

**LEISURE SPORTS HABITS IN SPANISH ADULTS:  
GENDER AND SOCIAL DIFFERENCES**  
**HABITOS DEPORTIVOS DE OCIO EN ADULTOS  
ESPAÑOLES: GÉNERO Y DIFERENCIAS SOCIALES**

**María Espada**

Universidad Politécnica de  
Madrid, Madrid. Spain.  
maria.espada@upm.es

**María Martín**

Universidad Politécnica de  
Madrid, Madrid. Spain  
maria.martin@upm.es

**Víctor Jiménez**

Universidad Camilo José Cela,  
Madrid. Spain  
vjdiaz-benito@ucjc.edu

**David Moscoso**

Universidad Pablo de Olavide,  
Sevilla. Spain  
dmoscoso@upo.es

**Emilio Jiménez-Beatty**

Universidad de Alcalá. Spain  
emilio.beatty@uah.es

**Antonio Rivero**

Universidad Politécnica de  
Madrid, Madrid. Spain  
antonio.rivero@upm.es

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**Abstract**

The aim of this study was to analyse sports habits in Spanish adults according to the temporal aspects of the activities, gender and social class. The research followed a cross-sectional quantitative methodology. The sample was made up of 3.463 people, 1.732 men ( $46.6 \pm 9.7$  years) and 1.731 women ( $44.5 \pm 9.6$  years). Twostep cluster and classification tree (Exhaustive-Chi-squared Automa-

tic Interaction Detection) multivariate models were used to identify the best predictor variables on the temporal aspects of the sports activities. The results show that women and older people have fewer sports habits.

**Keywords:** physical activity and sport; age; gender; educational level and social class.

### **Resumen**

El objetivo principal de este estudio fue analizar los hábitos deportivos de los adultos españoles según los aspectos temporales de las actividades, el género y la clase social. La investigación siguió una metodología cuantitativa y transversal. La muestra estuvo formada por 3,463 personas, 1,732 hombres ( $46,6 \pm 9,7$  años) y 1,731 mujeres ( $44,5 \pm 9,6$  años). Se ha realizado un método de análisis multivariante (análisis cluster) a través de la técnica del árbol de decisión (CHAID exhaustivo) para identificar las mejores variables predictivas en los aspectos temporales de las actividades deportivas. Los resultados muestran que las mujeres y las personas mayores son los grupos que tienen menos hábitos deportivos.

**Palabras clave:** Actividad Física y Deporte; edad; género; nivel educativo y clase social.

## **INTRODUCTION**

The increase in the adult population in the last few decades, together with the effect of the present economic crisis, and the decrease in income and consumption (Laparra et al., 2012), suggest the advisability of carrying out research to acquire more detailed knowledge of the repercussions that these changes may have on the habits and demand for sports services in the Spanish adult population. With regard to these changes, one of the tendencies underlined by García Ferrando and Llopis (2011) in their survey of sports habits in Spain was the increase in autonomous practice (75%) and the decrease in organised practice in both sexes and different age groups. This trend, which represents an important change in the Spanish market for sports services, was already visible in 1990 but has become more accentuated in the last few years.

From another perspective, it is worth mentioning how important it is for the large population of adults to incorporate regular sports practice into their lifestyles. This would have tremendous repercussions on their health and quality of life, as well as current and future health spending (Stearns et al., 2000), especially with regard to women as they have a longer life expectancy and greater prevalence of disease.

There is a great deal of scientific evidence that physically active people have better levels of physical health and lower rates of chronic illnesses (USDHHS, 2008). Similarly, many studies have shown the benefits that sport brings to those that practise it, not only at the physical level but also at the psychological, affective and social level (Strawbridge et al., 2002).

Recently in Spain it has emerged that people who practise sport report better health and improved well being and also see their lives in a more positive light; that sports practice improves this perception and that, together with age, work and family situation, sport is one of the four elements that most influence the perception of quality of life in the adult population (Moscoso et al., 2008).

All the international recommendations for health (World Health Organisation, Public Health Agency of Canada, The U.S. Department of Health and Human Services, U.K The National Health Service, among others), propose including measures and programmes of physical activities in public health polices in all countries to reduce the huge problems associated with sedentary behaviour. These measures and programmes are recommended especially for women and others social groups with more prevalence of a sedentary lifestyle.

If the results of the last Eurobarometer on sport in 2014 (European Commission, 2014) are analysed it can be seen that the weekly rate of sports practice (without including walking or dancing) in the adult European population between 40 and 54 years is 40% in men and 36% in women. This study also specifies that the rate of weekly practice in Spain has increased in the last few years to around 36% nearing the European average of 41%.

The successive sociological studies on sports habits in Spain carried out by the Centre for Sociological Research in 2011, directed by Manuel García Ferrando and financed by the High Council of Sport, have also highlighted the fact that in Spain, in the last few decades, the number of people practising a sport regularly and sporadically (including dancing but not walking) has increased to 43%, in the 35 to 44 age group has increased to 44% and 30% in the 44 to 55 age group. This reference source in Spain has also shown the evolution of the imbalances in sports practice between men and women in general (young people, adults and the elderly); imbalances which have been decreasing but which are still important: 31% of women practising versus 49.1% of men. Some of the factors that influence the lower level of practice of physical activities in women are more family and labour responsibilities, resulting in less free time (Martínez del Castillo et al., 2005), so it is interesting to ascertain the temporal aspects of sports habits in women to design suitable public health polices.

Given the scarcity of studies on the sports practice of adult men and women carried out after the start of the current economic crisis, and with the understanding that knowledge of their demands is one of the requirements for public and private sports organisations to be able to suitably adapt their provision of services, the objectives of the present study with respect to women and men between 30 and 64 years of age, were:

- To discover the sports habits of Spanish adults in relation to different temporal aspects and their distribution among the different social groups.
- To determine if there existed relations between the sports habits analysed and the different social groups, also studying possible gender differences.

## METHODOLOGY

### Participants

The size of the final sample was of 3,463 adults, 1,732 men (mean age 46.6 years  $\pm$  9.7) and 1,731 women (mean age 44.5 years  $\pm$  9.6).

Table I. Sociodemographic characteristics by gender

		Man	Woman
Age	30-39	34,6%	32,5%
	40-49	34,1%	32,5%
	50-59	22%	25%
	60-64	9,4%	10,2%
Level of completed education	Less than primary	7,8%	10,1%
	Non-university	64,4%	62,6%
	University	27,8%	27,2%
Social class	Upper	4,4%	5%
	Middle	60%	60,1%
	Lower	35%	34,9%

Source: Prepared by the authors

*Design and procedure:* The methodology consisted of carrying out structured interviews with a statistically representative sample of the women and men between 30 and 64 resident in Spain (47,265,321 people (100%), 23,966,965 women (50%) and 23,298,356 men (50%) according to the National Institute of Statistics Municipal Census for 2012). Given that this population is infinite or very numerous, working with a confidence interval of 95.5%, and assuming in the populational variance the worst case of  $p$  equalling  $q$ , the sampling margin of error was  $\pm 1.7\%$ . The sampling method chosen was multistage probability (Bryman, 2004). In *Stage one*, the sampling units were municipalities; that is, there was a random selection of municipalities in Spain, where the interviews with the adults were to be carried out using the questionnaire. Interviews were conducted in proportion to the number of adults residing in the municipalities in Spain, according to their population (less than 10,000 inhabitants; between 10,000 and 50,000; between 50,000 and 100,000; and more than 100,000).

In *Stage two*, the sampling units were the 348 streets at the start of each interviewer's route (there were 348 routes) in each of the boroughs selected in the previous stage. These streets were randomly selected. Each interviewer's route consisted of ten interviews; that is, the questionnaire was to be administered to ten adults, five women and five men (selection was made proportional to the gender distribution of the population of adults residing in Spain).

In *Stage three*, the sampling units were the adults ( $N=3,480$ ) that should be selected for interviewing in their homes, using the research questionnaire. Only one adult was interviewed in each home; the only selection criterion was that the person had to be between 30 and 64 years, and they could be either male or female, depending on the interviews pending in each route. Each participant was informed about the characteristics of the research, the anonymity of their answers and their protection according to the Data Protection Law. When the participants gave their verbal consent to participate in the study, we proceeded to apply the questionnaire. Finally, a total of 3,463 adults gave their consent to participate in the research.

The Ethics Committee from the research group on psychosocial aspects in physical activity and sport in the Faculty of Physical Activity and Sport Sciences, Polytechnic University of Madrid, Spain, approved the study protocol.

The field work was carried out during the months of October to December 2012, January and February 2013 and October to December 2013. The interviewers applied the written questionnaire in personal face-to-face interviews, in the adult's normal home. Since the sample is totally random and probabilistic, the results could be generalised to all Spanish adults.

*Instrument:* The instrument used to collect the data and which needed to fulfil the objectives of the study, was drawn up using the “*Questionnaire on physical activity and sport in women: habits, demand and barriers*” [Cuestionario de actividad física y deporte en mujeres: hábitos demandas y barreras] (Martínez del Castillo et al., 2005) designed to measure the demand for physical activity in adult women and other related variables, which has already been applied and validated in several studies.

*Statistical analyses:* Firstly, the analyses performed were: descriptive (a univariate analysis with frequency distribution tables and a bivariate analysis with relative frequency tables) and inferential, using Pearson's chi-squared test. The significance level was set at 0.05.

Secondly, a two-step clustering procedure, using indexes derived from principal component analysis, was used to disclose temporal aspects of sports habits within the time chosen for weekly practice, time of the day chosen for practising sport and duration of the sports session. Moreover, a classification tree analysis was used to determine temporal aspects of sports habits according to social differences. This technique allows splitting the sample into different subgroups (nodes) based on the impact of predictors (i.e. gender, age, social class, level of completed education) on temporal aspects of sports habits. Furthermore, this analysis provides visual information from the impact of each independent variable in a hierarchical tree model (Camp & Slattery, 2002; Schnell, Mayer, Diehl, Zipfel, & Thiel, 2014). The algorithm used was the exhaustive CHAID (Chi-square automatic interaction detection), appropriate for nominal dependent and independent variables. The chi-square test identifies the relationships between independent variables by completing three steps on each node of the root (merging, splitting and stopping) to find the analysts that exert the most influence on the dependent variable. The exhaustive CHAID examines all possible splits for each predictor and the merging step increases the search procedure to merge any similar pair until only one single pair remains (Schnell et al., 2014).

The following statistical specifications were considered: (i) significance level was set to  $P < 0.05$ ; (ii) Pearson's Chi-square was used to detect the relationships between independent variables; (iii) the maximum number of interactions was 100; (iv) the minimum change in expected cell frequencies was 0.001; (v) the significant values adjustment was done using the Bonferroni method; and (vi) the tree had a maximum of 5 levels in order to reduce the misclassification risk. Finally, the risk of misclassification was calculated as a measure of the reliability of the model (Schnell et al., 2014). Both statistical

analyses were performed using IBM SPSS statistics for Windows, version 20.0 (Armonk, NY: IBM. Corp.)

## Results

### *Unadjusted analyses*

Table II below shows that people between 30 and 39 years of age mainly practise sport during the week independently of gender, while for the rest of the age groups women mainly practise on weekdays while men practise on weekdays and at weekends. There was a low but statistically significant relation between age and time chosen for weekly practice and the age ranges 30 to 39 [ $\chi^2(4) = 58.346; p < .00; \eta^2 = .24$ ], 40 to 49 [ $\chi^2(3) = 40.285; \eta^2 = .20$ ], 50 to 59 [ $\chi^2(3) = 42.128; \eta^2 = .25$ ] and 60 to 64 [ $\chi^2(3) = 11.983; \eta^2 = .21$ ].

With regard to formal education, the people with a lower level of completed education practise sport mainly on weekdays and at weekends irrespective of gender. Women with a university and non-university education mainly practise on weekdays and men practise on weekdays and at weekends, although in the latter the percentages obtained are very similar to those for practise on weekdays. A moderate and statistically significant relation has been obtained between time chosen for weekly practice and people with less than primary education [ $\chi^2(3) = 14.113; \eta^2 = .26$ ] and a statistically significant but low relation with people with a non-university [ $\chi^2(3) = 98.302; \eta^2 = .23$ ], and university [ $\chi^2(3) = 35.532; \eta^2 = .20$ ] education.

Finally, it seems that men belonging to the upper social class state that they practise sport mainly on weekdays and at weekends, with similar percentages and women mainly during the week. Middle class people practise mainly on weekdays irrespective of gender. For their part the men from the lower class practise sport on weekdays and at weekends and the women on weekdays. There is no statistically significant relation between people belonging to the upper social class and time chosen for weekly practice [ $\chi^2(3) = 4.194; \eta^2 = .17$ ]. A statistically significant but low relation was observed between with people from the middle class [ $\chi^2(3) = 81.433; \eta^2 = .22$ ] and a moderate and statistically significant relation with people from the lower class [ $\chi^2(4) = 55.639; \eta^2 = .25$ ].

Table III shows that people of between 30 and 49 years of age mainly practise sport in the afternoon and evening irrespective of gender, as do women between 50 and 59, while men of the same age state that the morning is the time when they mostly practise sport. People between 60 and 64 chose the morning as the time when they mostly do sport although with a similar percentage to

**Table II. Moment chosen for weekly practice as a function of age, level of completed education and social class**

			Weekdays %	Weekends %	Weekdays and weekends %	When I can %
Age	30-39	Man	37.5	19.1	33.4	9.8
		Woman	59.1	7.0	25.0	8.9
	40-49	Man	35.9	18.2	37.1	8.8
		Woman	53.5	7.5	32.5	6.4
	50-59	Man	29.1	17.9	44.3	8.8
		Woman	48.2	5.6	42.3	3.8
	60-64	Man	30.2	6.9	55.2	7.8
		Woman	50.7	2.8	40.8	5.6
Level of completed education	Less than primary	Man	25.3	10.3	49.4	14.9
		Woman	43.5	5.2	47.8	3.5
	Non- university	Man	34.4	18.8	37.8	8.9
		Woman	54.5	6.6	32.9	6.1
	University	Man	37.2	16.2	38.4	8.2
		Woman	54.5	6.5	30.6	8.4
Social class	Upper	Man	40.6	15.6	40.6	3.1
		Woman	45.9	6.8	39.2	8.1
	Middle	Man	36.9	18.6	35.9	8.6
		Woman	55.0	6.6	31.3	7.2
	Lower	Man	31.0	15.8	43.4	9.6
		Woman	52.9	6.0	35.8	5.3

Source: Prepared by the authors

those practising in the afternoon and evening. Furthermore, there is a low relation but statistically significant with participants of between 40 to 49 years of age [  $2(4) = 12.606; =.11$ ] and 50 to 59 [  $2(4) = 18.150; =.16$ ]. However, there was no statistically significant relation with participants of 40 to 49 [  $2(4) = 12.606; =.11$ ], 50 to 59 [  $2(4) = 18.150; =.16$ ], 30 to 39 [  $2(5) = 7.392; =.08$ ], 60 to 64 [  $2(4) = 4.693; =.13$ ].

The moment of the day when sport is mostly practiced is in the afternoon and evening irrespective of gender and level of completed education. There is also a moderate and statistically significant relation between time of the day chosen for practising sport and the people with a lower level of completed education [  $2(4) = 17.150; =.29$ ], and a statistically significant but low relation with those who have a non-university [  $2(4) = 14.808; =.09$ ], and those who have a university education [  $2(4) = 10.631; =.11$ ].

With regard to social class, it can be seen that men from the upper class mainly practise sport in the mornings and women in the afternoon and evening. Middle class people mainly practise sport in the afternoon and evening. For their part men from the lower class carry out their sporting activities mainly in the morning and the women in the afternoon and evening, although in both cases the percentages are very similar. However, there was no statistically significant relation between time of the day chosen for practising sport and participants from the upper class [  $2(4) = 2.486; =.13$ ]; although, there was a low and statistically significant relation with people from the middle class [  $2(4) = 15.610; =.09$ ], and a moderate and statistically significant relation with the people from the lower class [  $2(4) = 19.479; =.10$ ].

Table IV shows that a greater percentage of women, irrespective of age, practise in one hour sessions. In contrast men practise sport in sessions lasting between one and two hours, with the exception of men from 60 to 64 who mostly state that they practise for one hour. A moderate and statistically significant relation has been obtained between the duration of the sports session and all age ranges 30 to 39 [  $2(4) = 78.394; =.28$ ], 40 to 49 [  $2(4) = 94.518; =.31$ ], 50 to 59 [  $2(3) = 53.356; =.29$ ], 60 to 64 [  $2(3) = 18.295; =.26$ ].

If we consider level of completed education, men mostly practise sport in sessions of between one and two hours, except those who have a university education, who mostly practise in one hour sessions. With regard to the women, irrespective of their level of completed education, they mostly practise in one-hour sessions. Here it can be seen that women with a lower level of completed education are less likely to practise for between one and two-hours and more than two hours. A moderate and statistically significant relation has been obtained between the duration of the sports session and people with less

**Table III. Time of the day chosen for practising sport as a function of age, level of completed education and social class**

			Morning %	Midday %	Afternoon and evening %	Night %	When I can %
Age	30-39	Man	24.4	3.8	39.8	7.3	24.6
		Woman	29.8	3.3	41.3	6.5	19.1
	40-49	Man	30.1	3.1	32.6	6.8	27.5
		Woman	31.2	3.8	40.7	5.3	19.0
	50-59	Man	37.2	2.0	28.4	5.1	27.4
		Woman	36.3	3.5	40.4	3.8	15.9
	60-64	Man	44.8	3.4	26.7	2.6	22.4
		Woman	38.0	7.0	35.2	1.4	18.3
Level of completed education	Less than primary	Man	29.9	0.0	33.3	4.6	32.2
		Woman	38.3	6.1	40.9	2.6	12.2
	Non-university	Man	32.4	2.6	32.7	6.7	25.6
		Woman	34.8	3.8	37.0	5.0	19.3
	University	Man	26.9	5.0	37.2	5.9	24.9
		Woman	26.8	3.3	46.4	5.5	17.9
Social class	Upper	Man	39.1	4.7	29.7	4.7	21.9
		Woman	31.1	4.1	41.9	2.7	20.3
	Middle	Man	28.8	3.6	35.3	6.7	25.6
		Woman	31.1	3.8	41.2	5.5	18.4
	Lower	Man	33.4	1.3	32.7	5.1	27.2
		Woman	34.4	4.2	39.3	4.2	17.9

Source: Prepared by the authors

**Table IV. Duration of the sports session as a function of age, level of completed education and social class**

			Less than an- hour %	An-hour %	Between one and two- hours %	More than two-hours %
Age	30-39	Man	8.4	30.0	40.2	21.0
		Woman	10.4	52.2	31.5	5.9
	40-49	Man	10.5	29.0	38.6	22.0
		Woman	9.1	57.5	26.5	6.6
	50-59	Man	7.1	34.8	35.5	22.6
		Woman	12.1	54.0	28.3	5.6
	60-64	Man	7.8	37.9	34.5	19.8
		Woman	9.9	59.9	23.9	6.3
Level of completed education	Less than primary	Man	6.9	25.3	37.9	29.9
		Woman	9.6	60.0	26.1	4.3
	Non-university	Man	7.3	28.3	41.0	23.3
		Woman	9.7	55.9	28.0	6.2
	University	Man	12.6	38.4	32.6	16.4
		Woman	12.0	52.2	29.4	6.5
Social class	Upper	Man	21.9	32.8	26.6	18.8
		Woman	12.2	58.1	21.6	8.1
	Middle	Man	7.7	32.9	38.8	20.5
		Woman	10.1	55.0	28.5	6.3
	Lower	Man	9.8	28.1	38.1	23.8
		Woman	11.0	55.0	29.4	4.6

Source: Prepared by the authors

than primary education [ 2 (3)= 36.943; =.42] and with people with a non-university education [ 2 (4)= 189.197; =.32], and a statistically significant but low relation with the people with a university education [ 2 (3)= 28.221; =.18].

With regard to social class, it can be seen that men from the upper class indicate that the duration of the sports sessions is mainly one hour while the men from the middle and lower classes mostly carry out sports activities in sessions of between one and two hours. Women irrespective of their social class practise sport in one hour sessions. Furthermore, there is a moderate and statistically significant relation between the duration of the sports session and participants from the upper class [ 2 (3)= 10.008; =.27], middle class [ 2 (4)= 125.048; =.27], lower class [ 2 (4)= 104.243; =.34].

### *Multivariable*

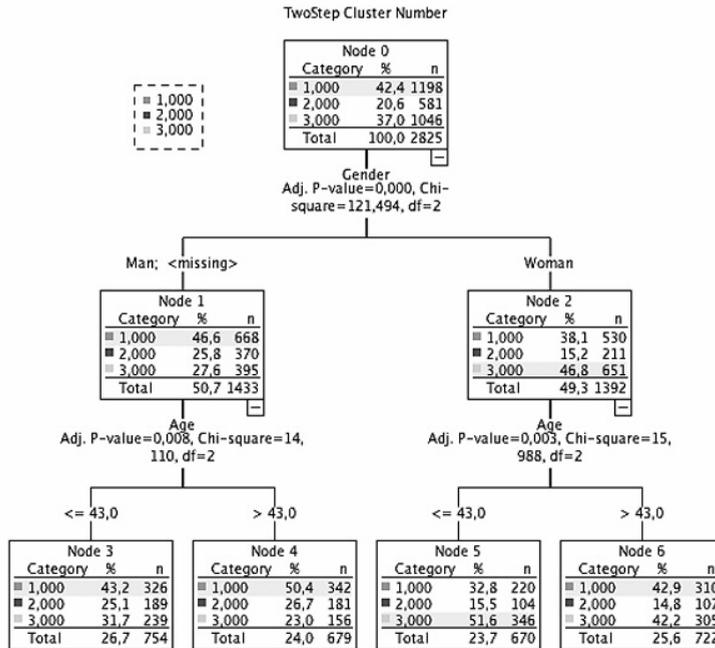
The analysis starts with the root node. All the predictor variables are tested for their significance in splitting the data set (Camp & Slattery, 2002). In Figure 1, the predictor “Gender” (a dichotomous variable) is the most significant and the tree splits using this variable, producing two child nodes, one for “Gender=man” and one for “Gender=woman. The p- value, chi-squared value, and degrees of freedom are also illustrated. At level 1 the “Gender=man” and “Gender=Woman” node splits further, and it divides based on “Age” which is an ordinal variable with two levels ( $\leq 43$  and  $>43$ ). The final tree has two levels and six terminal nodes.

The various categories that the target variable can take are illustrated within each node; there are three different categories according to time chosen for weekly practice; time of the day and duration of the sports session in the statistical model. The first category includes practice weekends and weekdays, between one- and two-hour sessions and at the moment of the day when they can. The second category includes practice weekdays, more than two hours and in the morning. The third category includes practice weekdays, an hour in the afternoon and evening.

The results showed only two significant inducing factors on temporal aspects of sports habits (two-stage tree). The following factors led to 6 nodes of contrasting groups, mainly established by gender (level 1) and age (level 2). Figure 1 shows the categories for the predictor variable and also the 6 nodes defined by the tree analysis classification.

Level 1 (root node) is split by gender. Men mostly practise sport weekends and weekdays, between one and two hours sessions and at the moment of the day when they can (node 1: 46.6% category 1; n=668) while women practise weekdays, an hour in the afternoon and evening (node 2: 46.8% category 3; n= 651).

Figure 1. Classification tree analysis (Source: Prepared by the authors)



At level 2, there were smaller differences in men than in women. The majority of the men, irrespective of their age, are included in the first category, practise weekends and weekdays, between one and two hour sessions and at the moment of the day when they can (node 3: 43.2% category 1; n= 326; node 4: 50,4% category 1; n=342). Women under 43 years old are included in the third category, practise weekdays, an hour in the afternoon and evening (node 5: 51.6% category 3; n=356) while women who are more than 43 (node 6: 42.9% category 1; n=310) are included in the first category, practise weekends and weekdays, between one and two hour sessions and at the moment of the day when they can. This classification tree model enabled explaining 46.9% of total variance.

## DISCUSSION

With regard to duration in all social groups men carry out longer sessions than women. In this line of research different studies show that men have a greater level of sports habits than women (Kaplan et al., 2001; Pitsavos et al., 2005; Aoyagi et al., 2009; European Commission, 2014; Maddah et al., 2014).

In both genders it can be seen that with advancing age the total number of hours devoted to weekly sport diminishes, coinciding with the results obtained by different authors (Nowak, 2011; Maddah et al., 2014). ahin et al. (2014) in a study carried out with adult women who practised sport, found that the 40-49 age group was the one that presented the highest level of sports habits. These authors indicate that the majority of women practise sport during one hour a week, coinciding with the results of the present study. In contrast, Nowak (2011) found that the great majority of adult women practise sport for between 1 and 2 hours (36.9%) or more (41.7%).

The present study revealed that men with a lower level of completed education and lower social class are those that practise the most hours of sport per week, as they scored higher percentages of practice in the sum of the variables “between one and two hours” and “more than two hours”.

Adult women revealed that as their level of completed education rises the number of hours spent practising sport per week also rises (between one or two or more hours), an aspect which is not seen in the men. Maddah et al. (2014) reported identical results on this topic in a study carried out in Iran. Similarly, in research by other authors it appears that women with a higher level of completed education have greater sports habits than those with a lower level (Pitsavos et al., 2005; Kruger, Carlson and Buchner, 2007; Nowak, 2011; Odunaiya, Aderibigbe and Oguntibeju, 2011). Equally in the study by ahin et al. (2014) it was revealed that the majority of women who practise sport have a level of completed education higher than primary studies, which may be due to the fact that adult women with a higher level of completed education have more information and are more aware about the benefits of practising sport. However, it has been observed that in men this is not the case. In this line of thought, Odunaiya et al. (2011) explain that in spite of the fact that most people (73.65%) are fully aware of the benefits of practising sport for their health, their sports habits are insufficient. However, different authors maintain that individual motivation together with knowledge can play an important role in improving sports habits (Bouchard and Rankinen, 2001; Norman et al., 2007; Odunaiya, et al., 2011).

With regard to social class, it seems that there is not a clear association between this variable and the duration of the practice session in either of the gender groups. Similarly, Pitsavos et al. (2005) also found that this variable had no relation with sports habits in a study carried out in Greece.

The time of day when most adults practise sport is in the afternoon and evening, irrespective of gender and level of completed education, coinciding with the results obtained in the survey of leisure time carried out by the Natio-

nal Institute of Statistics (Del Barrio, 2007). In this regard, account has to be taken of the fact that the time of day when the majority of adults have the possibility to practise is from 17:30 to 20:30 (Del Barrio, 2007). However, it can be seen that there are certain social groups who mostly practise in the morning: men from the upper class, men of over 50 and women of over 60. Moreover, it appears that in both genders the middle class and people with a higher level of completed education indicate higher percentages of practice in the afternoon. Furthermore, a higher percentage of practice in the morning is recorded with advancing age, both in the men and in the women, coinciding with the results obtained by Martínez del Castillo et al. (2009). Similarly, this result coincides with that obtained by Cohen-Mansfield, Marx, Biddison and Guralnik (2004) in a study of older adults, which indicated that this population group prefers to practise sport before midday. The present study revealed that most adult women of between 50 and 59 years practise sport in the afternoon and evening.

With regard to the moment at which sport is practised, the present study found that, in general, women of all ages are less likely to do sport on weekdays, although the highest percentages obtained in all cases is for “weekdays and weekends”. It can also be stated that with advancing age adults of both genders score a lower percentage on the items of doing sport at the weekend or when they can. This is possibly due to the greater amount of time that adults have on weekdays for leisure activities as they grow older. Similarly, Martínez del Castillo and Jiménez-Beatty (2002) found that the older adults preferred to practise on weekdays. The level of completed education did not appear to be a determinant variable in either gender for the selection of the day of the week for practising, although it is worth mentioning that a high percentage of men with a lower level of completed education state that they practise when they can in relation to the rest of the groups.

Finally, it can be seen that women state that they practise sport on weekdays. The results from the classification tree analysis identified gender as the most important predictor for determining temporal aspects of sports habits. This aspect may be due to the difference in family responsibilities (Odunaiya et al., 2011), because women may have to continue to play their traditional role of taking care of the housework, much of which is done during the weekend, a time when adults, in general, have fewer professional obligations.

Another aspect that could explain the difference in temporary organization of sport practice is the type of activity they practice, as women are involved in collective classes (body-mind, activities with music and maintenance gymnastics) and demand swimming, whilst men practice and demand more cycling,

running, outdoor sports, football, bodybuilding and fitness rooms. These last ones are more autonomous activities that are not conditioned by the offer schedule of the activities in sports facilities, what could explain the bigger temporary flexibility in the sport practice by men (Martín and Martín, 2014).

Regarding the limitations of the study, on the one hand, the field work was carried out during the months of October to December 2012, January and February 2013 and October to December 2013 so the potential cross-sectional design may limit assessment of the temporal and thus potential causal relation of the variables. Therefore, it would be interesting to continue working in this field in Spain in the future to be able to verify that the variables studied are stable over time. On the other hand, the sample is of Spanish adults so the results cannot be generalised to other countries. It would be interesting to study these variables in adults in other countries, with random and probabilistic sampling, to help them to better adjust their public health and physical activities policies.

## CONCLUSIONS

Within the most relevant conclusions of the present study it is remarkable that it is the gender variable the one that conditions to the greatest extent the temporary differences in sports habits. Men mostly practice sport during weekends and weekdays, for one to two hours sessions, at the moment of the day when they can, in the same way as women aged over 43. However, women under 43 years of age practice sport during weekdays, for an hour in the afternoon and the evening.

This difference may be due on one hand to the difference in familiar responsibilities, and on the other hand to the difference in the activities practiced, as men tend to prefer more autonomous and outdoor activities, whilst women prefer guided activities in sports facilities that are submitted to a determined schedule.

These results could be used by the different entities responsible for sports organisation to adapt their programmes to the temporal sports leisure habits of the adult population, bearing in mind the existing socio-demographic differences in some of the variables studied. This could improve the effectiveness of public health policies to reduce sedentary lifestyle in more sedentary social groups, and among them adult women.

## REFERENCES

- Aoyagi et al. (2009). Habitual Physical Activity and Physical Fitness in Older Japanese Adults: The Nakanojo Study. *Gerontology*, 55, 523-531.

- Bouchard, C. & Rankinen, T. (2001). Individual differences in response to regular physical activity. *Medicine and Science in Sports and Exercise*, 33, S446-S451.
- Bryman, A. (2004). *Social research methods*. New York: Oxford University Press.
- Camp, N., & Slattery, M. (2002). Classification tree analysis: a statistical tool to investigate risk factor interactions with an example for colon cancer (United States). *Cancer Causes & Control*, 13, 813-823. <http://dx.doi.org/10.1023/A:1020611416907>.
- Cohen-Mansfield et al. (2004). Socio-environmental exercise preferences among older adults. *Preventive Medicine*, 38, 804-811.
- Del Barrio, E. (2007). *Uso del tiempo entre las personas* [The use of people's time]. Madrid: IMSERSO. Ministerio de Trabajo y Asuntos Sociales.
- European Commission. (2014). *Special Eurobarometer 412. Sport and physical activity*. Bruselas: European Commission.
- García-Ferrando, M. & Llopis, R. (2011). *Ideal democrático y bienestar personal, Encuesta sobre los hábitos deportivos en España 2010* [Democratic ideal and personal well being, Survey on sports habits in Spain 2010]. Madrid: Centro de Investigaciones Sociológicas-Consejo Superior de Deportes.
- Instituto Nacional de Estadística.(2012). *INEbase. Padrón Municipal. Explotación a 1 de enero de 2012*. Instituto Nacional de Estadística [Municipal Census on 1<sup>st</sup> January 2012.]. <http://www.ine.es>. (accessed April 15, 2013).
- Kaplan et al. (2001). Demographic and Psychosocial Correlates of Physical Activity in Late Life. *American Journal of Preventive Medicine*, 21(4), 306-312.
- Kruger, J., Carlson, S.A., & Buchner, D. (2007). How active are older Americans? *Preventing Chronic Disease*, 4(3), 1-12.
- Laparra et al. (2012). *Crisis y fractura social en Europa. Causas y efectos en España*. [Crisis and the social divide in Europe. Causes and effects in Spain] Colección Estudios Sociales nº 35. Barcelona: Fundación La Caixa.
- Maddah et al. (2014). Prevalence of Regular Exercise among Iranian Adults: A Study in Northern Iran. *Journal of Physical Activity and Health*, 11,810-813.
- Martín, M. & Fierro, S. (Coords.). (2014). Necesidades, barreras e innovaciones en la oferta deportiva a las mujeres adultas en España [Needs, barriers and innovations in the offer sports for adult women in Spain]. Paper presented at Jornadas Nacionales Mujer y Deporte I+D+i. Madrid. Facultad de Ciencias de la Actividad Física y del Deporte. Universidad Politécnica de Madrid.
- Martínez del Castillo, J. & Jiménez-Beatty, J.E. (2002). Planificación de servicios de actividad física para las personas mayores [Planning physical activity services for older adults]. Paper presented at 1er Congreso Internacional de actividad física y deportiva para personas mayores. Málaga: Servicio de Juventud y Deportes de la Diputación de Málaga.
- Martínez del Castillo et al. (2009). The habits of physical activity of the older women in Spain. *International Journal of Sport Science*, 14, 81-93.
- Martínez del Castillo et al. (2005). *La actividad física y deportiva de las mujeres en el municipio de Madrid*. [Physical and sports activities in women from the Madrid

- municipality] Madrid: Dirección General de Igualdad de Oportunidades del Ayuntamiento de Madrid.
- Moscoso et al. (2008). *Deporte, salud y calidad de vida* [Sport, health and quality of life]. Barcelona: Fundación La Caixa.
- Norman et al. (2007). South African Comparative Risk Assessment Collaborating Group in 2000: Towards promoting health and preventing diseases. *South African Medical Journal*, 97(7), 637-641.
- Nowak, M. (2011). Physical Activity and its Associations with other Lifestyle Elements in Polish Women. *Journal of human kinetics*, 29,161-172.
- Odunaiya, N.A., Aderibigbe, A.A. & Oguntibeju, O.O. (2011). Physical exercise: knowledge, attitudes and habits of literate women in Westem Nigeria. *African Journal for Physical, Health Education, Recreation and Dance*, 17(4:2), 789-803.
- Pitsavos et al. (2005). Epidemiology of leisure time physical activity in socio-demographic lifestyle and psychological characteristics of men and women in Greece: the ATTICA Study. *BMC Public Health*, 5-37.
- Sahin et al. (2014). Regular Physical Activity habits in women. *International Refereed Academic Journal of Sportsm*,10(4), 88-97.
- Schnell, A., Mayer, J., Diehl, K., Zipfel, S., & Thiel, A. (2014). Giving everything for athletic success! – Sports-specific risk acceptance of elite adolescent athletes. *Psychology of Sport and Exercise*, 15, 165–172.
- Stearns et al. (2000). The Economic Implications of Self-Care: The Effect of Lifestyle, Functional Adaptations, and Medical Self-Care Among a National Sample of Medicare Beneficiaries. *American Journal of Public Health*, 90,1608-1612.
- Strawbridge et al. (2002). Physical Activity Reduces the Risk of Subsequent Depression for Older Adults. *American Journal of Epidemiology*, 156(4), 328-334.
- USDHHS (2008). *Physical Activity Guidelines Advisory Committee Report, 2008*. Washington, DC: United States Department of Health and Human Services. <http://www.health.gov/paguidelines/guidelines/>. (Accessed 18th October 2015)

## Authors

**MARIA ESPADA**, Doctora en Ciencias de la Actividad y del Deporte, Profesora Ayudante Doctor de la Facultad de Ciencias de la Actividad Física y del Deporte (INEF) de la Universidad Politécnica de Madrid, miembro del Grupo de investigación psicosocial en el deporte de la UPM. Sus principales líneas de investigación se enfocan en la educación y las ciencias sociales aplicadas a la actividad física y el deporte. ORCID: <https://orcid.org/0000-0002-3815-1037>

**MARÍA MARTÍN RODRÍGUEZ**, Doctora en Ciencias de la Actividad y del Deporte, Profesora Titular de la Facultad de Ciencias de la Actividad Física y del Deporte (INEF) de la Universidad Politécnica de Madrid y responsable de la

línea de investigación sobre Igualdad de género en el deporte del Grupo de investigación psicosocial en el deporte UPM. Sus intereses se orientan a la investigación social aplicada al deporte, con especial atención a las mujeres y la salud.

**VÍCTOR JIMÉNEZ** Graduado en Ciencias de la Actividad Física y del Deporte por la Universidad de Castilla-La Mancha, Máster en Organización, Gestión y Administración de Entidades y Organizaciones Deportivas por la Universidad Politécnica de Valencia, y Máster en Ciencias de la Actividad Física y del Deporte por la Universidad Politécnica de Madrid. Profesor en la Facultad de Educación y Salud de la Universidad Camilo José Cela y del Máster Universitario en Dirección de Organizaciones e Instalaciones de la Actividad Física y del Deporte. Sus líneas de investigación son la organización de programas de ejercicio físico en centros de trabajo.

**DAVID MOSCOSO.** Doctor en Sociología, Profesor Titular del Departamento de Sociología de la Universidad Pablo de Olavide. Sus líneas de investigación en el ámbito de la sociología del deporte son género y generación, inclusión y diversidad social, y desarrollo rural y deportes de naturaleza.

ORCID: <https://orcid.org/0000-0003-4135-1475>

**EMILIO JIMÉNEZ-BEATTY,** Doctor en Ciencias de la Actividad Física y del Deporte y Máster en Dirección de Organizaciones e Instalaciones Deportivas. Profesor Titular de Facultad de Medicina y Ciencias de la Salud de la Universidad de Alcalá. Especialista en planificación y gestión deportiva. Su actividad investigadora se ha centrado en el ámbito de la investigación social y organizativa en la actividad física y el deporte.

**ANTONIO RIVERO** Licenciado en CC de la Actividad Física y el Deporte (INEF, Madrid) Master en Dirección y Administración Deportiva (UCM-COE) Doctor y Licenciado en Geografía e Historia (U.C.M.) Profesora Titular de la Facultad de Ciencias de la Actividad Física y del Deporte (INEF) de la Universidad Politécnica de Madrid. Sus líneas de investigación son historia del deporte y empresas y organizaciones deportivas.

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