in zone 4 while the shot was in zone 2.
Giatsis et al. (2015)	The spike was the most frequently used in both phases of play. In both phases, the most frequent efficiency values were the point score or the error on the shot. The point scoring values in attack were similar with both perfect and limited receptions.
Koch & Tilp (2009b)	No relationship was found between setting position and type of attack. Reception efficiency did influence the type and efficiency of the attack. With good reception, the spike was used, obtaining greater efficiency.
Koch & Tilp (2009a)	Differences were found between the techniques used in the women's and men's categories. In the women's teams, the frequency of use of the spike and the shot was similar, while the men's teams tended to use the spike more frequently.
Kotev (2014)	The efficiency coefficient in attack (2.19) is higher than in serve (1.35) and reception (1.70).
Künzell et al. (2014)	The call is higher in women's competition than in men's competition. In the men's category, when there was the call, the effectiveness of the attack is 63%. In the women's category, when was the call, the attacking success is higher (61.5%) compared to when there is no call (35%).
Cortell-Tormo et al. (2011)	Male players used more offensive than defensive patterns of play. Attacking and positioning were the most repeated movement patterns.
Giatsis et al. (2019)	The most commonly used techniques were bow-and-arrow low (51.6%) and bow-and-arrow high (37.4%). Other arming techniques such as circular (6.6%) or snap (4.4%) were less used. The use of different techniques made no significant difference to performance.
Smac et al. (2017)	The largest differences in efficiency coefficients between successful and less successful players were found in the attacking action (3.09 - 2.87).
Medeiros et al. (2017)	Similar patterns were obtained in all three age groups. In all age categories the winning teams scored more attacking points.
Palao & Ortega (2015)	In attacking action, the winning teams scored a higher percentage of points (60.24% versus 50.92%).
Giatsis & Zahariadis (2008)	The losing teams made more attacking errors.
Tilp et al. (2006)	In the women's category the shot was the most common (69%), while in the men's category it was the diagonal spike (33%).

Table 5. Synopsis of articles relating to the action of the block

Author/s	Results
Jménez-Olmedo & Penichet-Tomás (2017a)	The most used blocking actions were line blocking, net exits and diagonal blocking. The line blocking and diagonal blocking actions presented similar efficiency values. Less common actions such as V blocking and fighting were found to be more effective.
Gea-García & Molina-Martín (2013a)	In national competition teams, the delayed defensive system predominated, while in international teams the advanced defensive system predominated. National teams committed more errors in blocking than international teams.
Pérez-Turpin et al. (2019)	Differences were shown according to gender and age. In the blocking action, the female teams showed a higher number of errors. Also, younger players showed less effectiveness in blocking.
Cortell-Tormo et al. (2011)	Male players used more offensive than defensive patterns of play. Blocking and defending were the most used defensive patterns.
Natali et al. (2017)	The blockers made a greater number of jumps than the diggers.
Smac et al. (2017)	The lowest efficiency coefficient was obtained in serving (2.21) and blocking (2.62). The highest efficiency coefficients were obtained in setting (3.49) and reception.
Seweryniak et al. (2013)	The most used defensive system (45%) was the line blocking system with the defender in the diagonal zone. The most effective defensive system (40%) was where the blocker leaves the net to defend the line and the defender moves to the diagonal.
Tilp et al. (2006)	In the men's category there was greater use of the blocking action, while in the women's category the defence action predominated.

Table 6. Synopsis of articles relating to the action of the dig

Author/s	Results
Gea-García & Molina-Martín (2014)	The national players defended closer to the net, while the international players defended more in the centre of the court. National players directed a greater number of defences out of bounds, while international players defended closer to the net. No differences were found in the defensive pattern in the second line depending on the level of play of the pairs.
Jménez-Olmedo & Penichet-Tomás (2017b)	Active static defence, where the defender makes direct contact with the attacking ball without requiring any movement, was more effective. Active defensive actions, where the defender intervenes directly by touching the ball, were less common (36.2%). Defender intervention was mostly passive (63.2%) but was not the most effective intervention. A ratio of ¼ counterattack per attack received was established. 23.1% of defensive actions ended in counterattacks, while 76.9% were not counterattacks.
López-Martínez et al. (2018)	The forearm defence was more effective. The opponent's attack influenced the effectiveness of the defence, increasing when a shot is made and decreasing when the attack is directed to the corners.
Seweryniak et al. (2020)	The central area of the court and close to the net being the 4m x 3m area of the net was the most optimal in defensive action.
Natali et al. (2017)	Blockers made a greater number of jumps than defenders.
Seweryniak et al. (2013)	The most used defensive system (45%) was the line blocking system with the defender in the diagonal zone. The most effective defensive system (40%) was where the blocker leaves the net to defend the line and the defender moves to the diagonal.
Tilp et al. (2006)	In the men's category there is greater use of the blocking action, while in the women's category the defence action predominates.

Table 7. Synopsis of articles relating to tactical aspects

Author/s	Results
Jménez-Olmedo et al. (2016)	The system of play most used (67.2%) and which was most effective was the 2:1 (system where the player on the right is the defender). The effectiveness of both defensive systems (1:2 - 2:1) evolved positively throughout the set.
Medeiros et al. (2017)	Similar patterns were obtained in the three age groups. The winning teams performed better in counter-attacking actions (K2).
Giatsis & Zahariadis (2008)	In matches with a 2-0 result the winning teams performed better in all technical actions than the losing teams. In matches with a 2-1 result there were no significant differences in the performance of technical actions between winning and losing teams. The winning teams scored 5.8 points more than the losing teams.
Giatsis & Tzetzis (2003)	In the 8x8 field, the winning teams were more efficient and had fewer attacking errors than the losing teams. In 9x9 dimensions the reception action was decisive, finding greater efficiency in winning teams.

Discussion

For this study we concentrated on works from the last 18 years due to the change in rules that happened in 2001. The study mainly concentrated on identifying the variables investigated in different works. This allowed us to identify a clear difference between works analysing technical and those analysing tactical questions.

Due to the noticeable difference in the number of articles for men and women, data must be carefully analysed. The different size samples in the articles could influence the level of evidence in some of the results.

In terms of technical actions in beach volleyball, while studying the serve, we found out that the power serve prevails in male teams (Buscá et al., 2012; Tilp et al., 2006). In the research of Tilp et al. (2006), there was a contradiction, so both the power serve, and the jump float serve were equally used. The reason could be that the players analysed in the work of Buscá et al. (2012) had a higher level. The power serve needs a better technical control, since it is one of the most risky serves.

Regarding women's teams, we found a difference in results. This could be the consequence of the game's evolution, since the analysed works belong to different years. The most recent works by López-Martínez et al. (2020) show that the jump float serve was the most frequent, while the power serve has a higher rate of error (Gea-García & Molina-Martín, 2013b; López-Martínez & Palao, 2009; López-Martínez et al., 2020). The reason for this could be the risk that players take, trying to drive the ball with a greater strength and speed to make the reception more difficult to the rival team, or to get a direct point. This agrees with the results from Buscá et al. (2012), where it is shown that when the ball is served with a greater speed, the number of errors is likely to go up.

When serving, the central point was the most frequent destination and where teams got the most points (Gea-García & Molina-Martín, 2013b; López-Martínez & Palao, 2009). This was also in the middle between two players. This area creates a greater uncertainty in players, since they have to make a decision in a very short time.

In terms of reception, the forearm reception was the most used and efficient (Palao et al., 2019). In this technique, the player has a wider contact area with both forearms than if they were using any other technique. When the contact area is wider, there is more control over the ball. This may be the reason why there is such a tendency in the side out.

Such reception has a direct impact over the attack (Koch & Tilp, 2009b; Palao et al., 2019). In other words, a very efficient reception will result on more possibilities of getting a point with the attack. This is the result of the sequential and cyclic characteristics of beach volleyball (Giatsis et al., 2015; Medeiros et al., 2017; Pérez-Turpin et al., 2019). This agrees with the results from Giatsis & Tzetzis (2003), Palao & Ortega (2015) and Simac et al. (2017), where they show that winning teams had better efficiency values.

In works that analysed the setting, they found that women's teams tend to use the forearm pass more than men (Pérez-Turpin et al., 2019). This could be the consequence of the difference in game between both categories. Due to the lack of studies in the female category, the real reason for this tendency is unknown. It would be interesting to analyse whether the difference in the way of playing between both genders could be one of the reasons.

Regarding the technical action of the attack, the spike was the most used by male teams (Giatsis et al., 2015; Koch & Tilp, 2009a; Tilp et al., 2006). On the other hand, in the research of López-Martínez & Palao (2010), the results were contradictory, and the shot was the most used. This could be the consequence of taking different aged athletes for the sample, since when they are older, they tend to use a wider variety of attacks (Medeiros et al., 2017)

In the female category, the results of López-Martínez & Palao (2010) and Tilp et al. (2006) show that the most used attack is the shot. These results disagree with those from Koch & Tilp (2009a), where the frequency of the spike and the shot is very similar. These differences suggest that there may be other external factors that could influence the type of attack used by female players.

Attacks directed to the deep and side areas are the most efficient (López-Martínez & Palao, 2010). These are the farthest areas from the players and therefore, athletes must move around a longer distance, and they have less time to defend those attacks.

Regarding works analysing the blocking Jiménez-Olmedo & Penichet-Tomás (2017a) found that the most common blocking is the blocking line followed by the blocking cross-court and the swing blocking. On the same line, Seweryniak et al. (2013) show in their study that blocking line is the most frequent. This could be because blocking line is easier when the player is positioning himself. In addition, the hand position is easier when they try to make a solid block.

In the female category, the blocking action is less used, and there is a higher rate of error (Pérez-Turpin et al., 2019; Tilp et al., 2006).

The reason may be because in women's teams, there is a tendency of attacking with shots. These types of attack have a parabolic trajectory, that may be difficult to stop with the blocking (Mesquita & Teixeira, 2004). In the male category, their game has more power and explosiveness.

It was in the female category where the use of the defence action was used more frequently (Tilp et al., 2006). This agrees with those results indicating that in the female category there was a lower use of blocking (Tilp et al., 2006). Less blockings means that the importance of the K2 is on the defence.

On the other hand, the cross-court defence was the most used and most efficient (Seweryniak et al., 2013). This could be linked to the fact that blocking line is also the most used one. Therefore, since the blocker must cover the line area, the defender has to move to cover the cross-court.

Looking at the analysis of tactical aspects, Medeiros et al. (2017) showed that the winning teams are the ones that have a better performance over K2 or counterattack. This could be because the efficiency of both the winning teams and the losing teams was similar during the side out. Therefore, the performance in the counterattack made the difference.

In this work, we have seen a clear tendency of analysing final actions rather than continuity actions. The reason behind it could be that those are the actions that will give a point. The serve and the attack actions are the most well studied in beach volleyball.

Conclusions

Looking at the objectives and results, the list of conclusions for this analysis is as follows:

1. The power serve is the most used in men's teams, while the jump float serve is the most used in women. The most frequent directions for these were the deep end of the court and the area between players.
2. The forearm reception is the most frequent and efficient. In addition, the efficacy in reception has a direct impact in following actions such as the attack.
3. Female teams have a greater tendency of using forearm position than male teams.
4. The most used attack is the spike in men and the shot in women. The most common direction is the deep and side areas of the court.
5. The blocking line is the most used. In female teams there are more errors and blocking is less used than in male teams.
6. The cross-court defence is the most efficient and most used in women's teams. This action is more used in the female category.
7. The system where the defender is on the right (2:1) is the most frequent and efficient. The performance in K2 is better in winning teams

As a general conclusion, we have observed that there is a tendency for specific analysis of different actions, giving priority to the final actions rather than the continuity actions. Therefore, for future studies, it would be interesting to analyse technical-tactic actions. This way, we would be able to know the link and influence between continuity and final actions.

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