



# Evolution in the Sports Habits of Sport Sciences Students in Spain

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## Abstract

The purpose of this study was to analyse the evolution of the sports habits of Physical Activity and Sport Sciences students in Spain. It is a quantitative, exploratory and descriptive study. The sample is comprised of 1043 students divided into three different academic years: 357 (34.2%) were studying in the period 1991-92, 364 (34.9%) in 2012-13 and 322 (30.9%) in 2016-17. The majority are males (74.3% compared to 24.7% females) and their mean age is 21.7 ( $SD=3.077$ ). A questionnaire with a reliability index of  $\alpha=.822$ ,  $.836$ ,  $.877$ , respectively, was used to collect the data. The results show that the student profile is clearly athletic, with sports backgrounds in their families, a trend that increased over the years, although once they started their degree programmes the number of sports they practised decreased. Football is the majority sport, which increased in the academic years studied and decreased after the students enrolled in the school. Their sports practice is associated with federations, and therefore the majority compete nationally and regionally.

**Keywords:** sport, higher education, physical education, students, physical activity

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## Introduction

Research into the sports habits of university students enrolled in Physical Activity and Sport Sciences (PASS) has been common in the specialised literature in Spain since the old national physical education institutes (INEF in Spanish) were founded. The earliest studies focused on a sample of students from a specific school (De la Cruz et al., 1988; García et al., 2012; Márquez & Zubiaur, 1990; Madera & González, 2003; Mosquera-González & Rodicio-García, 1995; Pareira & Solanellas, 1998; Pérez et al., 2005). Some of them capture the differences before and after the time when the students started their programmes (Mosquera-González & Rodicio-García, 1995; Pérez et al., 2005), while others focus more on the knowledge learned in the degree programme (Madera & González, 2003).

Internationally, the topic has been associated with studying healthy living habits and levels of practice using the Physical Activity Questionnaire (IPAQ) or questionnaires developed ad hoc (Bednarek et al., 2016; Durán et al., 2014; Fagaras et al., 2015; Loch et al., 2006; Rangel et al., 2015; Soguksu, 2011; Ureta, 2015).

Another emerging avenue of research is comparative studies. Mosquera-González and Rodicio-García (2014a, 2014b) analyse the population of Physical Activity and Sport Sciences students in the 1990s and today. Their study identifies masculinisation, the practice of several sports and a strong bond with the sport, which spans almost half their lives. A tendency to modernity detected back in the 1990s continues, meaning relationships with federations and competition (García Ferrando, 2006), in addition to a decrease in sports practice after entering the school. The masculinisation of studies is also reported by Porto (2009), as well as by Serra and Soler (2013) and Garay et al. (2018), who identify a decrease in applications to the schools in the last 25 years and in the percentage of women who ultimately study in them in both Catalonia and the Basque Country. Internationally, the study by Kwan et al. (2012) analyses two groups of students (1994-1995 and 2006-2007) and reaches the conclusion that physical activity decreases with time, especially when students start university.

Another comparative study is by Montero and Gómez (2006), who offer a broader perspective by comparing students from five schools at three Galician universities. This study found no major differences in terms of the taste for sport, regular practice and association with

federations in both Bachelor's and diploma students, although the INEF students are slightly more closely associated with competition. A comparison of schools at different Spanish universities was also conducted by Montero (2008); this study highlights that at the INEF schools in Galicia, 81.9% of the students do sport and are the most closely associated with federations and competition.

There has also been an interest in learning the sports habits of students in Teaching Physical Education (PE), as shown by the studies by Arbinaga et al. (2011) and López-Sánchez et al. (1994), which compare several different graduating classes; the study by Zagalaz et al. (2009), which examines students' sport practice before and after entering the school; and the study by Gago et al. (2012), which compares them with students in the other specialisations of Early Childhood and Primary Education.

Another perspective is the study of the population of university students, including those on PE courses. In Spain, one prominent study by Ruiz et al. (2001) observed that the Education students, including students in the Diploma programme to be a PE Teacher, come in first in terms of the number of practitioners of physical-sport activities in their free time. In a similar vein are the studies by Awadalla et al. (2014), Bergier et al. (2015, 2016), Brown et al. (2008), Fagaras et al. (2015), Martínez-Lemos et al. (2014), Nasui and Popescu (2014), Olutende et al. (2017), Sechi and García (2012), Sigmundová et al. (2013) and Valdés-Badilla et al. (2015). Similarly, there are comparative studies of PE students in different countries, such as Haase et al. (2004), Kondric et al. (2013), Bergier et al. (2016, 2017) and Sindik et al. (2017).

From the methodological standpoint, the majority of the studies are quantitative and latitudinal, analysing a sample of students at a given point in time (De la Cruz et al., 1988; Madera & González, 2003; Márquez & Zubiaur, 1990; Montero & Gómez, 2006; Montero, 2008; Mosquera-González & Rodicio-García, 1995, 2014a; Parera & Solanellas, 1998; Pérez et al., 2005; Zagalaz et al., 2009), with fewer longitudinal studies (Kwan et al., 2012; Ruiz et al., 2001).

This study seeks to ascertain the evolution in the sports habits of PASS students in Spain in the last 25 years. With this purpose in mind, it analyses the data in a twofold dimension: according to the group studied (academic years 1991-92, 2012-13 and 2016-17), and whether they refer to before or after enrolling in the university.

## Methodology

A quantitative methodology was used with a questionnaire as the data collection instrument; it is fundamentally descriptive because it focused on reporting on the sports habits of PASS students by examining the direct responses they provided in natural settings, such as the classroom.

To this end, we used three samples of students enrolled in these programmes at the University of La Coruña in different periods: in the 1990s, specifically in the 1991-92 academic year, when the first class of students graduated with their Bachelor's from the INEF in La Coruña; one decade later, in the 2012-13 academic year, when the first class of Sport Sciences graduated from the same university; and finally, in the 2016-17 academic year, when the second class of Bachelor's students graduated.

## Participants

A total of 1,043 students took part in this study, 357 (34.2%) of whom studied in the 1991-92 academic year, 364 (34.9%) in 2012-13 and 322 (30.9%) in 2016-17. The majority are males, 74.3% compared to 24.7% females. The mean age was 21.7 ( $SD = 3.077$ ), and 26.7% were in their first year when the data were collected, 24.5% their second year, 16.3% their third year, 23% their fourth year, and 8% their fifth year (this percentage is low because it only includes the sample from 1991-1992, since the current programmes last four years).

## Procedure and Instrument

The participants, all of whom were PASS students, were asked to participate via an informative letter to the professors of their core courses in order to obtain a higher response. Once approval was secured, the researchers went to the classroom assigned by the cooperating professor and the students' informed consent was requested so that they could complete the questionnaire. Therefore, the sampling was incidental, and all the students attending each session completed the questionnaire. The process unfolded without incident, always in the presence of the research team to ensure that the questionnaire was properly administered and to help students to fill it out. The participants were informed that the questionnaires were anonymous and that the data would only be used for the research.

The instrument was developed ad hoc in the 1990s and was modified in 2012 to adapt it to the social and research context at the time in order to administer it to the other two groups of students. It is broken down into four sections: identifying data, sociocultural habits, sports habits and life habits. The last two sections collected data before and after enrolment into the degree programme. This article focuses on the sports habits of the students once they enrolled in the Sport Sciences degree programme.

When updating the instrument, we enlisted the participation of professors and students in the Faculty of Sport Sciences to validate it. Initially, we asked them to respond to the questionnaire and to highlight, beside each question, any comments they had on two aspects: format and content. After the research team reviewed the notes, they were asked to join a working group session to analyse the suggested improvements and take decisions. The analysis of their input advised updating the language, changing the structure and expanding it to include several aspects which were not included in the original version. The reliability of the instrument was measured via Cronbach's  $\alpha$ , which yielded overall results for the dimension being studied of .822, .836 and .877 in each group studied.

The study was conducted in accordance with the Code of Ethics of the World Medical Association (Helsinki Declaration) and approved by the Research and Teaching Ethics Committee at the University of La Coruña, where the authors work.

## Data Analysis

We combined descriptive and inferential statistics, reliability analysis of the instrument, contingency tables and measures of association. Within the latter, the Pearson  $\chi^2$  test was performed to analyse the relationship between the categorical variables (background such as athletes in the family, a climate conducive to sports, association with federations and categories in which they compete) by academic year and before or after entering the school. To find out whether the number of years playing sport differed by academic year, a one-factor ANOVA factor analysis and a post-hoc Tukey test were conducted, which enabled the specific differences among academic years to be pinpointed. The data were processed and analysed using version 22.0 of the SPSS statistical programme for Windows.

## Results

To analyse the evolution of sports habits in the different academic years studied, the three groups were studied with the emphasis on the following variables: sports background and favourable climate in the family, number of sports played, number of years played, the sport played, whether they are federated, whether they compete and if so at what level.

The students participating in the research have a sports background in their families, which varies by academic year (Table 1); there is an upward tendency as the years go by, with proportions ranging from 51.1% in the 1990s to 72% today. This difference is statistically significant ( $\chi^2 = 33.503$ ;  $df = 2$ ;  $\alpha = .000 < .05$ ) and increases as the years go by. The situation is

different in terms of whether or not there was a favourable climate for playing sports, with minimal differences ranging from 87.2%, in the 1990s to 88.5% in academic year 2016-17; these differences are not significant ( $\chi^2 = .340$ ;  $df = 2$ ;  $\alpha = .843 > .05$ ) according to the academic year.

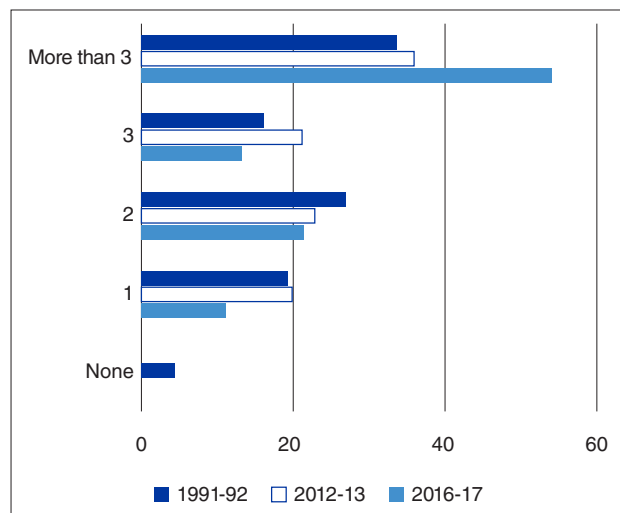
The student profile is clearly athletic, although once they begin their Sport Sciences programme, the number of sports they play decreases (Figures 1 and 2). Before enrolling in the schools, the highest percentages were found in the category of more than three sports, after which doing two sports predominates. Another noteworthy datum is that no one stated that they did not regularly play sports after enrolling in their university programme.

**Table 1**  
*Sports background and sports environment*

	1991-92		2012-13		2016-17		$\chi^2$	$df$	Sig.
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%			
Sports background	182	51.1	238	65.4	232	72	33.503	2	.000
Sports environment	292	87.2	304	88.4	277	88.5	.340	2	.843

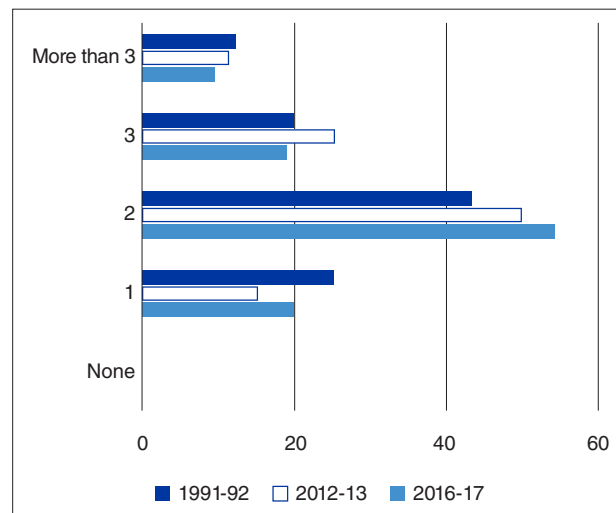
Source: Authors.

**Figure 1**  
*No. of sports practised before*



Source: Authors.

**Figure 2**  
*No. of sports practised after*



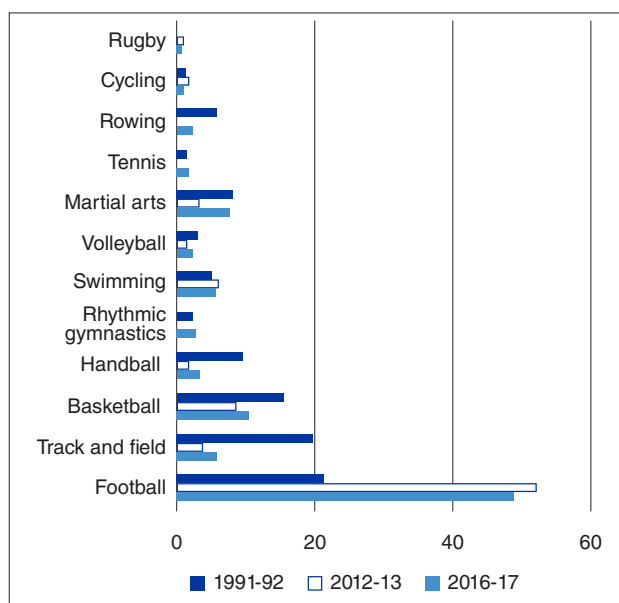
Source: Authors.

Of the sports played (Figures 3 and 4), football is the most common, although it diminishes once the students enrol in the PASS programme. They do other sports, such as track and field, basketball, martial arts and handball, to a lesser degree. As the years go by, there is a wider range of sports played, but the trend of the model remains steady, with a clear predominance of football

in all three groups, both before and after enrolling in the school.

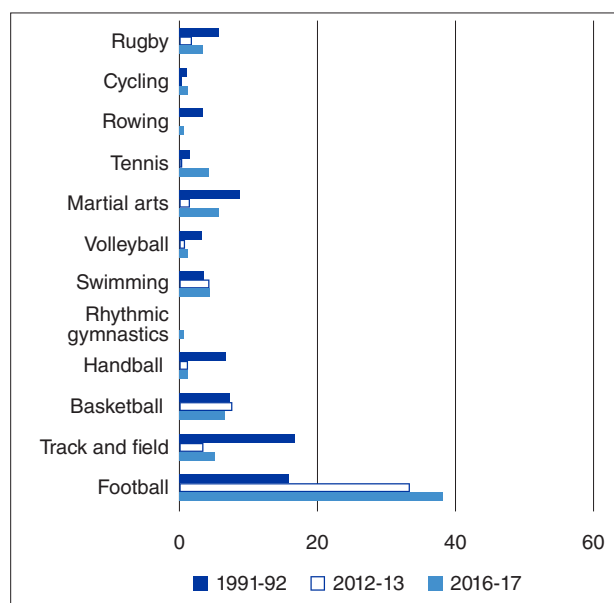
The mean number of years they played sports was 7.66 ( $SD = 3.991$ ) in the 1990s, which rises to 11 years in the other academic years analysed. These differences are significant, as shown by the results of the ANOVA performed ( $F = 94.185$ ;  $df = 2$ ;  $\alpha = .000 < .05$ ). The

**Figure 3**  
*Sports practised before*



Source: Authors.

**Figure 4**  
*Sports practised after*



Source: Authors.

**Table 2**  
*Association with federations and competition*

		1991-92		2012-13		2016-17		$\chi^2$	df	Sig.
		%	n	%	n	%				
Federated	Before	309	91.2	326	93.1	299	94.0	2.139	2	.343
	After	179	68.8	179	58.1	158	59.6	7.774	2	.021
Compete	Before	318	91.9	327	92.9	314	97.8	11.933	2	.003
	After	166	60.6	190	56.9	171	58.0	.875	2	.646

Source: Authors.

*post hoc* test (Tukey's HSD) reports that these differences are found in the groups from the 1990s and 2012, and between the 1990s and 2017 ( $\alpha = .000 < .05$ , in both).

Playing these sports is associated with federations in all three academic years studied and rose over the years (Table 2), with a statistically significant difference in federated sports after enrolling in the school, which was the highest in the 1990s ( $\chi^2 = 7.774$ ;  $df = 2$ ;  $\alpha = .021 < .05$ ). The majority – more than 90% – have competed, and this figure rises progressively in the three groups before they enrolled in their PASS programme, with differences which are not significant. Once enrolled, the differences are statistically significant, being highest in the 1990s ( $\chi^2 = 11.933$ ;  $df = 2$ ;  $\alpha = .003 < .05$ ).

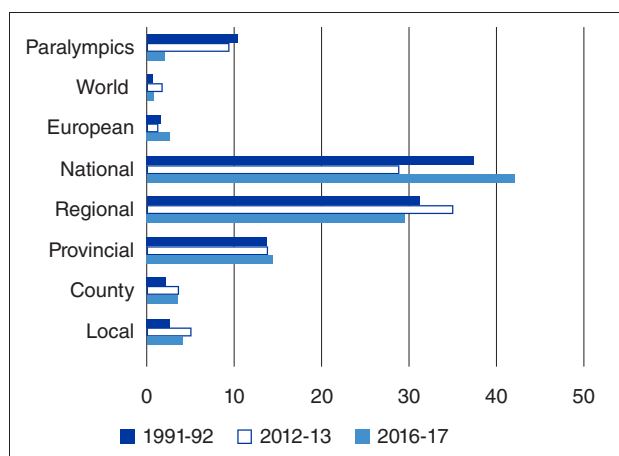
The categories in which they compete before entering the school are primarily national (37%) and regional

(31.1%), with statistically significant differences ( $\chi^2 = 35.518$ ;  $df = 14$ ;  $\alpha = .001 < .05$ ) (Figure 5). Over the years, the number who compete nationally increased in 2016-17 (41.9%) and increased regionally in 2012-13 (34.9%), although the differences are not statistically significant. A considerable number of students compete in the Paralympics (10%), although this rate diminishes over the years.

The comparison between before and after the moment when respondents enrolled in the school (Figures 5 and 6) reveals that in the 2016-17 academic year there was a downswing in the number who competed nationally (going from 41.9% to 28.5%), while those who competed regionally (from 29.5% to 39.2%) and provincially (14.6% to 20%) increased. This same trend was found in the 1990s.

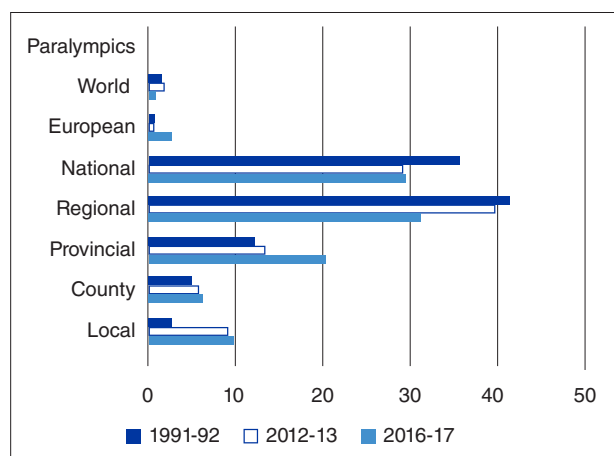


**Figure 5**  
Competition level before



Source: Authors.

**Figure 6**  
Competition level after



Source: Authors.

## Discussion and Conclusions

The interest in the sports habits of PASS students has been and continues to be a topic of interest in the specialised literature. The first noteworthy point is that this is a degree programme pursued primarily by men (De la Cruz et al., 1988; Durán et al., 2014; Garay et al., 2018; García et al., 2012; López-Sánchez et al., 1994; Madera & González, 2003; Márquez & Zubiaur, 1990; Montero, 2008; Pérez et al., 2005; Porto, 2009; Serra et al., 2014; Serra & Soler, 2013).

In order to understand and explain this fact, Serra et al. (2014) believe that a feminist theoretical perspective is needed which emphasises gender stereotypes, recognition of the hidden agenda and hegemony of male culture in studies, and acknowledgement of the neoliberal discourse in society.

Information on the existence of a sports background in the family is not collected in all the studies to which we have had access; however, when it is addressed, this influence is found to exist, as it does in this study, and to increase over the years (García Ferrando, 2006; Mosquera-González & Rodicio-García, 2014a, 2014b; Sukys et al., 2014). From the standpoint of playing sports, the profile identified in the PASS students is clearly athletic, in concurrence with other studies (García et al., 2012; López-Sánchez et al., 1994; Madera & González, 2003; Márquez & Zubiaur, 1990; Montero, 2008; Mosquera-González & Rodicio-García, 1995; Pérez et al., 2005; Ruiz et al., 2001; Zagalaz et al., 2009).

In terms of the number of sports played, playing more than one is the most common, since they play more than 3 sports. This trend matches the data provided by De la Cruz et al. (1988), Madera and González (2003) and Mosquera-González and Rodicio-García (2014a, 2014b). In terms of sports played, football is

the most common one (Mosquera-González & Rodicio-García, 1995, 2014a, 2014b; Parera & Solanellas, 1998; Pérez et al., 2005; García et al., 2012), although other studies also cite track and field, gymnastics and basketball (De la Cruz et al., 1988; López-Sánchez et al., 1994; Márquez & Zubiaur, 1990).

Once they start their university studies, both playing sports and the number of sports played diminishes, a trend also found in other degree programmes (Madera & González, 2003; Pérez et al., 2005), although some have, in fact, found opposite results (Fagarasa et al., 2015; García et al., 2012; Nasui & Popescu, 2014; Ruiz et al., 2001; Sigmundova et al., 2013; Zagalaz et al., 2009). These changes may be explained by what Puig (1997) termed *sports itineraries*, namely fluctuations in sports engagement according to each subject's biography.

Virtually all the students are associated with competition and federations, which was detected in the early studies and remains true (De la Cruz et al., 1988; Madera & González, 2003; Márquez & Zubiaur, 1990; Montero, 2008; Montero & Gómez, 2006; Mosquera-González & Rodicio-García, 2014a); however, the rate drops significantly once they start university (Mosquera-González & Rodicio-García, 1995; Pérez et al., 2005).

In the Spanish population survey, García Ferrando (2006) detected that sport has been globalised and is now post-modern, as opposed to modern competition- and federation-based sport. What is noteworthy about this study is that the trend found in PASS students is the opposite of the Spanish population overall, regardless of the group studied. In short, the student profile does not promote social changes in sport; on the contrary, it reproduces traditional models of modern sport

practice, types of sport and masculinisation which are at odds with post-modern society. A self-perpetuating closed circuit has been created: students reach school with a modern profile and the school reproduces and legitimises it.

In this line, it would be interesting to reflect on the training of PE professionals, especially with respect to the beliefs of the students being trained, and through whose filter they will interpret what they are learning. Currently, training actions are not effective enough to change the beliefs, attitudes and values that the students bring with them (Carreiro et al., 2016; McKenzie, 2007; Villaverde et al., 2017). As Kirk and Oliver (2014) state, there should be a better interconnection between research and practice.

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