

## THE INFLUENCE OF PARENTS' PHYSICAL ACTIVITY ON PARTICIPATION IN SPORT. HOW DOES IT AFFECT SOCIAL CLASS INEQUALITY?

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### ABSTRACT

This article explores how parents' sporting activity mediates the effect of social class on an individual's sport participation. Drawing on the four *Surveys of Sports Habits* in Spain conducted by the CIS, the results confirm existing empirical evidence suggesting that belonging to a higher social class and having had physically active parents (either in the present or in the past) increases the probability of participating in sports. However, the analysis reveals that the positive effect of having parents who take part in sports currently is, under equal conditions, much stronger among social classes that are not at the top of the social structure. These findings show the equalizing effect of having physically active parents, so that the differences between the high professional class and the rest disappear, or even reverse, when it comes to participating in sport at least three times a week.

### KEYWORDS

Social stratification; Social class; Sport participation; Parental influence; Physical activity

## LA INFLUENCIA DE LA ACTIVIDAD FÍSICA DE LOS PADRES EN LA PARTICIPACIÓN DEPORTIVA. ¿CÓMO AFECTA A LA DESIGUALDAD DE CLASE SOCIAL?

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### RESUMEN

Este artículo explora cómo la actividad deportiva de los padres modera el efecto de la clase social en la participación deportiva de los individuos. A partir de las cuatro Encuestas de Hábitos Deportivos en España realizadas por el CIS, los resultados confirman que pertenecer a una clase social más alta y tener padres físicamente activos (tanto en el presente como en el pasado) aumenta la probabilidad de hacer deporte. Sin embargo, los análisis revelan que el efecto positivo de tener padres que practican deporte en la actualidad es, en igualdad de condiciones, más fuerte para las clases sociales que no están en la parte superior de la estructura social. Estos hallazgos muestran el efecto igualador de tener padres activos, de tal modo que las diferencias entre la clase profesional y el resto desaparecen, o incluso se invierten, cuando se trata de practicar deporte al menos tres veces por semana.

### PALABRAS CLAVE

Estratificación social; Clase social; Participación deportiva; Influencia parental; Actividad física

## INTRODUCTION

In recent years, research has revealed key facts about participation in sport across different countries and contexts (Van Tuyckom and Scheerder, 2010). Although there are signs that the effect of social class on practising sports has diminished in the last decades due to processes of individualisation (Yang et al., 1996; Scheerder et al., 2005a), many studies continue finding a strong correlation between both variables: the gap between social classes when practising sports still exists (Scheerder et al., 2002; Scheerder et al., 2005c; Scheerder and Vos, 2011; Kahma, 2012; Kraaykamp et al., 2013; Wheeler et al., 2017; Andersen and Bakken, 2018).

The differences in sports habits that stem from individuals' socioeconomic status have consequences for equality. For example, we know that practising sports organized in clubs fosters friendships and consolidates social networks, i.e. increases social capital (Seippel, 2006). It has also been found that participation in sport has multiple benefits for physical and mental health (Wankel and Berger, 1990; Sallis and Owen, 1998; Bailey, 2005, 2006; Eime et al., 2013), as well as quality of life, especially among young people (Moscoso Sánchez and Moyano Estrada, 2009). Sport has even been linked to better educational performance (Bailey et al., 2009). If some social classes participate more in sports than others, this inequality can have an impact on these other fundamental areas in people's lives. Several scientific studies have proven that one of the variables that most decisively increases people's sports practice is that parents are physically active (Scheerder et al., 2005c). This finding corroborates others that relate people's sports participation with parental attitudes and behaviour (Sage, 1980; Yang et al., 1996).

Sociology has repeatedly demonstrated that social class position influences the trajectories of individuals, their expectations, opportunities and, ultimately, their well-being, throughout their life cycle (Wright, 2000). In the last decade, there have been a number of attempts from social stratification researchers to identify which factors soften or intensify these class differences in areas as diverse as health (Wilkinson and Pickett, 2009; Kunts and Roskam, 2010), the labour market (Bernardi and Ballarino, 2016), the education system (Breen and Jonsson, 2005) and cultural consumption (Chan, 2010). If practising sports provides considerable benefits for people throughout their lives, it is important to analyse the possible factors that mediate class differences in this type of activity. In this article we try to shed more light on the way in which social class determines an individual's sports practice (Andersen and Bakken, 2018; Stefansen, 2018).

The aim of this article is to analyse the extent to which parents' sports habits have a different effect according to an individual's social class position.

Specifically, this study aims to identify to what degree having physically active parents reinforces or, on the contrary, reduces class differences among young people when practising sports. The main contribution of this work is to reveal parental influence as one of the possible levelling enhancers of inequality between social classes. In addition, this study employs the EGP social class scheme (Ganzeboom and Treiman, 2011), a classification rarely used in sports participation studies (Andersen and Bakken, 2018).

As far as we know, the present analysis is original, since it seeks to explore to what extent the association between social class and young people's sports activity is moderated by parents' sports activity, a relationship about which little is known. If we were to find that parents' sports participation benefits the upper class more than the working class, it would reveal an enhancer whereby the social class gap becomes even greater. On the contrary, if parents' sports practice benefits the working class more, this would reveal an important mediator of social equalization involving something as fundamental as sports.

## THEORETICAL BACKGROUND AND HYPOTHESES

### Social classes and sports participation

The relationship between social class and sports practice is widely documented. The upper classes practise more sport than the lower classes, a fact observed empirically since the 70s in the pioneering studies of Bourdieu (1979, 1984), drawing on data for France. Although some studies have shown that the influence of social class on sports has been declining for decades (Hasbrook, 1986; Taks et al., 1993; Scheerder et al., 2005a), research carried out in recent years has shown that the gap between certain classes and others is still significant.

In fact, Andersen and Bakken (2018) have found in Norway that for upper secondary students there are large differences between higher and lower social classes in the participation of organized sports. They also found that economic capital is the key mediator in this relationship. Kahma (2012), on the other hand, in a sample of Finnish adults, found great differences between the professional class and other classes, although in this case the differences between the professionals and the working class were mediated, above all, by an individual's educational level. Separately, Scheerder et al. (2005b) found no relationship between parents' socioeconomic status and the sports participation of adolescents in Flanders. Instead, they found persistent, albeit declining, differences between social classes in a study aimed at parents with elementary and high school children (Scheerder et al., 2005c). They discovered that social class was

—along with age and gender— the most influential factor in sports practice.

Wheeler et al. (2019) also found class differences in the participation of sport by English children. In their qualitative study they identified a gap between the lowest socio-economic class on the one hand, and the middle and upper classes, on the other. Likewise, in the south of Europe, class differences have been found to be persistent. Between 2005 and 2014, the gap between the upper class and the working class did not narrow, and in fact remains high (García Ferrando and Llopis Goig, 2006, 2017). In 2005, just over 51% of people in upper classes practised some sport, compared to 27% for the lower classes. By 2014, 57% of the upper/upper-middle classes were taking part in a sports activity at least once a week, compared to 29% of unskilled workers.

Although few researchers have explored the reasons for the correlation between social class and the probability of taking part in sports, the analyses that have taken place point fundamentally to three mechanisms. The first of these is economic capital. The upper classes have more financial resources, and these facilitate the practice of certain sports requiring expenditure that not everyone can afford. Secondly, the upper classes typically enjoy long-term professional employment relationships, characterised by greater contractual security and the performance of tasks that are less susceptible to monitoring than those of the working classes (Goldthorpe, 2007). This permits more autonomy and allows the flexibility to take part in sport or become more involved in their children's sports activities (Andersen and Bakken, 2018). These are advantages that the working classes cannot exploit to the same extent. Third, cultural capital can also mediate class differences in sports, since such capital moulds tastes and preferences with respect to leisure as well as to the importance and the meaning of sports (Bourdieu, 1979; Wilson, 2002; Sánchez García and Moscoso Sánchez, 2015). To a greater degree than the lower classes, middle and upper classes are endowed with cultural capital that tends to view sports as a way of taking care of the body, strengthening health and preventing diseases. According to this background, we expect that the higher one's social class, the more likely one is to be involved in sports (Hypothesis 1).

### Parental influences on physical activity in youth

The influence exerted by parents on children, especially at early ages, is also widely documented in the scientific literature. Parents' habits and behaviours, as well as their expectations, have a direct effect on the life and health of their descendants in such diverse and crucial aspects as, amongst others, educational performance, eating habits and family

formation in adulthood (Thornton, 1991; Davis-Kean, 2005; Scaglioni et al., 2008). This influence of parents on descendants also extends to sports habits; this relationship being key when predicting young people's sports participation (Sallis et al 2000, García Ferrando et al., 2002; Kraaykamp et al., 2013). However, the socialisation processes linked to sports may also differ depending on social class: within the higher class, the nuclear family has a stronger control on children's sport participation than amongst the lower social classes, with the latter group more exposed to the extended family, the physical education teacher and peers (Stuij, 2013).

Several studies have shown that parents' physical activity increases the probability of their children taking some form of physical exercise (Moore et al., 1991; Garcia Ferrando and Llopis Goig, 2006, 2011, 2017; Moscoso Sánchez and Moyano Estrada, 2009). The findings of Moore et al. (1991) are consistent with other studies that have identified mechanisms helpful in trying to understand this relationship. One of them points to the importance of role-modelling, a concept in social learning theory, which states that people learn from observation and model the behaviour of others. In this sense, the parents' example would be decisive. This explanation is used by Yang et al. (1996), who find that the children of physically active parents are more likely to play sports than the children of passive parents. In addition, this effect persists even when the descendants get older, a result also found by Kraaykamp et al. (2013), who confirm that intergenerational transmission of sport preferences is life-long.

A second mechanism often identified in the specialist literature is that parents who practise sports are more involved in their children's physical activities (Stefansen et al., 2013). After undertaking a thorough review of the empirical evidence, Beets et al. (2010) identify four dimensions of parental support for children's physical activity. Two are of a more tangible nature: one is related to transport to and from the sports field or club, the payment of licenses, equipment, etc. (instrumental), and the other relates to the presence and supervision of the parents themselves during the children's sports activity (conditional). These two dimensions can correlate with the families' socioeconomic status, since parents with more resources may have more time and money to cover costs and to spend time with their descendants (Duncan et al., 2005). Parents having access to transport and being able to make use of it has been identified as a key factor in adolescents' physical activity (Hoefer et al., 2001).

The other two dimensions identified by Beets et al. (2010) are intangible and refer to the parents' ability to motivate and encourage their children in sports (motivational), and the parents' ability to advise on and discuss the importance of sports and its benefits (infor-

mational). Along these lines, Trost et al. (2003) argue that parental support is fundamental, since parents can encourage their children's sports participation, even when the parents themselves don't take part in sport but are aware of its importance. On the other hand, Welk et al. (2003) point to the encouragement and motivation of parents as an indicator of social influence when explaining the strong influence parents actually do have on their children's sports practice, especially when they themselves are physically active.

Another possible mechanism through which parents can influence their children to practise sports has to do with genetic or physical fitness inheritance (Gustafson and Rhodes, 2006; Pérusse et al., 1989). Just as it is plausible to think that if their parents practise sports children can become fond of sports by imitation or by socialization itself, there may also be a transmission from parents to children related to the physical skills most conducive to sports. While it is the case that doing sports regulates physical condition, it is also true that having certain physical characteristics in itself—for example, not being obese, in addition to other factors such as heart rate or resistance to fatigue—facilitates the practice of sports. These factors may have a genetic or biological component that is also inherited (Soubry et al., 2015).

According to this background, we expect that people with physically active parents in the present to have a higher probability of practising sport than people whose parents were active in the past or are passive parents. We also expect that having parents who were once active increases the likelihood of playing sports compared to having parents who never practised sports (Hypothesis 2).

### **The intersection between social class and parent's sports participation**

In this article we are especially interested in the intersection between social class and parents' sports participation. The influence of parents' sports habits on children's physical activity according to social class may have two potential effects, as it has been shown in other studies about the effects of preschool education on learning outcomes for different social classes (Cebolla-Boado et al., 2014). Our hypotheses point to the distinction between substitute and complementary effects. In accordance with these concepts, we propose the following two scenarios.

On the one hand, even if everyone benefits from having active parents, lower-class people could benefit more from their parents practising sports (i.e. *substitute effect*). This is based on the idea that the upper classes start with certain sport-related advantages that the lower classes do not have, so the upper classes will benefit less from other factors that also increase the practice of sports; or, in other words, it

will produce lower marginal benefit. According to the mechanisms described above, members of the lower classes have less economic capital, tend to have jobs that offer less autonomy and less time to engage in sports activities, and have less cultural capital to care for their health through sports. If the lower classes start with these handicaps, then their parents' sports participation might be more decisive for them. Parents' sports practice would work as a substitute for not being upper class. The lower classes can take more advantage of intangible dimensions (motivational and informational) by virtue of which parents' sports participation increases the likelihood of one playing sports. According to this hypothesis, we would expect that, under equal conditions, the sports practice of parents has an equalizing effect among social classes (Hypothesis 3a). In other words, we expect a shorter social class penalty amongst those people with active parents.

On the other hand, although having physically active parents is positive for everybody, young upper-class people may benefit more (i.e. *complementary effect*). It has already been noted that the fact that parents practice sports means that they are more involved in their children's sports activities. Some of the ways they get involved are through assistance such as providing transport, paying membership fees in sports centres, purchasing equipment, etc. Parents of upper-class individuals are more able to do that than working class parents. These parents will use all their resources to ensure that their descendants practice sports: they will be more involved, more interested in finding quality spaces/clubs, spend more time taking them to the various activities and making them aware of their benefits, and will organise their lives around supporting the children in their activities. On the contrary, although lower class parents with an active physical life are more involved and therefore their descendants take part in sports, they do not have the same resources to make that positive influence effective. In short, according to this hypothesis, in relative terms, parents' sports participation would further accentuate inequality between social classes (Hypothesis 3b). In other words, we expect a larger social class penalty amongst those people with active parents.

Along with these last two hypotheses, we might add the null hypothesis (Hypothesis 3<sub>0</sub>) according to which the effect of having parents who practise sports would be the same for all people, in such a way that the class gap would be exactly the same regardless of the sports habits of the parents.

### **DATA, VARIABLES AND TECHNIQUES**

The data used in this study comes from Spain's Centre for Sociological Research (CIS), specifically, from the four *Sports Habits Surveys* (SHS) conducted in 1995, 2000, 2005 and 2010 (see Table A1 in Ap-

pendix), commissioned by the Higher Sports Council<sup>1</sup>. These surveys were aimed at people who were 15 years of age or older. The sample is representative for all of Spain. The union of the four data files provides a total of 26,526 cases. In this analysis we focus on the sports practice of men and women between 15 and 29 years of age, which gives a final sample of 7,323 observations. The reason to limit the sample to these ages is that one of the two decisive independent variables is parents' sports participation, so we have selected ages in which the majority of Spanish young people still live with their parents or, if they have become independent, they may continue to be under the recent influence of their parents. According to Eurostat (2007), the average age of emancipation in Spain is 29.0, an age close to that of other southern European countries such as Italy (30.1), Greece (29.4) and Portugal (28.9). The characteristics of the sample by social classes are shown in Table 1.

The key dependent variable of the study is to practise sport. The questionnaires used in the CIS's four surveys collected specific information from those who reported that they exercised. They were asked about the frequency with which they participated in sports. In particular, the following four options were distinguished: i) three times or more per week, ii) once or twice a week, iii) less frequently, and iv) don't know, or no answer. In this research, we consider someone as practising sports if they do so at least once a week, that is, if they fall into one of the first two categories. In addition, to check if the effects vary for more intensive sport practice, we have repeated the analysis with a more restrictive criterion: taking part in sports at least three times a week.

The key independent variables are social class and the sports habits of the parents. To measure social class, we have used the classification proposed by Erikson, Goldthorpe and Portocarrero (1979), which originally contained eleven categories. We have followed the operationalization proposed by Ganzeboom and Treiman (2011) and adapted it to the National Classification of Occupations. The original EGP class scheme has 11 categories: I. Large proprietors, higher professionals and managers; II. Lower professionals and managers; IIIa. Higher routine non-manual workers; IIIb. Lower routine non-manual workers; IVa. Small proprietors with employees; IVb. Small proprietors without employees; IVc. Self-employed farmers; V. Lower grade technicians and manual supervisors; VI. Skilled manual workers; VIIa. Unskilled and semiskilled manual workers; VIIb. Agricultural workers.

Given that there are only a few cases in some categories, we have found it convenient to group them into six social classes, as proposed by Andersen and Bakken (2018): 1) higher professionals (EGP class I); 2) lower professionals (II); 3) routine non-manual

employees (IIIab); 4) self-employed (IVabc); 5) manual supervisors and skilled workers (V and VI); and 6) unskilled workers and farm labourers (VIIa and VIIb). The two first categories comprise Erikson and Goldthorpe's service class.

These classes are derived from the occupation that each interviewee had at the time of the interview, or in the case of the unemployed or economically inactive, from the last occupation they had. If an individual has never worked, the social class assigned is that of the main person in the family home. In addition to these six categories, we have included a seventh, for unemployed people with previous work experience. It was not possible to construct this variable for 5% of the sample since they did not answer the corresponding questions. For this reason, another category entitled "no response" has been added to the analysis.

The question about occupation in the surveys is formulated as follows: "What is / was your current / last occupation? That is, what does / did your job specifically consist of? (Specify as much as possible the activities carried out, example: car repair mechanic, dental assistant, primary school teacher, etc.). We refer to your main occupation: the one for which you (or the head of the family) obtain the highest income". Examples of occupations have varied over time. Occupations are coded in three digits. The occupations were originally coded using the National Classification of Occupations of 1979 and 1994. These classifications have been recoded to adapt them to the EGP scheme and to make the categories comparable over time.

The second key variable is the sports practice of parents. The original formulation of the question in the surveys is as follows: "Could you tell me if your father/mother practises or has practised (in the event that he/she no longer practises, is older or has died) any sport?". The responses included four options: "Currently practising sports", "Practised sports in the past", "He/she has never practised sports", and "No answer". The question had to be answered both for the father's and the mother's activity. We have created a variable that contains the following categories: i) passive parents (none of them have practised sports), ii) Active parents in the past (at least one of them has practised some sport in the past, not in the present); iii) Active parents in the present (at least one of them practises sports at the time of the survey).

As control variables, in some models we have introduced age and age squared (to control for the potential non-linear effect of age), the educational level (primary, secondary and tertiary education), gender, municipality size, survey year and the number of sports infrastructures close to the dwelling of the interviewee (from none to more than seven).

**Table 1.**  
*Descriptive statistics of the sample by social class*

	EGP class scheme							
	I	II	III	IVabc	V-VI	VIIab	Unemp	N/A
<b>Parental activity</b>								
Active parents in the present	32.0	32.0	20.9	16.4	16.1	13.2	13.0	21.6
Active parents in the past	33.9	32.2	30.3	29.1	32.6	28.4	28.0	30.8
Passive parents	34.1	35.8	48.8	54.5	51.3	58.4	59.0	47.6
<i>Total (parental activity)</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>
<b>Age (average)</b>	22.8	22.8	22.7	21.2	21.7	21.7	23.8	20.1
<b>Education</b>								
Primary education or less	1.4	4.2	4.1	9.1	6.5	12.6	13.5	3.7
Secondary education	48.5	57.3	77.8	77.0	85.1	80.1	72.9	79.2
Tertiary education	50.1	38.5	18.1	13.9	8.4	7.3	13.6	17.1
<i>Total (education)</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>
<b>Women</b>	43.8	51.4	61.8	46.9	37.1	47.6	48.2	45.7
<b>Municipality size</b>								
<10,001 inhabitants	11.9	15.5	17.7	33.0	23.3	26.5	19.1	18.2
10,001-100,000	30.0	35.2	36.4	33.8	40.7	40.3	39.6	33.8
100,001- 400,000	30.3	27.9	27.1	21.8	23.5	23.1	25.5	37.2
>400,001	27.8	21.4	18.8	11.4	12.5	10.1	15.6	10.8
<i>Total (municipality size)</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>
<b>Years</b>								
Year 1995	16.5	17.2	19.6	29.1	22.9	24.6	23.1	22.3
Year 2000	22.6	20.1	25.1	23.8	25.6	20.6	10.8	23.8
Year 2005	32.8	37.0	34.3	24.6	30.6	28.4	23.8	33.1
Year 2010	28.1	25.7	21.0	22.5	20.9	26.4	42.3	20.9
<i>Total (years)</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>
<b>Sports facilities (average)</b>	3.8	3.7	3.7	3.4	3.6	3.4	3.4	3.8
N (EGP class scheme)	363	710	981	1,089	1,100	1,875	936	269

Source: own calculations based on the SHS.

Note: I=higher professionals; II=lower professionals; IIIab=routine non-manual employees; IVabc=self-employed; V and VI=manual supervisors and skilled workers; VIIab=unskilled workers and farm labourers.

In the sociology of sport, as in other fields, logistic regression has been the usual technique for analysing a dichotomous dependent variable (Kahma, 2012; Scheerder and Vos, 2011; Scheerder et al., 2005b). However, some methodologists have highlighted the relevance of using a linear probability model even to analyse a dichotomous dependent variable under certain conditions (Hellevik, 2009; Hippel, 2015; Breen et al., 2018). In the field of social stratification, its use is becoming more frequent (Bernardi and Cebolla, 2014a, 2014b; Martínez Pastor, 2017). Andersen and Bakken (2018) have applied it precisely in an analysis of the social stratification of sports practice.

The technique used in this article is a linear probability model (LPM) with robust standard errors. We have found that the predicted probabilities are distributed over the entire range between 0 and

1 (45% of cases between 0.20 and 0.80) – rather than concentrated at one of their extremes – which makes the application of a linear rather than a non-linear model more appropriate. One of the advantages of using an LPM is that the interpretation of the coefficients is easier and more intuitive than with the odds ratios and, unlike other non-linear techniques, allows comparison of the coefficients between different models (Mood, 2010). These types of models are increasingly applied to dichotomous variables for these reasons (Breen et al., 2018).

## RESULTS

Table 2 presents the probability of taking part in sport at least once a week. Model 1 contains only the effect of social class (Hypothesis 1 confirmed). This model supports the social stratification in sports

**Table 2.***Linear probability models on the likelihood of practising sport at least once a week. Individuals (15-29 years old)*

	Model 1	Model 2	Model 3	Model 4
<b>Social class</b>				
Higher professionals (ref.)				
Lower professionals	0.000 (0.031)	0.003 (0.030)	0.038 (0.029)	0.066 (0.052)
Routine non-manual	-0.145*** (0.030)	-0.113*** (0.029)	-0.028 (0.028)	0.014 (0.048)
Self-employed except EGP I	-0.090*** (0.030)	-0.045 (0.029)	-0.023 (0.028)	-0.021 (0.047)
Skilled manual	-0.086*** (0.030)	-0.046 (0.029)	-0.037 (0.028)	-0.024 (0.047)
Semi-unskilled	-0.155*** (0.028)	-0.102*** (0.027)	-0.065** (0.027)	-0.043 (0.045)
Unemployed	-0.182*** (0.030)	-0.127*** (0.030)	-0.064** (0.029)	-0.028 (0.048)
No response	-0.057 (0.039)	-0.027 (0.039)	-0.018 (0.037)	0.008 (0.059)
<b>Parental physical activity (PPA)</b>				
Passive parents (ref.)				
Active parents (past)		0.158*** (0.013)	0.111*** (0.013)	0.145** (0.059)
Active parents (present)		0.241*** (0.015)	0.188*** (0.015)	0.220*** (0.058)
<b>Social class*PPA</b>				
Lower professionals*Active (past)				-0.035 (0.073)
Routine non-manual*Active (past)				-0.076 (0.068)
Self-employed except EGP I*Active (past)				-0.003 (0.067)
Skilled manual*Active (past)				-0.033 (0.066)
Semi-unskilled*Active (past)				-0.022 (0.063)
Unemployed*Active (past)				-0.065 (0.069)
No response*Active (past)				-0.023 (0.087)
Lower professionals*Active (present)				-0.050 (0.071)
Routine non-manual*Active (present)				-0.066 (0.069)
Self-employed except EGP I*Active (present)				0.036 (0.068)
Skilled manual*Active (present)				0.023 (0.069)
Semi-unskilled*Active (present)				-0.058 (0.066)
Unemployed*Active (present)				-0.073 (0.074)
No response*Active (present)				-0.066 (0.091)
<b>Age</b>			-0.098*** (0.015)	-0.098*** (0.015)
Age <sup>2</sup>			0.002*** (0.000)	0.002*** (0.000)
<b>Primary education or less (ref.)</b>				
Secondary			0.079*** (0.020)	0.079*** (0.020)

	Model 1	Model 2	Model 3	Model 4
Tertiary			0.172*** (0.025)	0.173*** (0.025)
<b>Men (ref.)</b>				
Women			-0.286*** (0.011)	-0.287*** (0.011)
<b>Municipality size &lt;10,001 (ref.)</b>				
10,001-100,000			-0.017 (0.015)	-0.018 (0.015)
100,001-400,000			0.002 (0.016)	0.002 (0.016)
>400,001			0.004 (0.019)	0.003 (0.019)
<b>Year of observation 1995 (ref.)</b>				
2000			0.000 (0.016)	0.000 (0.016)
2005			-0.006 (0.015)	-0.007 (0.015)
2010			0.066*** (0.016)	0.066*** (0.016)
<b>Sports infrastructures 0 (ref.)</b>				
1			0.059*** (0.021)	0.059*** (0.021)
2			0.033 (0.021)	0.034 (0.021)
3			0.071*** (0.021)	0.072*** (0.021)
4			0.083*** (0.021)	0.083*** (0.021)
5			0.098*** (0.021)	0.099*** (0.021)
6			0.073*** (0.023)	0.073*** (0.023)
7			0.117*** (0.026)	0.117*** (0.026)
8			0.091*** (0.025)	0.091*** (0.025)
Constant	0.625*** (0.025)	0.495*** (0.026)	1.678*** (0.164)	1.656*** (0.167)
Observations	7,323	7,323	7,323	7,323
R-squared	0.014	0.051	0.157	0.158

Source: own calculations based on the SHS.

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

participation: although there are no differences between the two upper classes (higher and lower professionals), there exists a gap between these and the rest of categories. The biggest one is with non-manual workers (they practise sports 14.5 percentage points less than the high-level class), semi-unskilled workers (15.5 points less), and the unemployed (18.2 points less). Model 2 introduces, in addition to social class, the sports practice of parents. The effect of having at least one physically active parent is strong and significant (Hypothesis 2 confirmed). For those who have active parents, the probability of taking part in sports increases by 24 percentage points compared to those with passive parents. The likelihood for those with active parents in the past is also higher

(16 percentage points) compared to those with parents who have never practised any sport. Although somewhat lower than in the previous model, the gaps between social classes still exist after controlling for this variable.

Model 3 repeats the previous model but controlling for many more variables such as gender, educational level, age, survey year, the size of the respondent's municipality and the number of sports facilities in the area of residence. Taking all these factors into account, the differences between the upper classes and some of the others disappear; however, not so for semi-unskilled workers and unemployed people. Even controlling for all other variables, the probabil-



ity that these two groups take part in sports is still 6 points less than for the upper class. Models have been estimated by introducing each of these variables separately. In general, most of the reduction in differences between classes is due to educational level, although gender is also important in explaining the differences between the higher professionals and the non-manual classes.

Finally, model 4 includes, in addition to all the control variables, the interaction between social class and the parents' sports participation. This model is key in clarifying the research hypothesis. As shown in the table, none of the interactions is statistically significant. That is, the fact that one of the parents

takes part in sports increases the probability that the young person will also practise it. However, this positive effect is not more or less significant according to social class. According to this result, the parents' sports practice would not have a substitute or complementary effect on the inequality of social classes; that is, we would accept the null hypothesis ( $H3_0$ ).

What happens if we take more intensive sports participation as a dependent variable, for example, doing sport at least three times a week instead of once? Table 3 and Figure 1 present the results for this outcome. The logic of the models is the same as that described in Table 2. In model 1, where only the effect of social class is included, statistically sig-

**Table 3.**  
*Linear probability models on the likelihood of practising sport at least three times per week. Individuals (15-29 years old)*

	Model 1	Model 2	Model 3	Model 4
<b>Social class</b>				
Higher professionals (ref.)				
Lower professionals	0.099*** (0.031)	0.101*** (0.031)	0.123*** (0.030)	0.073 (0.050)
Routine non-manual	-0.046 (0.029)	-0.019 (0.029)	0.033 (0.028)	-0.004 (0.044)
Self-employed except EGP I	-0.006 (0.028)	0.033 (0.028)	0.042 (0.028)	-0.029 (0.044)
Skilled manual	0.016 (0.029)	0.051* (0.029)	0.047 (0.028)	-0.032 (0.044)
Semi-unskilled	-0.063** (0.027)	-0.017 (0.027)	-0.003 (0.027)	-0.054 (0.042)
Unemployed	-0.059** (0.029)	-0.011 (0.029)	0.019 (0.029)	-0.026 (0.045)
No response	0.025 (0.038)	0.051 (0.038)	0.048 (0.037)	-0.017 (0.056)
<b>Parental physical activity (PPA)</b>				
Passive parents (ref.)				
Active parents (past)		0.119*** (0.012)	0.083*** (0.012)	0.055 (0.058)
Active parents (present)		0.214*** (0.016)	0.173*** (0.015)	0.035 (0.058)
<b>Social class*PPA</b>				
Lower professionals*Active (past)				0.069 (0.073)
Routine non-manual*Active (past)				-0.022 (0.066)
Self-employed except EGP I*Active (past)				0.053 (0.066)
Skilled manual*Active (past)				0.050 (0.066)
Semi-unskilled*Active (past)				0.024 (0.063)
Unemployed*Active (past)				0.006 (0.067)
No response*Active (past)				0.022 (0.084)
Lower professionals*Active (present)				0.085 (0.072)
Routine non-manual*Active (present)				0.128*

	Model 1	Model 2	Model 3	Model 4
				(0.069)
Self-employed except EGP I*Active (present)				0.197***
				(0.070)
Skilled manual*Active (present)				0.244***
				(0.071)
Semi-unskilled*Active (present)				0.121*
				(0.066)
Unemployed*Active (present)				0.115
				(0.074)
No response*Active (present)				0.197**
				(0.093)
<b>Age</b>			-0.073***	-0.074***
			(0.015)	(0.015)
Age <sup>2</sup>			0.001***	0.001***
			(0.000)	(0.000)
<b>Primary education or less (ref.)</b>				
Secondary			0.050***	0.048***
			(0.018)	(0.019)
Tertiary			0.084***	0.082***
			(0.024)	(0.024)
<b>Men (ref.)</b>				
Women			-0.202***	-0.202***
			(0.010)	(0.010)
<b>Municipality size &lt;10,001 (ref.)</b>				
10,001-100,000			0.006	0.006
			(0.014)	(0.014)
100,001-400,000			0.016	0.015
			(0.015)	(0.015)
>400,001			0.001	-0.000
			(0.018)	(0.018)
<b>Year of observation 1995 (ref.)</b>				
2000			0.026*	0.025*
			(0.015)	(0.015)
2005			0.024*	0.022
			(0.014)	(0.014)
2010			0.096***	0.095***
			(0.015)	(0.015)
<b>Sports infrastructures 0 (ref.)</b>				
1			0.021	0.020
			(0.020)	(0.020)
2			0.039**	0.038**
			(0.019)	(0.019)
3			0.045**	0.044**
			(0.020)	(0.020)
4			0.045**	0.043**
			(0.020)	(0.020)
5			0.050**	0.050**
			(0.020)	(0.020)
6			0.042*	0.042*
			(0.022)	(0.022)
7			0.091***	0.090***
			(0.025)	(0.025)
8			0.056**	0.055**
			(0.024)	(0.024)
Constant	0.328***	0.219***	1.090***	1.155***
	(0.025)	(0.026)	(0.162)	(0.165)
Observations	7,323	7,323	7,323	7,323
R-squared	0.011	0.043	0.108	0.111

Source: own calculations based on the SHS.

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

nificant differences are appreciated, although in this case the second highest class (lower professionals) practises more sport than the higher professionals. Again, semi-unskilled workers and unemployed people practise less sport, with a difference of around 6 percentage points. According to these results, Hypothesis 1 is confirmed.

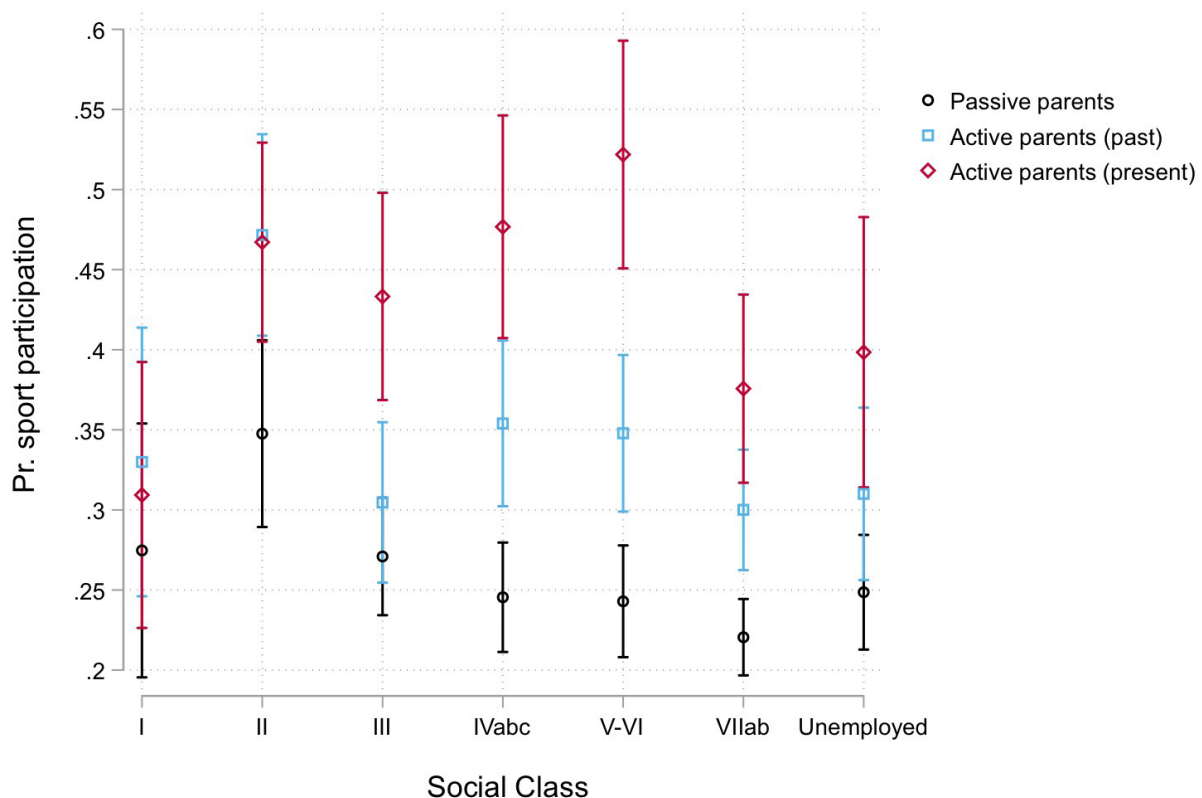
In model 2, when parents' sports participation is included, it can be seen that the effect of this variable is statistically very significant (Hypothesis 2 accepted): it increases the probability of an individual doing sport by 21 points. For those with active parents in the past, the likelihood also increases (by 12 percentage points) compared with those whose parents never practised any sport. In this second model the differences between the higher professionals, the semi-unskilled working class, and the unemployed disappear. When taking into account the other control variables (model 3), the gap between the upper class and the rest remains insignificant, except for the class immediately inferior to the higher professionals, that is, the lower professionals, which continues to present greater sport practice.

Finally, in model 4, the interaction between social class and parents' sports participation is included. In contrast with 'at least once a week' sports practice, the effects are now very significant. The fact that one of the parents is physically active at the moment of the survey increases the likelihood of playing sports in classes that are not at the top of the social structure (Hypothesis 3a confirmed). The results of model 4 show that the effect is greater among skilled manual workers and self-employed people. But it also has a stronger positive effect, albeit to a lesser extent, for semi-unskilled workers (all compared to the higher professionals).

Figure 1 represents the differences discussed above. This shows that parents' sports participation increases the probability of taking part in sport for all social classes; but in the case of those with active parents at the moment of the survey (red lines), much more strongly from class III (routine non-manual workers) to the unemployed. So much so that, surprisingly, among those whose parents practise sports, the probability of doing sports is greater for those who do not belong to the highest class. Having active parents in the past (blue lines) increases the

**Figure 1.**

*Average adjusted probabilities of practising sport at least three times per week. Individuals (15-29 years old) differentiated by social class and parents' physical activity\**



Source: own calculations based on the SHS.

\*Probabilities calculated from model 4 in Table 3.

likelihood of practising sport compared with having parents who have never practised; but it does so in such a way that the differences between social classes do not vary significantly.

In summary, if we take practising sports at least three times a week as a dependent variable, parents' sports participation levels out inequalities between class II (lower professional) and the rest, and even opens up a gap between the rest and the higher class to the detriment of the latter. These results support the study's hypothesis in which it was expected that parents' sports habits would have a substitute effect, by which the low probability of practising sport among young people of middle or lower social classes would be compensated for if any of the parents were physically active.

Why does the effect of parents' sports practice affect social classes differently only if individuals take part in sports at least three times a week instead of once? A possible explanation is based on our hypotheses about the interaction between social class and parents' sport participation and the type of sport that is practised at least three times per week. The data from the surveys indicate that the sports practised once or twice a week are mainly team sports, such as soccer, football, basketball, handball or volleyball. These sports are characterized by not needing much financial resource to practise them, except to pay for sports facilities, which are generally public in Spain.

On the other hand, most of the sports that are practised at least three times a week have to do with gyms. These are maintenance gymnastics, aerobic or anaerobic exercises, or group exercises in gyms. Given that public gyms are scarce in Spain, practising this type of sport incurs ongoing expense, such as paying tuition or a monthly fee, something that is not so common among those who do sports at least once a week. In this sense, non-professional classes (non-service classes in the EGP scheme) have fewer resources or may be more reluctant to spend money on sports in a sustained way, so for them the effect of the parents' sports practice can be a bigger boost than for the more professional classes, which have greater resources. This is what is known as a substitutive effect for non-service classes in our hypotheses. To verify this explanation further research will be necessary.

## CONCLUSION

According to the results of the article, sporting activity in Spain is more extensive among the professional classes (higher and lower) than in the other social classes. However, the interesting thing is the effect of having physically active parents. When predicting the probability of taking part in

sports at least once a week, having parents who practise sports increases that likelihood for everyone, equally. On the other hand, when we delimit the measure to practising sports at least three times a week, the parental influence in the sports practice of the individual is more decisive for the middle and lower classes. The premium received by these groups is so strong compared to the higher professionals that the initial 'penalties' are reversed to the detriment of the latter.

The findings of this study have revealed a variable that diminishes and even reverses the gap between social classes with respect to an activity as relevant as sports practice (measured by taking part in sports at least three times a week). The finding could well be summed up this way: if you play sports, your children will do so as much or more so than the upper classes. Young people who belong to the latter group have various advantages when it comes to practising sports, such as greater economic capacity and family support to carry out this type of activity. Individuals who are not at the top of the social structure, on the other hand, can compensate for this initial disadvantage if their parents are physically active. To date, the scientific literature has documented how parents' sports habits constituted one of the main determinants when it comes to predicting the sports participation of young people. What was not known until now is that this variable is much more decisive for the middle and working classes.

This study does not explain why the influence of parents' habits does not have the same equalizing effect when it comes to more moderate sport practice, that is, at least once a week. In this case, the impact of one of the parents playing sports is the same for all individuals, in such a way that the gap caused by social class is the same regardless of the parental activity. A possible reason is that people who take part in sports at least once a week are a much less selective group than those who do so at least three times a week and the premium of having physically active parents would be less decisive in predicting a moderate level of sports practice.

The implications of this study are not insignificant. Firstly, another benefit of sports participation can be added to the list of those already known: it levels the opportunity gap that exists between the social classes when it comes to young people taking part in sports. Secondly, and from a practical point of view, it provides evidence for the recommendation that sports participation be encouraged through *Sport for All* policies, but especially among adults who do not belong to the higher classes. According to this research, the intergenerational transmission of sports practice is stronger among the middle and working

classes. Promoting sports among the adult population will ensure an impact on its youth, without the need to invest directly in this group.

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## APPENDIX

**Table A1.**  
*Variables selected in each questionnaire*

Variable	Year 1995. Survey no. 2198	Year 2000 Survey no. 2397	Year 2005 Survey no. 2599	Year 2010 Survey no. 2833
Dependent variable: Practising sport	P2 and P5	P2 and P7	P2 and P7	P2 and P13
Variables used to create social class: Employment status and occupation (3 digits)	P62 and P63	P64 and P65	P68 and P69	P69 and P70
Parental physical activity	P53 and P53a	P57 and P57a	P61 and P61a	P60 and P60a
Age	P59	P61	P65	P66
Education	P60 and P60a	P62 and P62a	P66 and P66a	P67 and P67a
Sex	P58	P60	P64	P65
Number of sports infrastructures	P36	P39	P40	P36
Municipality size	Variable created by CIS and called TAMUNI in all datasets			

Note: All microdata available online at [www.cis.es](http://www.cis.es).

## NOTAS

- [1] Surveys on sports habits in Spain have a long tradition. The first dates from 1980. They have a five-year period and are promoted by the Spanish Higher Sports Council. Those exploited in this article were carried out by the Spanish Sociological Research Centre between 1995 and 2010. Currently the Sports Habits Survey is part of the National Statistical Plan. Its objective is to know sports fans and sports practice in Spain. The most recent edition, in 2015, introduced important methodological innovations, especially in the collection of information, and was not carried out by the CIS. Microdata are not publicly accessible for the latest edition.

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