

Tactical-technical performance in footvolley: validation of an observational instrument

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Abstract - Aim: This study aimed to validate an observational instrument of footvolley's tactics (FtVi) and use it in an empirical investigation of tactical-technical tendencies in high-level footvolley matches. **Methods:** The validation followed five steps: i) design; ii) pilot analysis; iii) content validation; iv) reproducibility; v) empirical study. We analyzed women's and men's matches from the Brazilian Footvolley's Circuit - 2019. Content validity and reproducibility were evaluated with Aiken's V and Cohen's Kappa coefficients, respectively. The Chi-square test of independence was applied to infer about sexes' tactical tendencies. **Results:** The FtVi encompassed the following categories: i) match context; ii) game situation; iii) rally's outcome; iv) game actions. Aiken's V coefficients were greater than 0.90. Intra- and inter-observer reproducibility presented near perfect agreement (0.92; 0.89). Assessment of the game dynamics did not point to a significantly greater proportion of complex II (w: 60.6%; m: 57.5%) than complex I (w: 39.4%, m: 42.5%), $p > 0.05$. The median rallies' length was close to three court exchanges for both sexes. The attack efficiency did not present significantly greater frequency of continuation attacks (w: 70.4.5%, m: 66.8%) in relation to points (w: 19.4%, m: 22.9%), $p > 0.05$. For all attacks and scoring attacks, backcourt and net zone were respectively more frequent. Most frequent techniques were different between sexes and all related to upper body (women - head: 29.7%, shoulder: 23.0%; men - chest: 30.3%, head: 24.8%). **Conclusion:** FtVi successfully supported gathering evidence about footvolley's tactics, which may help coaches' practice. The absence of hands-arm use in the footvolley's techniques may contribute both to longer rallies since steep attacks are limited and, counter-intuitively, to a greater emphasis on upper-body than foot techniques.

Keywords: notational analysis, team sports, performance, complexes, net games.

Introduction

Footvolley is a net team sport¹, originated in the 1960s in Brazil and currently practiced in national and continental leagues². The game is performed in a sand court, combining techniques from beach volleyball and association football^{2,3}. Each team has two players, and the pair has up to three touches on the ball, alternated between players, to cross it over the net to the opposing court. A point is earned when the ball lands on the floor at the opponent's court side (18 meters x 9 meters). The net is 2.0 and 2.2 meters high for women and men, respectively². Techniques are performed with the foot, leg, chest, shoulder, and head. Usually, matches have one or three sets, disputed up to eighteen points with a minimum spread of two points to define the winner².

Scientific literature on footvolley includes a few studies related to morpho-functional analysis of game movements³, injuries⁴, sport initiation⁵, and time-motion analysis⁶. Evidences on footvolley's tactical performance are still missing. However, tactical similarities provide some insights from previous investigations in beach

volleyball⁷⁻¹¹. Both games' dynamics start with a serve, then a reception, set, attack, block, defense, counterattack and so on until the rally's outcome.

Similarly to beach volleyball and volleyball, the actions performed by the players in a footvolley's match may be grouped in sequences with specific tactical meaning denominated complexes^{8,12,13}. A complex comprises the three game actions, maximum, performed by a team and the previous action from the opponent^{8,12,13}. Thus, it defines a particular match context for the respective actions. Complexes may be categorized as I or KI (i.e. a serve and the attack organization after reception) and II or KII (a defense, the attack organization after the defense and so on until the point)^{8,14,15}. Complex I presents more predictable initial conditions, which favors the attack after the serve¹⁵. At the KII, the offensive construction may be more challenging since it occurs after an attack¹⁵.

Inferences on footvolley's tactical tendencies require valid, reliable match analysis procedures which may be accomplished with the development of ad hoc observational instruments^{9,16}. These instruments rely on categorical systems, which aim at providing a framework for

interpreting performance based on the game situations and events, with exhaustive and tactically meaningful categories¹⁷. Observational instruments have been developed for different sportive contexts such as racket sports^{18,19,20}, invasion team sports^{16,21,22}, invasion para-team sports²³ and, particularly net team sports such as indoor volleyball²⁴ and beach volleyball⁹. In these studies, content and empirical validity have been addressed for the most relevant tactical-technical situations and game actions. However, in footvolley there is no evidence of systematization of a valid set of variables to support match analysis, which seems to be detrimental for interpreting tactical-technical features of the game and, consequently, for supporting the coaches' practice.

Thus, the aim of the present study was to validate an observational instrument of footvolley's tactical-technical performance. Complementary, we aimed at using the instrument in an empirical investigation of tactical-technical tendencies in high-level footvolley's matches.

Methods

The study comprises both the validation of an observational instrument for assessing contextual and tactical-technical features of the footvolley and its use in a cross-sectional investigation for comparing tactical-technical differences of high-level women and men footvolley's players.

Validation of the observational instrument

We proceeded with the validation of the footvolley's observational instrument, hereafter denominated FtVi, in five steps^{9,17,24,25}: i) design of a preliminary model of the FtVi; ii) performance of a pilot empirical analysis and preliminary adjustments; iii) establishment of the content validity - analysis of the definition, pertinence, and inclusion of additional variables in the FtVi; iv) FtVi's reproducibility analysis; v) empirical use of the FtVi for assessing footvolley's performance in high-level matches.

First, for the design of the FtVi we discussed the model's parameters within the researchers' team and reviewed the scientific literature on footvolley. The keyword "footvolley" combined with correlated terms (e.g. training, teaching-learning) was used to search in the following databases - Web of Science, Pubmed, Sport Discuss, Google Scholar, Sponet, Scielo, and Dialnet. A total of five peer-reviewed scientific articles were identified. However, none of them presented evidences related to footvolley's tactics. Literature about volleyball and beach volleyball indirectly supported the FtVi's design^{8,9,15,24}. For the first round of external review, we submitted the FtVi to the evaluation of two experts - both with Ph.D. in sport sciences and at least ten years as footvolley's practitioners. We concluded the preliminary design of the FtVi after reaching a consensus with the experts for each cate-

gory of the instrument (four categories and 43 variables - see Results). Experts were blindly consulted for each other.

Second, a pilot was conducted by the research team with the preliminary version of the FtVi. A total of 359 rallies from high-level matches were analyzed. Results were confronted with the experts' consensus previously established in the first step. Another round of discussion was promoted with the same set of experts to adjust inconsistencies detected. Once consensus was achieved after a debate mediated by the researchers, a manual was organized with a systematic presentation of the FtVi's categories: i) contextual variables - related to the tournament and the match; ii) game situation - the rally length and game complexes (KI - the attack organization after service reception; KII - the attack organization after defense and so on until the point; iii) game actions - tactical-technical characterization of each class of game action (e.g. a defense, a set, an attack), including the technique performed, origin and destination of the action, the player involved, and the outcome; iv) rally's result - point, error, opponent's continuation; and efficiency. The established categories aimed at being exhaustive and mutually exclusive (see Results section).

Third, content validity was assessed through a quantitative evaluation of the FtVi's preliminary version. It was conducted with four expert footvolley's coaches (all had Physical Education degree and at least ten years of experience as a footvolley coach at national or international level). Experts were blindly consulted for each other. The four experts were asked to review the FtVi in terms of its definition (i.e. meaning of each category and related variables), pertinence of categories, inclusion (i.e. whether to include other categories/variables in the observational instrument). Definition and pertinence were evaluated on a scale of 0 to 10. Inclusion was an optional indication, applied when the experts considered necessary. [Figure 1](#) displays an excerpt of the experts' query.

We determined the FtVi's content validity by computing the average value of the Aiken's V coefficient from the experts' ratings for each variable²⁶. Afterwards, we generated an updated version of the FtVi and we planned another reviewing round for addressing variables with Aiken's V coefficient less than .80 for its definition or pertinence. Nonetheless, it was not necessary since all variables presented coefficient values above the reference of 0.80.

Fourth, after establishing the FtVi's content validity, we evaluated the intra- and inter-observer reproducibility for the variables' criteria. We assessed the reproducibility with the Cohen's Kappa coefficient test²⁷. Three full matches (269 rallies; 1923 game actions) were analyzed in the reproducibility test. There was a wash-out period of seven days between the first and second rounds of the data acquisition for the test. Individuals who performed the

Game action: Attack

(a) Definition:

Attack is the typical scoring game action and may be performed through one of three circumstances: i) after a set (third ball attack); ii) after a reception/defense (second ball attack); iii) after the opposing serve or attack (first ball attack). Technics: i) head; ii) shoulder; iii) chest; iv) thigh; v) foot *dorsum*; vi) foot medial side; vii) foot lateral side; viii) bicycle; ix) shark; x) eagle.

(Poorly defined) 0 - 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 (Very well defined)

Proposed definition, if the previous one was not clear:

(b) Pertinence: Does it seem pertinent to include the game action "Attack" and its respective techniques as a category to be observed?

(Not pertinent) 0 - 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 (Very pertinent)

(c) Inclusion: Which other variable would you add to the observation instrument for game action "Attack"?

Figure 1 - Excerpt of the questionnaire submitted to the experts' appreciation.

reproducibility test had a Physical Education degree and previous experience with footvolley and performance analysis in sports.

Fifth, we used the FtVi in an empirical investigation in which the instrument supported comparisons of tactical-technical footvolley's tendencies between high-level women's and men's game. Sex differences were examined in terms of complexes, rallies' length, attack efficiency, attacking destinations, and game actions and techniques.

Participants

We analyzed women's and men's semifinals and final matches from the five stages of the Brazilian Footvolley's Circuit - 2019. Analysis encompassed 21 matches (women: seven matches; men: fourteen matches. Some of the women's matches were not available). Video footages were publicly available at the official YouTube channel of the Brazilian Footvolley's Federation. Video footages were standardized, with a full view of the court and adjacent zones. A single observer (Physical Education undergraduate, regional level footvolley practitioner, reliability score with the Kappa Cohen's rate = 0.92) performed all annotations.

Data analysis

Aiken's V coefficient was used to calculate the content validity²⁶. Variables with agreement rates lower than 0.70 - excluded; rates between 0.70 and 0.81 - modified; rates above 0.81 - accepted. Reliability calculation using

Cohen's Kappa coefficient took as reference the intervals: i) 0 - 0.2: slight agreement; ii) 0.21 - 0.4: fair; iii) 0.41 - 0.6: moderate; iv) 0.61 - 0.8: substantial; v) 0.81 - 0.99: almost perfect; vi) 1: perfect agreement²⁷. Chi-square statistics was applied to infer about differences between women (w) and men (m) tactical tendencies in the empirical application of the FtVi. For all Chi-square tests, p-values were calculated for the overall differences in the contingency tables. Individual results that contributed most to the differences found were highlighted based on the values of their standardized residuals. Bonferroni corrected critical value was computed for an alpha level of < 0.05. All statistical calculations were performed using R software (packages: base; tidy; tmap; ggplot2)²⁸.

Results

The validated version of the FtVi encompassed categories related to: i) match context (tournament; competition level; tournament phase; age group; team; set; team points in the set; set result; match result); ii) game situation (team serving; team receiving; rally phase; rally's length: court exchanges); iii) rally's outcome (continuation by the own team, continuation by the opponent team, point, error; complex efficiency); iv) game actions, defined in the sequence.

The serve is the game action performed to start the rally. The serving player may use a sandpile to position the ball when preparing to serve. There were defined two

categories of serves: i) flat - the ball navigates with an uncertain trajectory; ii) rotational - the ball navigates with greater rotation and a more pronounced parabolic trajectory. Serving techniques: i) foot *dorsum* serve (“peito do pé”); ii) foot medial serve (“chapa do pé”); iii) foot lateral serve (“trivela”) - see description and illustration in the Appendix.

The reception is the game action performed to receive the ball after the opponent's serve. Complementary, the defense is the game action performed to receive the ball after the opponent's attack (situation involving a live ball, differently from the serve that starts after a match interruption). Reception/defense techniques: i) head; ii) shoulder; iii) chest; iv) thigh; v) slide (“defesa baixa”); vi) foot *dorsum*; vii) foot medial; viii) foot lateral (“chaleira”).

Setting is the game action performed to prepare the attack, usually occurring after a reception or a defense. Techniques: i) head; ii) shoulder; iii) chest; iv) thigh; v) slide; vi) foot *dorsum*; vii) foot medial; viii) foot lateral.

The first touch correction is the game action in which a player manages to keep the ball live, after a poorly performed reception or defense. It is frequently performed distant from the net and in unfavorable setting circumstances (e.g. quick displacement of the player in the oppo-

site direction of the attacking zone aiming to contact the ball before it reaches the floor, frequently in unbalanced conditions). Techniques: i) head; ii) shoulder; iii) chest; iv) thigh; v) slide; vi) foot *dorsum*; vii) foot medial; viii) foot lateral.

Attack is the typical scoring game action and may be performed through one of three circumstances: i) after a set (third ball attack); ii) after a reception/defense (second ball attack); iii) after the opposing serve or attack (first ball attack). A free pass is an attack in which the main goal is to keep the ball live in the rally after a poorly executed technique in the previous ball contact. Techniques: i) head; ii) shoulder; iii) chest; iv) thigh; v) foot *dorsum*; vi) foot medial; vii) foot lateral; viii) bicycle (see Appendix); ix) shark (see Appendix); x) eagle (“Voo do Águia” - see Appendix).

The block consists in preventing the opponent's attack by intercepting the ball's trajectory close to the net. Techniques: i) head; ii) shark; iii) eagle.

Table 1 presents the final version of the FtVi, with the variables related to context, match situation, rally's outcome, and game actions.

Results for the content validity are displayed in Table 2. All variables presented Aiken's V rates ≥ 0.90 .

Table 1 - FtVi: categories and variables.

Match context	— Tournament — Competition level* — Tournament phase** — Age group* — Team	— Set — Team points in the set — Set result — Match result
Game situation	— Teams serving — Team receiving	— Rally's complex — Rally length: court exchanges
Rally's outcome	— Rally outcome	— Complex efficiency
Game actions		
Serve	— Player involved — Serve technique — Execution zone	— Destination zone — Ball trajectory* — Serve result
Reception/defense	— Player involved — Reception/Defense technique	— Execution zone — Destination zone — Reception/Defense result
Set	— Player involved — Set technique	— Execution zone — Destination zone — Set result
1st touch correction	— Player involved — 1st touch technique	— Execution zone — Destination zone — 1st touch result
Attack	— Player involved — Attack technique — Execution zone	— Destination zone — Attack result
Block	— Player involved — Block technique	— Execution zone — Destination zone — Block result

*Categories suggested or modified by the first set of experts - first and second steps of the validation process.

**Categories suggested or modified by the second set of experts - third step of the validation process.

Table 2 - Rates of Aiken's V test for definition and pertinence of the FtVi's categories.

Variables	Aikens's V	
	Definition	Pertinence
Match context	0.90	1.00
Game situation	0.93	0.98
Rally's outcome	0.98	1.00
Game actions		
Serve	0.93	0.98
Reception/Defense	0.95	0.98
Set	0.98	0.98
1st touch correction	0.95	0.90
Attack	0.95	1.00
Block	1.00	1.00

Neither categories nor its variables were excluded after definition and pertinence assessment. Intra- and inter-observer reproducibility resulted in almost perfect agreement (Kappa Cohen's rates - intra-observer: 0.92; inter-observer: 0.89).

Footvolley's game dynamics was characterized through the proportion of complexes, rally's length and efficiency rates for both sexes (Figure 2). Figure 2 - Part A displays a greater proportion of complex II (women: 60.6%; men: 57.5%) than complex I (w: 39.4%, m: 42.5%), without any significant difference between sexes (Chi-squared = 2.7307, p = 0.10). Part B displays the distribution of rallies in terms of the number of courts exchanges until the point. For both sexes, the median was close to three court exchanges, and 25% of the rallies lasted until seven courts exchanges, besides outliers going up to more than ten courts exchanges. In Part C, the attack efficiency result indicated greater proportion of continuation attacks for both sexes (w: 70.4%, m: 66.8%) in relation to points (w: 19.4%, m: 22.9%) and errors (w: 10.1%, m: 10.2%), also similar for both sexes (Chi-squared = 4.8371, p = 0.09).

Figure 3 displays the relative frequencies of attacking zones for women and men. For all attack's outcomes (Figure 3 - Parts A and B), offensive actions had significantly distinct destinations among all court zones (Chi-squared = 45.588, p < 0.001). Middle back court was a

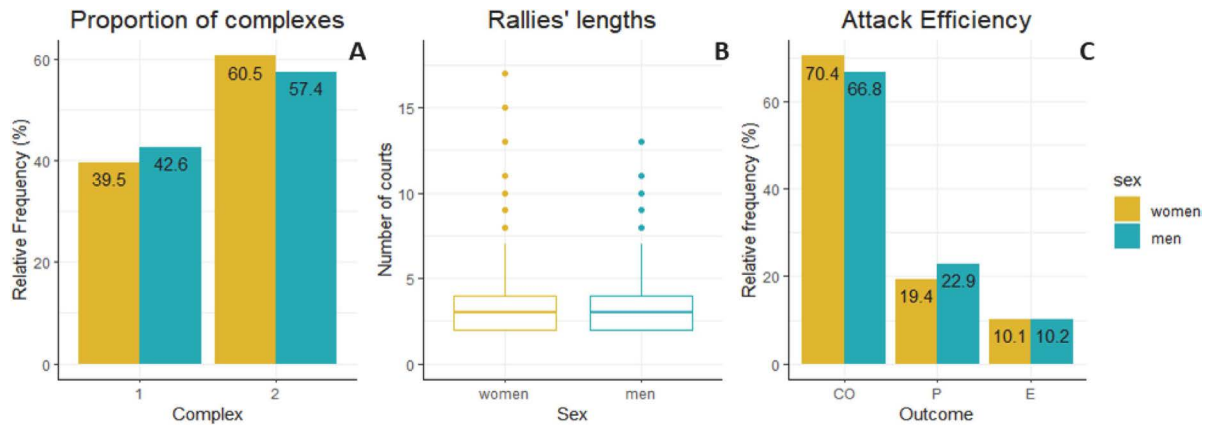


Figure 2 - A: Relative frequencies of match complexes 1 and 2. B: Number of courts per rally. C: Attack efficiency - CO: continuation with the opponent; P: point; E: error.

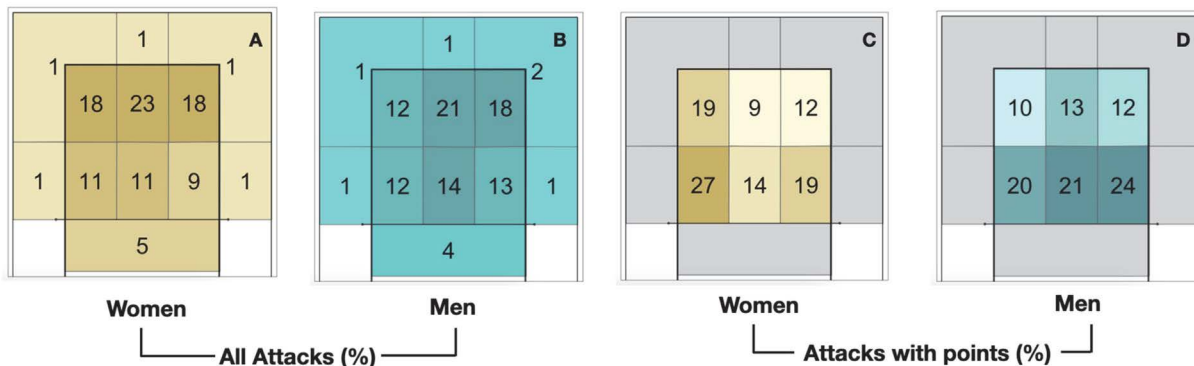


Figure 3 - Relative frequencies (in percentage) for the attacking zones for women and men: A and B - all attacks; C and D: attacks with points.

significantly more recurrent attacking zone than those close to the net, for both sexes (w: 23%; Chi-squared standardized residual: 4.22; m: 21%; standardized residual: 2.84). For women, backcourt had similar distribution among zones (left: 18%; center: 23%; right: 18%). For men, the left corner was less addressed than other backcourt zones (left: 12%; center: 21%; right: 18%). For attacks resulting in points (Figure 3 - Parts C and D), attacking destinations were significantly distinct (Chi-squared = 42.964, $p < 0.001$). The most recurrent attacking zones were close to the net: for women, the net - left was the most addressed (27%; standardized residual: 1.85) while men tended to seek the net - right more than other zones (24%). An exception for women was the backcourt left which was also significantly more addressed than others (19%; 4.18).

Figure 4 displays the relative frequencies of game actions and respective techniques. Results indicate similarity between sexes for the occurrence of all game actions. Particularly, block was a rare event for men (0.5%) and inexistent for women. Reception/defense was the game action with the highest frequency (w: 31.8%; m: 31.7%), followed by the setting (w: 23.7%; m: 24.6%) and the attack (w: 22.5%; m: 24.0%). There were significant sex differences for the most recurrent techniques (Chi-squared = 2118.8, $p < 0.001$). Women controlled the ball preferentially with head (29.7%) and shoulder (23.0%) while men used mainly chest (30.3%) and head (24.8%). Women and men presented equivalent relative frequencies of foot medial side (serve) technique (w: 14.6%, m: 14.7%) and equivalent use of the foot medial side for controlling live balls during the rallies (w: 12.0%, m: 11.2%).

Discussion

In this study we performed the content validation of an observational instrument for tactical analysis in footvolley (FtVi) and we applied the FtVi in an empirical evaluation of tactical tendencies of high-level footvolley's matches. Validation steps followed previous contributions on the topic both for team sports^{16,22,29} and, specifically, net games^{9,24,30}.

FtVi's preliminary design included four categories and 43 variables. The validated instrument remained with the same categories and there were added some variables - competition level, age group, tournament phase, ball trajectory. Previous contributions reported two to eighteen experts to support the validation^{19,21-23}. Although footvolley is a recent sport, its fastly growing community made it possible to count on the support of four experts. Experts' contribution was in accordance both with number and proficiency level of those reported in previous studies.

The validation process indicated high rates of the Aiken's V for definition and pertinence of the instrument categories and variables (≥ 0.90), confirming the content validity of the FtVi. Complementary, the Cohen's Kappa coefficient used to assess intra- (0.92) and inter-observer (0.89) reliability also indicated a near perfect agreement, confirming criteria were adequately described.

In the empirical application of the FtVi, the instrument was applied in the analysis of professional footvolley's matches. Proportions of complexes I (women: 39.5%; men: 42.6%) and II (w: 60.5%; m: 57.4%) were greater for Complex II for both sexes. In beach volleyball, it has been found greater proportions of complex I (71.6%)

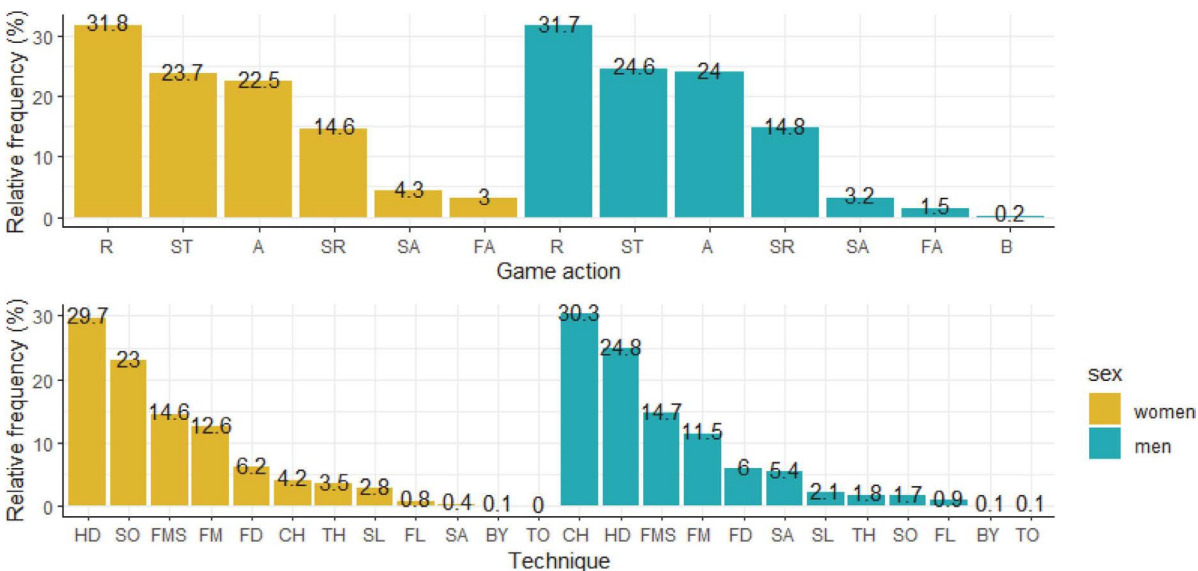


Figure 4 - Game actions (women and men), where: reception/defense (R); setting (ST); attack (A); serve (SR); second attack (SA); first attack (FA); block (B). Techniques (women and men), where: head (HD); shoulder (SO); foot medial serve (FMS); foot medial (FM); foot *dorsum* (FD); chest (CH); thigh (TH); slide (SL); foot lateral (FL); shark (SA); bicycle (BY); turnover (TO).

than II (28.4%)³¹, which suggests that footvolley is more likely to promote effective defenses and the continuation of the rally in complex II sequences. The median length of the rallies analyzed was approximately three courts for both sexes. Attacks with other body parts (e.g. foot, head, chest) that do not involve arm-hand are typically performed with less steep angles and lower speed when compared, for instance, to beach volleyball techniques. This may favor longer rallies for both sexes, lasting more than five courts, in some cases. In terms of the attack efficiency, most of the offenses led to the continuation of the rally (w: 69.5%; m: 64.5%). Comparatively, in beach volleyball it has been reported 59.65% of defended attacks in women's Olympic competition³².

The relative frequencies of attacking zones differed from previous evidence from beach volleyball³³. Our results indicated that when all attacks were considered, the backcourt was a more frequent destination (w: 62%; m: 55%) than the net (w: 38%; m: 45%), particularly for women. Previous evidence from beach volleyball indicated a more homogeneous distribution of attacks³³. When only scoring attacks were considered, the relative frequencies for backcourt (w: 40%; m: 35%) and net (w: 60%; m: 65%) zones were inverted in comparison to frequencies for all attacks. For women, it increased from 38% (all attacks) to 60% (scoring attacks) of net zone destination. For men, it increased from 45% (all attacks) to 65% (scoring attacks). These results evidence the relevance of delivering an attack close to the net for scoring a point in footvolley. Combined with the previously reported rallies' lengths, indicating that 50% of them have more than three courts of duration, a practical implication of these results is the importance of the reception/defense and set qualities, which are highly influential to the attacking possibilities. This may be particularly explored in complex I situations since it involves less contextual interference than complex II.

Results from game actions indicated that the reception/defense, setting, attack, serve, second and first attack were equivalently performed between men and women. In terms of techniques, it is worth noting that for both women (head: 29.7%; shoulder: 23.0%) and men (chest: 30.3%; head: 24.8%) two upper body techniques for each sex comprised approximately half of the techniques performed in the match. This predominance suggests that upper body related techniques may be foreseen by the players as an alternative for speeding up the game and obtaining temporal advantages over the opponents in comparison to foot techniques. Possibly due to anatomic features, "chest" is the most used technique by men (30.3%) and is less performed by women (4.2%). Although scarce, women's use of the chest points to its importance for footvolley's performance. Still, the frequent use of the shoulder instead of the chest by women corroborates the evidence that upper body techniques promote competitive advantage in footvolley.

The study presented some limitation. One is the fact that FtVi was validated with the focus in the team in possession of the ball. Thus, preparatory positioning for defending and keeping the ball live was not considered. In the empirical investigation, fewer matches were analyzed for women. Equivalent number of women's matches to those of men was not available and it may have impacted women's and men's comparison.

Conclusion

The observational instrument proposed in the present study - the FtVi - provides an approach for gathering empirical evidence about footvolley. It has been designed and validated following methodologies previously applied in the development of observational instruments for other net sports^{9,24}. Although the term footvolley suggests a straight connection with foot related techniques, our investigation evidenced a greater use of other body parts (e.g. head, shoulder, thigh, chest), in highly demanding tactical contexts, characterized by long rallies until a game interruption. This variety of techniques add consistent stimuli for motor literacy of its practitioners, besides the physically demanding circumstances of the sand pitch that may positively impact one's conditioning. The fact that hands-arms are not used to touch the ball contributes for points lasting longer since less steep attacking trajectories should be performed in comparison to beach volleyball, for instance. It is corroborated by the similarity between sexes in terms of attacking efficiency. Hence, footvolley is an emerging sport whose game dynamics present similarities between men and women with the predominance of upper-body techniques in the ball contacts and scoring is favored by the ability of attacking the ball on the opponent's court as close as possible to the net.

Acknowledgments

We thank Vanessa Nadalin for the support with the spatial data analysis. We thank Mateus Tourino for the photographs of footvolley's actions.

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Appendix

Definition and illustration of specific footvolley's techniques

1. Foot *dorsum* (“peito do pé”): the contact with the ball is performed with the *dorsum* of the foot (Fig. 5).



Figure 5 - Foot dorsum (“peito do pé”).

2. Foot lateral (“chaleira”): the contact with the ball is performed with the lateral of the foot (Fig. 6).



Figure 6 - Foot lateral (“chaleira”).

3. Foot medial (“chapa do pé”): the contact with the ball is performed with the medial part of the foot (Fig. 7).



Figure 7 - Foot medial (“chapa do pé”).

4. Slide (“defesa baixa”): the contact with the ball is performed with the foot, after a slide. Typically, this is a saving technique aiming at keeping the ball live (Fig. 8).



Figure 8 - Slide (“defesa baixa”).

5. Bicycle: similar to the soccer bicycle, the player jumps and turns his back to the ground, hitting the ball with the foot up in the air. Typically, it is performed above the net, for attacking the ball (Fig. 9).



Figure 9 - Bicycle.

6. “Shark”: technique in which the player jumps, extends her leg upwards and kicks the ball with the foot sole downwards (in the case of an attack) or blocking the ball trajectory and eventually pushing it upwards (in the case of a defense) (Fig. 10).



Figure 10 - Shark.

7. “Eagle” - “Voo do Águia”: technique in which the player jumps and turns laterally or with his back to the net, kicking the ball with the foot medial. It is performed close to the net and may be used to attack or block (Fig. 11).

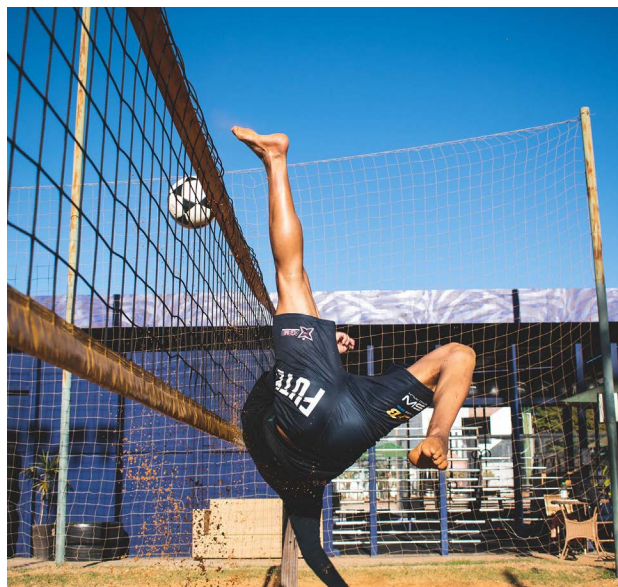


Figure 11 - Eagle (“Voo do Águia”) - attack and block.

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Manuscript received on September 28, 2022

Manuscript accepted on April 25, 2023



Motriz. The Journal of Physical Education. UNESP. Rio Claro, SP, Brazil
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