



## ANALYSIS OF THE SATISFACTION LEVEL AND GAME PREFERENCES AT INITIAL CATEGORIES IN VOLLEYBALL AND BEACH VOLLEYBALL PLAYERS

### Análisis del Nivel de Satisfacción y de las Preferencias de Juego en Categorías Iniciales en Voleibol y Voley Playa

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#### Abstract

**Background:** Many strategies are used to introduce athletes in sport. The aim of this study was to analyse the satisfaction level and game preferences of volleyball and beach volleyball players at initial categories, regarding: (a) the execution and performance of the game actions, and (b) carrying out training tasks according to their structure and number of players. **Methods:** A total of 752 questionnaires were analyzed from the players who participated in Spanish tournaments of volleyball (n=492) and beach volleyball (n=260) in 2015. The variables were the satisfaction level in the execution of game actions (serve, reception, set, attack, block and dig) and training tasks, measured in a scale of 0-10 points. The age categories were: U14, U16, U19, and U21. The Mann-Whitney's U test ( $p<.05$ ) was used to determine the differences between categories. **Results:** A preference for attack actions in the first stages of both volleyball and beach volleyball, especially in the male category was found. Similarly, a greater satisfaction level was observed in the competition-like training tasks. **Conclusions:** This information allows developing teaching proposals for initial stages in volleyball and beach volleyball, attending to the preferences of the athletes according to their age category.

**Keywords:** sports initiation; adherence; sports teaching; sports learning.

#### Resumen

**Introducción:** Numerosas estrategias han sido utilizadas para iniciar deportistas. El objetivo del estudio fue analizar el nivel de satisfacción y las preferencias de juego de jugadores de voleibol y vóley playa en categorías iniciales, según: (a) la ejecución y el rendimiento de acciones de juego, y (b) las tareas de entrenamiento según estructura y número de jugadores. **Método:** 752 cuestionarios fueron analizados por los jugadores que participaron en los Campeonatos de España de voleibol (n=492) y vóley playa (n=260) en 2015. Las variables fueron el nivel de satisfacción en la ejecución de las acciones de juego (saque, recepción, colocación, ataque, bloqueo y defensa) y las tareas de entrenamiento, medido en una escala de 0-10 puntos. Las categorías de edad fueron: sub-14, sub-16, sub-19 y sub-21. Se usó el test de U Mann-Whitney ( $p<.05$ ) para determinar diferencias entre categorías. **Resultados:** Se observó una preferencia hacia el ataque en las primeras etapas en voleibol y vóley playa, especialmente en categoría masculina, así como un elevado nivel de satisfacción en tareas próximas a la competición. **Conclusiones:** Esta información permite desarrollar estrategias de enseñanza en etapas iniciales en voleibol y vóley playa, atendiendo a las preferencias de los atletas según su edad. **Palabras clave:** iniciación deportiva; adherencia; enseñanza del deporte; aprendizaje del deporte.

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## Introduction

From the initiation, the sports training process advances up to the development of the specific skills that allow the player to participate in competitions. Sports initiation has evolved from models focused on the acquisition of technical abilities to flexible models adapted to the needs of the learner. In this sense, the methodologies with a comprehensive approach of the sport stand out, where the learner builds his/her own learning from the understanding of the relationships and rules of the game (Bunker & Horpe, 1982; Tan, Chow, & Davids, 2012). This teaching is focused on the tactics and the development of perceptive and cognitive factors of the athlete, given the influence of these on decision making and knowledge transfer (Alarcón et al., 2009; García-López, Contreras, Penney, & Chandler, 2009). Other approaches, such as the sport education model (Siedentop, 2002), provide learning experiences from the particularities of sport (Siedentop, Hastie, & van der Mars, 2004), and are designed to achieve the success of the whole team (Hastie, 1998). These approaches allow achieving learning objectives beyond the technical skills, thus facilitating the acquisition of social competences (Carlson & Hastie, 1997) and the adherence to the sport practice (Chunxiao et al., 2019). All this ensures that the learner will have a satisfactory participation in the activities presented, understanding them and being able to apply and execute appropriate strategies according to the complexity of each situation.

In initiation to volleyball, several studies have analysed these models of sports initiation, mainly in the school context. These studies are divided into: (a) comprehensive models adapted to the particularities of sport (Mesquita, Graca, Gomes, & Cruz, 2005; Mesquita, Farias, & Hastie, 2012) and (b) sport education models combined with other methodologies (Hernández-Hernández, Mayordomo, & Palao, 2016; Araujo, Mesquita, Hastie, & Pereira, 2016). In most of these works, the contents are related to the improvement of team playing (decision making, continuity of the game, search for spaces when attacking, etc.) (Araujo et al., 2016; Mesquita et al., 2012; Pritchard, Hawkins, Wiegand, & Metzler, 2008) the understanding of the rules of the game (Hernández-Hernández et al., 2016; Moreno, Moreno, García-González, Gil, & del Villar, 2010), and the efficacy of some technical gestures (Araujo et al., 2016; Hernández-Hernández et al., 2016; Mesquita et al., 2005). There are also a number of studies that analysed the evolution of the way of teaching this sport (Manzanares, Ortega, & Palao, 2005). However, these works emphasise the teaching methodology and conditions, disregarding the sequence of contents in the progression of learning, as well as the criteria selected for teaching different elements. Thus, the teaching of volleyball usually begins with technical gestures such as finger pass, since this action is similar to an elemental ability of interception and throw, or with game situations of 2 vs 2, which allows for some perceptive and decision-making conditions to take place, without the tactical difficulty involved when more participants are included (4 vs 4, or 6 v 6) (Araujo et al., 2016).

Some technical manuals of initiation to volleyball agree in the introduction of the main technical-tactical elements in a sequence of contents, which begins with the continuity actions (underhand and finger pass) and finishes with the terminal actions of serve, attack and block. This series of contents also begins with small tactical games (1 vs 1 and 2 vs 2) and finishes with structures similar to that of the real game (FIVB, 2016; Marques, Mesquita, & Braga, 2010; Palao & Hernández, 2007). This proposal considers the difficulty of learning and the lesser complexity of stimulation to establish a sequence of increasing difficulty and complexity. This sequence does not take into account any other factor, such as the preference and/or motivation of the participants for the different elements of the game, despite the number of studies showing that these variables influence the attitude of the player toward the activity and, consequently, his/her adherence to sport practice (Chunxiao et al., 2019; García-Angulo, García-Angulo, & Ortega, 2017).

Knowing the preferences of the athletes can help the coach to better adjust the activities proposed in the sport initiation stage, as well as in later stages where the development of the sport skills is pursued (Wiium & Säfvenbom, 2019). Regarding the preferences of sport practice, different studies have reported differences between genders (Castillo, Balaguer, & Duda, 2000; Hanrahan & Biddle, 2002; Hanrahan & Cerin, 2009; Kavussanu & Roberts, 2001). Thus, female players are rather inclined toward the task, showing more interest in factors that go beyond sport performance, whereas male players prefer tasks focused on results. These differences can also be observed in the preferences for game phases

(García-Angulo et al., 2017; Ortega, García-Angulo, Mendoza, & López, 2015; Ortega, Palao, Sainz de Baranda, García, 2009), which are related to how players perceive their level of efficacy in attack or defence actions (Cervelló, Escartí, & Guzmán, 2007).

A literature review revealed a knowledge gap regarding sports initiation and training processes in non-educational contexts, such as clubs or sport schools. Similarly, there are no studies on teaching methodologies that explain the way in which the different technical-tactical contents are learned, especially attending to the player's satisfaction level. Therefore, the aim of the present study was to determine the preferences and satisfaction level of volleyball and beach volleyball players in training stages, with respect to: (a) the execution and performance of game actions, and (b) carrying out training tasks according to their structure and the number of players involved. This information will allow developing and justifying teaching proposals for the initiation to volleyball and beach volleyball, attending to the preferences of the players according to their age category, techniques to execute and game situations, considering the differences between genders.

## Material and methods

### Sample

We analysed 752 questionnaires completed by both female and male athletes who participated in the Spanish tournaments of volleyball and beach volleyball in the year 2015. In volleyball, 492 participants out of a total of 732 (67.21% of the population) were analysed, distributed into the U14 and U16 categories, whereas in beach volleyball, 269 participants out of a total of 338 (80% of the population) were analysed, distributed into the U14, U19 and U21 categories (Table 1).

**Table 1.** Total participants and representativeness of the analysed sample

	Total participants (population)	Total analysed (sample)	Representativeness (%)	Experience (years)
<b>Volleyball</b>				
U14 M.	168	132	78.57	3.49
U14 F.	192	108	56.25	4.75
U16 M.	156	132	84.62	5.03
U16 F.	216	120	55.56	5.60
Total	732	492	67.21	-
<b>Beach Volleyball</b>				
U14 M.	81	47	58.02	2.04
U14 F.	93	66	70.97	2.26
U19 M.	38	38	100	3.28
U19 F.	46	37	80.43	3.81
U21 M.	40	36	90	4.61
U21 F.	40	36	95	3.61
Total	338	260	76.92	-

Note. M.: male category; F.: female category.

This study was carried out with the consent of the Royal Spanish Volleyball Federation (RFEVb) and the Spanish Sports Council (CSD). During the course of each tournament, voluntary participation was solicited from the players, who agreed to collaborate on their own will and without knowing the objectives of the study. The ethical principles of the declaration of Helsinki were guaranteed.

## Design

A non-experimental questionnaire design was used (Creswell, 2012). The study variables were the satisfaction level shown by the players regarding the execution of different game actions and tasks in training situations, measured in a scale of 0 to 10 points. The game actions analysed were: serve, reception, set, attack, block and dig. The training tasks were: 1 vs 1, 2 vs 2, 3 vs 3, 4 vs 4 and 6 vs 6 (only for volleyball). The age categories were: U14 (13-14 years), U16 (15-16 years), U19 (17-19 years), and U21 (20-21 years). The U14 category was analysed in both volleyball and beach volleyball, the U16 category only in volleyball, and the rest of the categories were only analysed in beach volleyball. Lastly, the differences between genders were also studied.

## Procedure and equipment

Firstly, we contacted the Royal Spanish Volleyball Federation and the Spanish Sports Council to ask for permission to carry out this study. After they gave their consent, the principal investigator and two assistants went to the different tournaments and asked the coach or manager of each team to allow the researchers to give the questionnaires to the players. Those coaches or managers who agreed to participate in the study received an envelope with the questionnaires for the players. These documents were given to the players, who completed them with maximum honesty and with no time limit. All the questionnaires were anonymous. Then, the questionnaires were gathered and stored, and the data were recorded in an Excel document (software Office 2010). A Kappa's reliability test was conducted to ensure the quality of the recorded data, obtaining values above 0.99. This process was done by the same author who collected all data, and was developed in two moments with 15-days of difference.

The instrument applied was the "Questionnaire for Young Volleyball Players", adapted from the "Questionnaire of Satisfaction and Preferences in Basketball Players" (Ortega, Giménez, Palao, & Sainz de Baranda, 2008). The questionnaire was adapted by an expert panel composed of 16 volleyball trainers, who were graduated in sport science and had over ten years of experience in the field of training. The content validity was 0.91 (Aiken's  $V$ ), while the reliability was 0.88 (Cronbach's Alpha).

The majority of the questions had a scale answer (related to the satisfaction level), while few questions had a multiple choice option where only one answer could be selected (related to the game preferences). No modifications from the original questionnaire neither the structure nor the number of questions were made, but only some terms changed because of the differences between sports.

## Statistical analysis

A descriptive analysis of the different variables was conducted. The differential analysis included the Kolmogorov-Smirnov's normality test and the comparison of means through the Mann-Whitney's U test, with the aim of determining the differences between age categories in terms of gender. In all cases, the level of significance was established at  $p < .05$ . The statistical analyses were carried out using SPSS v.21 (statistical pack for social sciences, SPSS Inc).

## Results

The satisfaction level of volleyball players in the different actions of the game (Table 2) was higher for the attack action in all age and gender categories, followed by dig, block and serve. Similarly, reception and set showed the lowest satisfaction level. Regarding the terminal actions, scoring with attack was the most preferred one, except for the female U14 category, where block stood out. In the rest of the categories, scoring with serve was more satisfactory than scoring with block. With respect to the continuity actions, performing a good dig showed a higher satisfaction level, followed by the execution of a good reception and set, regardless of gender and age. Participating in the attack was the option with the highest satisfaction level in the male category, whereas participating in the dig was the option with the highest satisfaction level in the female category, regardless of age. A statistically significant increase was only observed between the male U14 and U16 categories for the variable "scoring in dig" ( $z = -2.290$ ;  $p = 0.022$ ). There were no statistically significant differences in the rest of the variables.

**Table 2.** Satisfaction level (mean  $\pm$  standard deviation) of the volleyball game actions

	U14		U16	
	Male	Female	Male	Female
Serve	7.78 $\pm$ 1.99	7.91 $\pm$ 1.60	7.64 $\pm$ 1.86	7.81 $\pm$ 1.58
Attack	8.34 $\pm$ 1.83	8.48 $\pm$ 1.56	8.28 $\pm$ 2.03	8.43 $\pm$ 1.77
Block	7.76 $\pm$ 2.60	8.21 $\pm$ 2.08	8.18 $\pm$ 2.34	8.06 $\pm$ 2.36
Reception	7.65 $\pm$ 1.95	7.45 $\pm$ 2.11	7.59 $\pm$ 2.35	7.66 $\pm$ 2.01
Set	6.73 $\pm$ 2.56	6.44 $\pm$ 2.85	6.89 $\pm$ 2.55	6.25 $\pm$ 2.79
Dig	8.04 $\pm$ 1.99	7.95 $\pm$ 1.92	8.05 $\pm$ 2.03	8.17 $\pm$ 1.69
Scoring with serve	8.91 $\pm$ 1.26	9.07 $\pm$ 1.47	8.98 $\pm$ 1.56	9.06 $\pm$ 1.38
Scoring with attack	9.04 $\pm$ 1.35	9.27 $\pm$ 1.33	9.02 $\pm$ 1.72	9.20 $\pm$ 1.50
Scoring with block	8.67 $\pm$ 2.26	9.35 $\pm$ 1.47	8.90 $\pm$ 2.27	9.01 $\pm$ 1.95
Good reception	8.50 $\pm$ 1.61	8.84 $\pm$ 1.32	8.57 $\pm$ 1.81	8.69 $\pm$ 1.70
Good set	7.71 $\pm$ 2.21	8.05 $\pm$ 2.29	8.17 $\pm$ 2.13	7.65 $\pm$ 2.44
Good dig	8.58 $\pm$ 1.49	9.01 $\pm$ 1.47	8.86 $\pm$ 1.47	8.94 $\pm$ 1.40
Participating in the attack	8.45 $\pm$ 1.30	8.80 $\pm$ 1.22	8.63 $\pm$ 1.61	8.74 $\pm$ 1.23
Participating in the dig	8.20 $\pm$ 1.58	8.86 $\pm$ 1.31	8.57 $\pm$ 1.71 <sup>a</sup>	8.76 $\pm$ 1.32

Note. <sup>a</sup>: Statistically significant difference with U14

In the analysis of the satisfaction level of the beach volleyball players regarding the different game actions (Table 3), a higher satisfaction level was obtained for attack in the male U14 and U19 categories, whereas dig was the action preferred by the female players of the same age categories. In the U21 category, dig was the most satisfactory action in the male category, while attack was preferred in the female category for this age group. On the other hand, block was the least satisfactory action in the U14 category (male and female) and in the female U19 and U21 categories, whereas reception was the least satisfactory in male U19, and serve was the least preferred by those in the male U21 category. With respect to the terminal actions, scoring with serve and scoring with attack were the most satisfactory ones in all the categories. Regarding the continuity actions, performing a good dig showed the highest satisfaction level, regardless of age and gender. However, participating in the attack and participating in the dig showed similar values in all the age and gender categories.

The male category showed a statistically significant decrease in the satisfaction level between U14 and U19 for attack ( $z = -2.141$ ;  $p = 0.032$ ) and reception ( $z = -2.355$ ;  $p = 0.019$ ), and a statistically significant increase of the satisfaction level between U19 and U21 for performing a good dig ( $z = -2.389$ ;  $p = 0.017$ ). The female category showed a statistically significant increase in the satisfaction level for scoring with block ( $z = -2.387$ ;  $p = 0.017$ ) between U14 and U21. There were no statistically significant differences in the rest of the variables.

**Table 3.** Satisfaction level (mean  $\pm$  standard deviation) of the beach volleyball game actions.

	U14		U19		U21	
	Male	Female	Male	Female	Male	Female
Serve	7.62 $\pm$ 2.20	7.68 $\pm$ 2.04	7.05 $\pm$ 1.86	7.65 $\pm$ 1.69	7.06 $\pm$ 1.32	7.89 $\pm$ 1.45
Attack	8.36 $\pm$ 1.99	7.71 $\pm$ 2.21	7.87 $\pm$ 1.34 <sup>a</sup>	7.62 $\pm$ 1.96	8.17 $\pm$ 1.54	8.39 $\pm$ 1.63
Block	6.70 $\pm$ 3.09	6.32 $\pm$ 3.25	7.79 $\pm$ 2.09	6.54 $\pm$ 3.13	7.83 $\pm$ 1.90	6.39 $\pm$ 2.99
Reception	7.85 $\pm$ 1.94	7.55 $\pm$ 2.02	6.92 $\pm$ 1.98 <sup>a</sup>	7.78 $\pm$ 2.25	7.37 $\pm$ 1.35	7.64 $\pm$ 1.79
Set	6.98 $\pm$ 2.35	6.91 $\pm$ 2.57	7.55 $\pm$ 1.67	6.57 $\pm$ 2.75	7.78 $\pm$ 1.77	7.11 $\pm$ 2.39
Dig	7.96 $\pm$ 2.04	8.08 $\pm$ 1.97	7.87 $\pm$ 1.77	8.41 $\pm$ 1.76	8.44 $\pm$ 1.48	8.11 $\pm$ 2.04
Scoring with serve	8.79 $\pm$ 1.81	8.91 $\pm$ 1.44	8.37 $\pm$ 2.06	8.86 $\pm$ 1.44	8.51 $\pm$ 1.58	9.42 $\pm$ 0.87
Scoring with attack	8.64 $\pm$ 2.24	8.98 $\pm$ 1.36	8.76 $\pm$ 1.24	8.92 $\pm$ 1.61	8.72 $\pm$ 1.23	9.31 $\pm$ 0.98
Scoring with block	7.89 $\pm$ 3.04	7.65 $\pm$ 3.36	9.05 $\pm$ 1.83	8.65 $\pm$ 2.56	8.50 $\pm$ 2.01	9.14 $\pm$ 1.91 <sup>a</sup>
Good reception	8.17 $\pm$ 1.93	8.80 $\pm$ 1.33	7.76 $\pm$ 1.98	8.65 $\pm$ 1.42	7.94 $\pm$ 1.49	8.67 $\pm$ 1.49
Good set	7.87 $\pm$ 2.35	8.20 $\pm$ 2.03	7.71 $\pm$ 1.41	8.19 $\pm$ 1.70	8.50 $\pm$ 1.44 <sup>b</sup>	8.50 $\pm$ 1.83
Good dig	8.50 $\pm$ 1.94	8.80 $\pm$ 1.35	8.53 $\pm$ 1.37	9.05 $\pm$ 1.35	9.03 $\pm$ 0.97	9.19 $\pm$ 1.28
Participating attack	8.34 $\pm$ 2.04	8.78 $\pm$ 1.30	8.24 $\pm$ 1.30	8.59 $\pm$ 1.55	8.44 $\pm$ 1.05	9.08 $\pm$ 1.02
Participating dig	8.43 $\pm$ 1.92	8.58 $\pm$ 1.61	8.21 $\pm$ 1.30	8.92 $\pm$ 1.28	8.69 $\pm$ 1.14	9.08 $\pm$ 1.13

Note. <sup>a</sup>: Statistically significant difference with U14; <sup>b</sup>: Statistically significant difference with U19

Regarding the most usual training tasks in volleyball (Table 4), the results showed an increase of the satisfaction level in situations similar to the global game and, consequently, to the competitive reality (4 vs 4 and 6 vs 6), regardless of age and gender. However, there were no statistically significant differences between the variables.

**Table 4.** Satisfaction level (mean  $\pm$  standard deviation) in volleyball training tasks.

	U14		U16	
	Male	Female	Male	Female
With coach	7.63 $\pm$ 2.00	7.43 $\pm$ 1.95	7.87 $\pm$ 1.61	7.49 $\pm$ 1.70
Without rivals	5.97 $\pm$ 2.94	5.75 $\pm$ 2.91	6.18 $\pm$ 2.88	5.99 $\pm$ 2.68
1 vs 1	6.39 $\pm$ 2.83	6.64 $\pm$ 2.90	6.52 $\pm$ 3.01	6.46 $\pm$ 2.73
2 vs 2	6.59 $\pm$ 3.02	6.98 $\pm$ 3.08	6.93 $\pm$ 3.08	7.20 $\pm$ 2.83
3 vs 3	6.71 $\pm$ 2.87	6.69 $\pm$ 3.07	7.16 $\pm$ 2.79	6.98 $\pm$ 2.62
4 vs 4	7.56 $\pm$ 2.04	7.51 $\pm$ 2.37	7.75 $\pm$ 2.12	7.64 $\pm$ 1.91
6 vs 6	8.84 $\pm$ 1.71	9.16 $\pm$ 1.15	9.26 $\pm$ 1.22	8.93 $\pm$ 1.70

With respect to the training tasks in beach volleyball (Table 5), the results showed an increase of the satisfaction level in training with the coach, which was proportional to the increase in age, in both male and female categories. The male category showed a higher satisfaction level in the option of training without rivals, whereas the option of training in a real-game situation (2 vs 2) obtained the highest satisfaction level in all the age groups. The male category showed a statistically significant decrease in the satisfaction level between U14 and U19 for 3 vs 3 ( $z = -3.214$ ;  $p = 0.001$ ) and 4 vs 4 ( $z = -2.729$ ;  $p = 0.006$ ), whereas a statistically significant increase was obtained between U14 and U21 for 3 vs 3 ( $z = -2.128$ ;  $p = 0.033$ ). The female category showed a statistically significant decrease in the satisfaction level between U14 and U19 for 3 vs 3 ( $z = -2.401$ ;  $p = 0.016$ ) and 4 vs 4 ( $z = -2.821$ ;  $p = 0.005$ ), and between U14 and U21 for the same situations of 3 vs 3 ( $z = -2.916$ ;  $p = 0.004$ ) and 4 vs 4 ( $z = -2.186$ ;  $p = 0.029$ ), whereas a statistically significant increase was observed between U19 and U21 for 2 vs 2 ( $z = -2.257$ ;  $p = 0.024$ ). No statistically significant differences were found in the rest of the variables.

**Table 5.** Satisfaction level (mean  $\pm$  standard deviation) in beach volleyball training tasks.

	U14		U19		U21	
	Male	Female	Male	Female	Male	Female
With coach	7.17 $\pm$ 1.74	7.70 $\pm$ 2.00	7.32 $\pm$ 1.93	7.73 $\pm$ 1.56	7.77 $\pm$ 1.21	8.22 $\pm$ 1.31
Without rivals	6.22 $\pm$ 2.47	5.63 $\pm$ 2.97	6.37 $\pm$ 1.95	4.81 $\pm$ 2.85	6.31 $\pm$ 2.77	5.69 $\pm$ 1.80
1 vs 1	5.85 $\pm$ 3.27	5.94 $\pm$ 2.82	6.47 $\pm$ 2.45	6.38 $\pm$ 2.87	6.78 $\pm$ 2.38	5.51 $\pm$ 2.79
2 vs 2	8.57 $\pm$ 1.95	8.98 $\pm$ 1.41	9.08 $\pm$ 1.12	9.35 $\pm$ 1.16	8.61 $\pm$ 1.42	8.74 $\pm$ 1.48 <sup>b</sup>
3 vs 3	6.96 $\pm$ 2.42	6.41 $\pm$ 2.65	5.03 $\pm$ 2.78 <sup>a</sup>	4.70 $\pm$ 3.47 <sup>a</sup>	5.44 $\pm$ 3.08 <sup>a</sup>	4.58 $\pm$ 3.05 <sup>a</sup>
4 vs 4	6.54 $\pm$ 3.00	6.20 $\pm$ 2.77	4.66 $\pm$ 3.19 <sup>a</sup>	4.16 $\pm$ 3.62 <sup>a</sup>	5.33 $\pm$ 3.28	4.67 $\pm$ 3.47 <sup>a</sup>

Note. <sup>a</sup>: Statistically significant difference with U14; <sup>b</sup>: Statistically significant difference with U19

## Discussion

The aim of this study was to determine the satisfaction level and game preferences of volleyball and beach volleyball players at initial categories regarding the execution and performance of actions of the game, as well as carrying out training tasks. The results showed a preference for performing attack actions in the first stages of volleyball and beach volleyball, especially in the male category. With respect to game situations, a higher satisfaction level was observed for those similar to real competition in both sports.

In volleyball, the preferred action was attack in all age groups. Spike is the action with which a team culminates the play, and it is usually performed in the third and last contact of the team with the ball. Having the chance to attack, and score with a spike, influences the motivation for practicing this sport; therefore, sport initiation programs should include its teaching and application in the game much earlier. There are proposals of initiation to volleyball in countries of Northern Europe in which the net is lowered to facilitate the spike, allowing the defending team to catch (or dig) the ball after one bounce, thus favouring the continuity of the game. This game is known as "Smashbal" (Díaz, 2011). However, the existence of proposals that emphasise the exclusive practice of continuity actions in the first stages, and the technical difficulty of the attack action, which makes it an element that hinders the continuity of the game, are the reasons why this action has been traditionally set aside for later stages (FIVB, 2017; Marques et al., 2010; Palao et al., 2007). This is not in line with the preferences shown by the players of this study in all categories. Moreover, these results are in agreement with those obtained in other sports, such as handball (García-Angulo et al., 2017) and basketball (Ortega et al., 2009, 2015), where both male and female players showed a preference for the throw action, which is the attack action in these sports, over the rest of the technical-tactical actions. Therefore, regarding the preference for scoring, attack was the most popular option, except for the female U14 category, where block was the most preferred scoring option, followed by attack. The scarcity of blocking actions at that stage, due among other aspects to the low performance and anthropometric characteristics of the players, could pose a novelty to them, and hence their preference for scoring with such action.

Among the continuity actions, performing a good dig was preferred in all categories, despite its greater complexity compared to reception (Castro, Souza, & Mesquita, 2011). Unlike other continuity actions, such as set and reception, a successful defensive action usually involves the participation of more than one member of the team. Thus, several players cooperate with a common objective, which results in an increase of group motivation (to prevent the ball from touching the field and being lost), without considering the quality or performance of the contact. This could explain the results obtained in this study, which are in line with those obtained by Angulo et al. (2017) with female handball players, who observed a preference for defensive continuity actions. Another influencing factor is the preference shown by female players for carrying out the task (in this case, collaborating to prevent the ball from touching the field), in opposition to the preference for scoring, characteristic of the male category (in this case, block or spike). In this sense, studies conducted in the scope of physical education that applied different teaching models through football (Mesquita et al., 2012) and volleyball contents (Hernández-Hernández et al., 2016) highlight the improvement of female players in defensive actions that involve decision making in collaborative tasks (2 vs 2 or 3 vs 3). Lastly, the significant increase of the preference for defensive participation in the male category could be related to the scarce efficacy of blocking, as well as the progressive increase in the efficacy of digging with age (García-de-Alcaraz, Ortega, & Palao, 2016).

The results in beach volleyball were more heterogeneous in terms of age and gender. This could be related to the differences between initiation methodologies, or to the usual transition from the volleyball court to beach volleyball, with exclusive beach volleyball initiation and training being almost nonexistent in the Spanish context. All that justifies the need to consider these aspects in the programming of training contents. Coach preparation manuals usually have a general planning with an increasing game level and/or learning difficulty (FIVB, 2017), and which do not take into account differences in terms of gender. In the particular case of beach volleyball, only a few of these manuals consider such differences in performance or way of playing (López-Martínez, Palao, Ortega, & García de Alcaraz, 2018).

With respect to the game actions in beach volleyball, male players prefer the attack action in the first stages, and then, in later stages, the preference shifts to the dig action; on the other hand, female players prefer digging in the first stages, whereas in U21 attack becomes the favourite action. This difference could be related to the evolution of the game in terms of gender. In this sense, a consolidated attack would involve a preference for the development of digging (male category), whereas mastering the dig action would lead to a preference for developing the attack (female category). Thus, the significant increase of satisfaction when scoring with a block in the female category could explain the need to improve in such action as a consequence of the development of female players in the attack; similarly, the significant decrease in the preference for attacking in the male category would explain the interest for digging. Nevertheless, block was the least

preferential action in the female category, regardless of age. The characteristics of this sport, especially the small number of players in the field, could explain the preference for the defensive action on the sand when stopping or limiting the attack of the rival team. Furthermore, digging provides continuity to the game and the chance to counter-attack. This is in line with usual strategies, such as when the blocker moves away from the net to defend the field (Medeiros, Marcelino, Mesquita, & Palao, 2017).

In the first stages of sport initiation, it is usual to teach about the importance of continuity, as this implies a better use of the training time and, therefore, the generation of conditions that favour learning and adherence to the sport (Chunxiao et al., 2019). This could seem contradictory with respect to models such as Teaching Games for Understanding (Bunker & Horpe, 1982), Sport Education (Siedentop, 2002; Siedentop et al., 2004) and the Comprehensive Teaching model, which support teaching methodologies where the attack aspects have a priority over the defence aspects, based on the assumption that the former may have more tactical contents than the latter. However, the results of this study suggest that defensive actions in the initiation to sports such as volleyball and beach volleyball allow prolonging the duration of the play (more practice time) and, thus, increasing the number of tactical behaviours of the players (decision making in a short time, constant adaptations in the motor response based on the previous analysis, etc.). Therefore, applying the mentioned teaching models in defensive situations could be a way of complementing the teaching of these sports, since it maintains the richness of tactical elements present in the game, and it also responds to the preferences and motivations of the players. Likewise, including attack actions in conditions that allow the continuity of the game also contributes to this tactical richness in learning, and it also satisfies the player who starts practicing these sports.

Regarding game situations, in both volleyball and beach volleyball there was a higher satisfaction level in game situations similar to the competitive reality (6 vs 6 and 2 vs 2, respectively). In beach volleyball, a sharp decrease of satisfaction was observed for tasks performed with a number of players larger than that of the real competition, in both male and female categories (this did not occur in volleyball trainings). The logic of the game derived from this type of tasks would be poorly related to the reality of the game (2 vs 2) and could explain this tendency. Moreover, the decreased participation of each player could be related to the decrease in the satisfaction level. These results are in line with those obtained in other sports, where the players found greater satisfaction in tasks that are similar to the real competition (goal-oriented) (Cervelló et al., 2007). Teaching models such as those of sport education respond to the structure of the real game (in this case 6 vs 6 or 2 vs 2), while also providing other competition elements (referees, coaches, etc.), which fits the preferences of the surveyed players. However, most of the studies in which these teaching models have been applied to the initiation of volleyball used reduced game situations, such as 4 vs 4, 3 vs 3, or 2 vs 2 (Araujo et al., 2016; Hernández-Hernández et al., 2016; Mesquita et al., 2005), which differs from the real competition format. The obtained results suggest the need to not only plan the contents, but also to readjust the structure of the tasks, making use of competition-like formats (6 vs 6, or 2 vs 2), where the methodological goodness is combined with the preferences shown by the players, thus increasing their motivation for practicing and/or training these sports.

Despite the relevant contributions of this work for sport initiation and training, as well as the direct collection of the opinions of the participants, a series of limitations must be highlighted, such as the recording of the opinions of players with little experience and in a competitive environment, which could have altered their psychological state and, thus, their opinions. Future works could improve this aspect, by conducting a follow-up throughout the season or by carrying out longitudinal studies to determine the evolution of these preferences along the entire process of sport initiation and training.

## Conclusions

The participants of the present study showed a preference for attack actions in the first stages of both volleyball and beach volleyball, especially in the male category. Dig was the preferred action in the first stages of female beach volleyball. Regarding game situations, there was a higher satisfaction level in competition-like tasks in both sports.

These data allow designing and establishing teaching proposals for sport initiation and training attending to the preferences of the players and considering the differences between genders.



## Practical applications

The contributions of this study will allow contextualising the teaching processes accurately attending to the age and improvement of the players, as well as considering the use and development of technical actions and game situations that are more satisfactory to the learner. In the first stages of initiation, it will be possible to foster the teaching of basic motor skills, ensuring the multilateral development of the player.

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