

# What do we know about paddle?

## Abstract

The paddle is a sport with great social impact in Spanish speaking countries. It is a physical activity of shovel and ball with a common origin to the rest of the most popular racket sports. It has a great socializing power so it is situated between one of the seven most practiced sports and the fourth with more federative licenses in Spain. Its field with reduced measures (20x10) and that the development of the game is in pairs makes it a relatively easy sport to practice. The objective of this work is to gather information to analyze the characteristics and aspects of this sport. In conclusion, a synthesis of the information obtained is provided.

**Keywords:** Paddle, systematic review, game analysis

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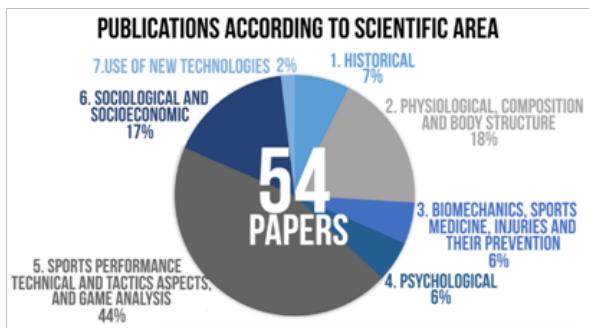
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## Introduction

Paddle is a sport of great social recognition in Spanish speaking countries. In Spain, it has become the seventh most practiced according to data from the CIS and the fourth with more federative licenses, with a total of 61,220 athletes.<sup>1</sup> These data do not agree with the lack of scientific works of this sport, although it is also one of the sports on which the number of players in Spain is increasing. Among others that is due to the socializing power of its practice (before, during and after the game). With respect to the game analysis and the scientific work connected to paddle developed so far, only 54 references have been found. Paddle references have been decanted towards the analysis of sports performance, especially of the game, technique and Tactics, with very little work being done in the rest of thematic areas<sup>2</sup> (Figure 1).



**Figure 1** Analysis of papers by scientific areas.

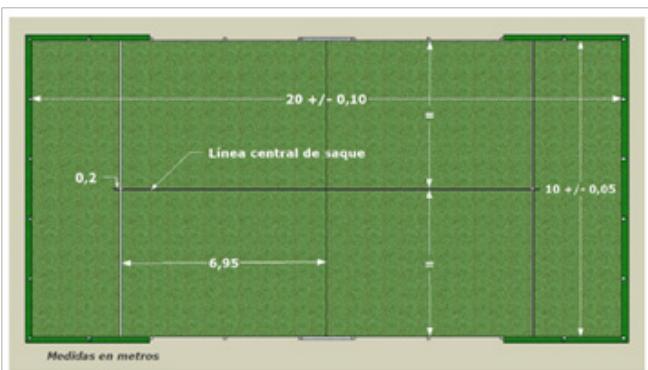
For this reason it is opportune to investigate the historical, physiological, biomechanical, psychological, sports performance, sociological aspects and use of information and communication technologies (ICT) related to the paddle to have a more detailed knowledge about this sport.

## Discussion

For the analysis of the different aspects of this sport, 7 thematic areas have been established.

## Historical area

It is a relatively young sport, devised by Enrique Corcuera in 1962 in Mexico City,<sup>3</sup> which in 1974 was introduced in Spain by Alfonso de Hogenlohe.<sup>4</sup> Its origins, in the middle Ages in France (*jeu de paume*),<sup>5</sup> are related to the background of the rest of racket sports with more tradition.<sup>6</sup> The field of play is a rectangle of 20x10 divided in its half by a net. In each field can be observed (Figure 2) the service lines (parallel to the net) and perpendicular to the central service line.<sup>7</sup> The track is completely closed, as shown in Figure 3. In the enclosure we can find materials that allow the natural bounce of the ball and metal areas where the rebound is irregular.<sup>7</sup> Finally, the material for the development of this sport practice is specific, that is to say, the blades and balls have certain characteristics (Figure 4).



**Figure 2** Measures Paddle court.

## Physiological composition and body structure

These works are intended to provide useful information for sports performance. As the most relevant results, the male paddle player has a mesoendomorphic and female endomesomorphic profile.<sup>8</sup> It is an intermittent acyclic sport, the most important metabolic pathway is aerobic<sup>9</sup> and 82% and 93% of the maximum HR.<sup>8</sup> Finally, Bartolomé et al.<sup>10</sup> have analyzed the amount of concentration of minerals in the urine to determine the internal load of this sport. As a most relevant

result, these authors have found low levels of Lithium (Li) in the concentration of urine after a match of paddle, this being an essential mineral since it is related to the energy metabolism and the regulation of the adequate function of several biological systems Bartolomé et al.<sup>10</sup>



Figure 3 Enclosure Pádel track.



Figure 4 Ball and paddle shovel.

### Biomechanical area, sports medicine, injuries and prevention

Mainly, these works are developed to prevent and avoid injuries that are to prevent interruption of training-competition. The most common injuries in the paddle are ankle sprain, twin rupture and ligamentous knee injuries.<sup>11</sup>

### Psychological

The level of activation, self-esteem, stress, anxiety can modify the performance of the athlete in any sports modality; in addition they are aspects that have been analysed in the paddle.<sup>12</sup> On the other hand, psychological factors have been studied in relation to sports injuries.<sup>13</sup>

### Area of sports performance, technical, tactical, didactic aspects and analysis of the game

The paddle is a sport that owns technical gestures and a determined tactic. For the teaching of technique, the analytical method is the most used for performance improvement.<sup>14</sup> In the paddle, as open sports with a changing environment, tactics play an important role within the demands of the game.<sup>2</sup> For the analysis of the game, the studies have analysed the most frequent beatings in the competition<sup>15</sup> which are the auction and the deep and crossed balloon. Another aspect to analyse is the temporal structure in which all authors conclude that it is an intermittent sport where rest time is higher than that of play.<sup>16,17</sup>

### Sociological and socioeconomic

The association between physical activity and health is

indisputable, in the case of the paddle it is reinforced by having a high recreational level, the fun and the values that it entails,<sup>18</sup> such as the promotion of friendships, affirmation of self-esteem and participation of children and men and women of different ages, which also makes it an innovative educational tool.

### Use of new technologies

The uses of new technologies are common. The video allows knowing aspects of the game that in situ the player does not appreciate it. Its use is mainly for the analysis of the technique or keeps a record of any parameter that can be studied.<sup>19</sup>

### Conclusion

In this work the main aspects of the paddle have been analysed and information has been collected on the most analysed thematic areas of this sport. As a conclusion, it is stated that it is a fairly young sport both because of the physical activity it represents and because of the few analyses or related investigations (54 jobs), which is striking in comparison with the high number of players in Spain. The most studied area is the Sports performance, technique, tactics, didactics and game analysis and highlights the lack of work related to the rest of thematic areas. As a limiting factor is again observed the lack of paddle work in the Anglo-Saxon world, this may be due to the fact that the practice of this sport is almost exclusive in Spanish-speaking countries, perhaps due to climatological issues considered in its beginnings.<sup>20,21</sup> As future prospects, it is proposed to deepen the study of this sport in Spanish-speaking countries as well as in other languages, in addition to specifying its scientific bases and to influence the development of scientific studies where parameters not yet studied are analysed.<sup>22,23</sup>

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### Conflict of interest

The authors declare that they have no competing interest.

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