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Jerónimo ARAGÓN-VELA, Pedro Antonio DELGADO, Iris Paola IRIS PAOLA GUZMÁN-GUZMÁN, Jesús SALAS SÁNCHEZ, Melchor MARTÍNEZ REDONDO, Manuel LUCENA ZURITA, Julio HERRADOR SANCHEZ, Antonio José ANTONIO JOSÉ CARDONA LINARES, Pedro J. CONSUEGRA GONZÁLEZ, María SANTOS E CAMPOS, Ana DE LA CASA PÉREZ, Felipe CAAMAÑO-NAVARRETE, Daniel de la Cruz Manjón POZAS, Carmen CARMEN LATORRE-SEVILLA, Pedro A. LATORRE ROMÁN, Juan PÁRRAGA

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**Effect of COVID-19 confinement on physical activity patterns in relation to  
sociodemographic parameters in Spanish population**

Jerónimo Aragón-Vela<sup>1\*</sup>, Pedro Delgado-Floody<sup>2</sup>, Iris Paola Guzmán-Guzmán<sup>3</sup>, Jesús Salas-Sánchez<sup>4</sup>, Melchor Martínez-Redondo<sup>5</sup>, Manuel Lucena Zurita<sup>6</sup>, Julio Herrador Sánchez<sup>7</sup>, Antonio José Cardona Linares<sup>7</sup>, Pedro J. Consuegra González<sup>8</sup>, María Aparecida Santos e Campos<sup>8</sup>, Ana de la Casa-Pérez<sup>8</sup>, Felipe Caamaño-Navarrete<sup>9</sup>, Daniel de la Cruz Manjón-Pozas<sup>6</sup>, Carmen Latorre-Sevilla<sup>8</sup>, Pedro A. Latorre-Román<sup>8</sup>, Juan A. Párraga-Montilla<sup>8</sup>

<sup>1</sup>Department of Nutrition, Exercise and Sports (NEXS), University of Copenhagen, Copenhagen, Denmark; <sup>2</sup>Department of Physical Education, Sport and Recreation, Universidad de La Frontera, Temuco, Chile; <sup>3</sup>Faculty of Chemical-Biological Sciences, Universidad Autónoma de Guerrero, Guerrero, México; <sup>4</sup>Universidad Autónoma de Chile, Chile; <sup>5</sup>Consejería de Educación de Andalucía, CEIP Doctor Fleming, Malaga, Spain; <sup>6</sup>Sagrada Familia University Center, attached to the University of Jaén, Úbeda, Spain; <sup>7</sup>Department of Sport and Informatics, University of Pablo de Olavide, Sevilla, Spain; <sup>8</sup>Department of Didactics of Corporal Expression, University of Jaén, Jaén, Spain; <sup>9</sup>Faculty of Education, Universidad Católica de Temuco, Temuco, Chile

**\*Corresponding author:** Jerónimo Aragón Vela, Ph. D.

Department of Nutrition, Exercise and Sports (NEXS), University of Copenhagen,  
Copenhagen, Denmark

Email: jeroav@ugr.es

**Abstract**

**BACKGROUND:** The main purpose of the present study was to determine the socio demographic parameters associated to physical activity (PA) patterns changes during the COVID-19 lockdown in the Spanish population.

**METHODS:** Participants were recruited by sending a survey through various social network channels via the snowball method. A voluntary sample of 2430 individuals consisting of 1,203 men and 1,227 women (aged between 18 to 73 years old) from the Spanish national territory participated in this study. An online survey was performed to collect the information, which was tested through ad hoc analysis with different socio-demographic variables. Participants were a median of 34 years old (18-73 years old) with a mean BMI of 23.6 kg/m<sup>2</sup>.

**RESULTS:** The risk factors associated with the change in PA hours during confinement showed that to do sports ( $\beta$ ; -56.88, 95%CI; -79.35 to -34.40,  $P < 0.001$ ), male sex ( $\beta$  -34.78, 95%CI; -54.02 to -15.52,  $P < 0.001$ ) and the educational level (i.e., elementary school category) ( $\beta$ ; -54.21, 95%CI; -89.10 to -19.32,  $P = 0.002$ ) reported negative changes with hours of PA during confinement. By the contrary, the employment status (passive work) and to be student reported positive association (i.e., increase PA hours per week).

**CONCLUSIONS:** The COVID-19 lockdown led to a reduction PA patterns in Spanish population. Mostly men showed a drastic decrease in hours of PA compared to the women's group. Likewise, the groups of people with elementary and high education showed a decrease in hours of weekly PA, as well as unemployed people.

**Keywords:** Sex; employment status; education levels; pandemic; physical activity.

## Introduction

On March 11 (2020), the World Health Organization (WHO) <sup>1</sup> declared an official state of pandemic due to Coronavirus 2019 disease (COVID-19), which was originated in Wuhan (China). This disease, caused by SARS-CoV-2 virus, was recently described and its main symptoms are related to the respiratory system with a mild to moderate virulence, with a recovery period where no special pharmacological treatment should be needed <sup>2</sup>. However, people with underlying problems like cardiovascular diseases, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illnesses <sup>3</sup>. Fever, dry cough and feeling of tiredness are the most frequent symptoms of this disease <sup>2</sup>. Nevertheless, other less frequent symptoms detected in patients include headache, conjunctivitis, sore throat, diarrhea, loss of taste or smell, skin rash, or discoloration of fingers or toes <sup>2</sup>.

The COVID-19 has affected all countries in the labor, economic, productive, health, and consequently, people lifestyle. This pandemic has led to make strict decisions to control the chain of virus transmission, indicating physical distancing and significant reduction in mobility as the main prevention measures, calling on nations to implement quarantines <sup>4,5</sup>. In the case of Spain, on 14 March 2020, a strict confinement of the entire population was enforced, which lasted three months, besides limitations of free transit and physical distance of more than 1.5 meters per person in order to settle effective strategy to reduce COVID-19 infections <sup>6</sup>. Unfortunately, it brought with it a low level of physical activity (PA) <sup>7</sup>, which may affect the international recommendations of PA, namely: exercising for at least 30 minutes, 5 days a week or maintaining the recommendation of 150 minutes of activity at moderate intensity per week <sup>8</sup>. Indeed, several current studies have shown the importance of daily PA in combating the consequences of Covid-19 disease. Salgado-

Aranda et al., reported that a baseline sedentary lifestyle represents an important finding and suggests the utility of exercise in prevention of severe COVID-19 presentations <sup>9</sup>. In concordance with these results, Sallis et al., found that being inactive was a stronger risk factor for severe COVID-19 outcomes. In additions, meeting PA guidelines was strongly associated with a reduced odds for developing severe COVID-19 symptoms among infected adults <sup>10</sup>. Therefore, PA would piece an important role on the first line of defense against infections like SARS-CoV2, mediating several crucial functions such as inflammation and other immune responses, and may even counteract or mitigate viral adverse effects <sup>11</sup>.

Unfortunately, people's usual PA and sedentary levels have been altered because of the COVID-19 pandemic <sup>12</sup>. The factors and direction of association between PA and sociodemographic parameters are unclear. The upcoming general lockdown and the distress of possible infection have generated such a degree of confusion that no concrete sequence or profile are shown in different types of populations <sup>12</sup>. Therefore, understanding the profile of sociodemographic parameters such as sex, PA level, weight status, educational and employment level is an important help for public health authorities to carry out decisions to minimize the effects of the COVID-19 pandemic <sup>13</sup>. Indeed, with a positive attitude towards PA we might not only address with the strengthening of the immune system against any infection <sup>14</sup>, but also with the physical and mental consequences of COVID-19 <sup>15</sup>.

Particularly in Spain and another countries, due to these restrictions, during the quarantine period, practice any type of outdoor sport was totally prohibited, which made even harder the maintenance of physical capacity, essential for amateurs athletes concerned about both their physical and mental health<sup>16,17</sup>. PA represents the first line of defence against

metabolic diseases and infections, like SARS-CoV2, modulating several crucial functions such as inflammation and immune response and may counteract/mitigate viral adverse effects<sup>18</sup>. In this regards, prior exercise training and high levels of cardiorespiratory fitness are likely to be immunoprotective in patients who contract SARS-CoV-2<sup>19</sup>.

To date, little evidence about how lockdown could influence on PA levels according to several sociodemographic factors of people, which could directly affected or interacted with immunity and infection vulnerability after confinement. Therefore, the aim of the present study was to determine the socio demographic parameters associated to PA patterns changes during the COVID-19 lockdown in the Spanish population.

## **Material and methods**

### ***Study Design***

This cross-sectional study was based on a voluntary sample for convenience. 2,430 individuals participated from Spanish national territory, which consisted of 1,203 men and 1,227 women (49.5% and 50.5%, respectively), aged between 18 to 73 years. The main inclusion criteria were: i) age between 18–73 years old, ii) residents of Spain (Spanish citizens or foreigners residing in Spain), and iii) have internet access. The causes for exclusion were those individuals: i) unable to give consent, ii) with intellectual limitations, or iii) no internet access vi) inability to engage in physical activity. The study was completed in accordance with the Declaration of Helsinki (2013) and was approved by the ethics committee of the University of Jaén (DIC.20/5.TES).

### **Self-report measures**

An online survey was performed to collect the information which was validated by researchers from multidisciplinary groups. Following a bibliographic search and the working definitions of the concepts to be evaluated, 30 questions were designed. The items were sent to five experts (experienced sports science researchers) for their evaluation. They recommended the removal of 3 items. The data were collected via Google Drive. A pilot study with 20 participants was performed to check the operation of the test, analyzing the psychometric properties of the items, as well as the construct validity. Finally, the remaining 26 items were analyzed in the final group (2,430 individuals). The study was carried out through non-probability sampling. The participants were able to respond to the questionnaire via a link, which was shared through institutional emails, Facebook, Instagram, WhatsApp, and Twitter, in May and June 2020 (i.e., for eight weeks). The study was divided into three sections, including informed consent, sociodemographic data and PA patterns.

### **Study presentation and informed consent**

Participants were asked to be as honest as possible and to report reality in all areas faithfully. The answers were private and anonymous, without reporting the name or any personal information of the participant/individual. The questionnaire could be interrupted at any time before the submission process. Analysis was performed with responses only from the participants who answered the entire questionnaire and clicked “submit” at the end of the survey.

## Personal history

Personal history was focused on the personal background of the participants: sex (female, male), age (years), body weight (kg), and size (cm), race (Caucasian, Berbers, Indians and African American), autonomous community of Spain, education level (primary, secondary, university, technical education, postgraduate), number of people who shared the same place during quarantine, current occupation (student, unemployed, active worker (construction, warehouse worker, maintenance, etc...), passive worker (office worker, driver, telemarketer, etc), lifestyle - tobacco consumption (never, daily, occasional or ex-smoker) and alcohol consumption (teetotaler, moderate, excessive or ex-drinker). Moreover, participants were asked about their body mass and height, and BMI: weight (kg)/height (cm)<sup>2</sup> was calculated. The BMI was categorized according to the World Health Organization (WHO) criteria (< 18.5 kg/m<sup>2</sup>, underweight; 18.5–24.9 kg/m<sup>2</sup>, normal; 25.0–29.9 kg/m<sup>2</sup>, overweight; ≥ 30 kg/m<sup>2</sup>, obese) <sup>20</sup>.

## Physical Activity patterns

PA before quarantine was measured by short version of the IPAQ, Spanish version <sup>21</sup>. PA was defined as the level of self-reported engagement in moderate activity in a typical week: both days/week and hours/week and walking for 10 min (days/week). Moderate PA was defined as PA that causes heavier than normal breathing and may include carrying lightweights, riding a bicycle at normal speed, engaging in sports, or gardening. Additionally, the participants were asked what type of PA they had performed (according to classification of "*Consejo Superior de Deporte (España)*"). Moreover, the level of PA was considered according to the competition area (amateur, provincial, regional, national and international) and the number of PA hours per week was asked during the last 6 months

including quarantine time. In addition, we took into account the number of training sessions per week in the last six months. Finally, the participants were asked if they were infected with SARS-CoV-2 that causes Covid-19 disease and whether they continued with the PA program while suffering from symptoms related to Covid-19.

### **Data Analyses**

Statistical analysis was performed using STATA V.13.0. Normal distribution was tested using the Kolmogorov-Smirnov test. For continuous variables, values are presented as median and 5-95 percentiles. Differences between groups were determined using the U-Mann-Witney test. Qualitative variables are show as proportions, compared using Chi<sup>2</sup> test. To determine the association between nutritional and physical parameters, a model of logistic regression adjusted by sex and age was used, reporting relative risk (RR; with 95% CI). Values of  $P < 0.05$  were considered statistically significant.

### **Results**

Participants were a median of 34 years old (18-73 years old) showing an unbalanced distribution of the Spanish territory, with most of it belonging to the community of Andalusia (71.1%) (Figure 1).

----- Figure 1-----

The analysis was carried out in a Spanish population of 2,430 people aged 18 to 73 years. The proportion of men (49.55%) and women (50.5%) was similar. A 69.6% of the study sample reported university education level, besides a 64.7 % presented work activity (passive and active). The moderate consumption of alcohol was reported in a 72.8% and tobacco were reported in a 20.1 % of the study sample (Table 1).

## ----- Table 1 -----

The normal weight category was predominated in both sexes (women; 72.7% and men 58.3%), however, there were a higher frequency of overweight in men (women; 17.5 % vs men 34.2%), as well as obesity (women; 5.4% vs men 7.1%). The highest proportion of the study sample declared practicing sport (women; 91.3% and men 95.9%), the amateur way mainly (women; 83.2% and men 68.5%) (Table 2). In addition, there were significant differences between 6 months before of the lockdown vs the confinement period in PA levels, both men ( $P < 0.001$ ) and women ( $P < 0.001$ ) (Figure 2).

## ----- Table 3 -----

## -----Figure 2 -----

The Table 3 shows the effect of risk factors associated with the change in PA hours during confinement. Do sports ( $\beta$ ; -56.88, 95%CI; -79.35 to -34.40,  $P < 0.001$ ), male sex ( $\beta$  -34.78, 95%CI; -54.02 to -15.52,  $P < 0.001$ ) and the educational level (i.e., elementary school category) ( $\beta$ ; -54.21, 95%CI;-89.10 to -19.32,  $P = 0.002$ ) reported negative changes with hours of PA during confinement. By the contrary, the employment status (i.e., passive work) and to be student reported positive association (i.e., increase PA hours per week) (Table 3). According to the changes in the practice of PA (i.e., decrease of PA), men presented significant association with negative changes in the practice of PA (RR; 1.66,

95% CI; 1.40 -1.97,  $P < 0.001$ ) and those who practices sports (RR; 2.29, 95% CI; 1.86-2.83,  $P < 0.001$ ). By the contrast, the passive work status reported an inverse association with negative changes in PA (RR, 0.76, 95%CI; 0.61-0.94,  $P < 0.01$ ). According the level of studies, high studies (i.e., University) (RR; 1.43, 95%CI; 1.16-21.76,  $P = 0.0001$ ) reported positive association with decrease in PA during confinement (Table 3).

----- Table 3 -----

### Discussion

The aim of the present study was to determine the sociodemographic parameters associated to PA patterns changes during the COVID-19 lockdown in the Spanish population. The major findings of this study were Spanish population significantly reduced their training hours during the confinement period. It was highlighted the most important risk factors were gender, level of education, employment status, PA performed and type of athletic discipline. Furthermore, our results showed that weight status was not a risk factor during confinement. The present study provides novel data about PA patrons in Spanish population from an unusual setting of free movement restrictions.

During a state of lockdown, it is understandable that people change their lifestyle, which may lead to an increase in sitting time<sup>22</sup>, spending more time at home increases the likelihood of reducing the number of hours engaged in PA<sup>22</sup>. Accordingly a longitudinal study in United Kingdom with general population (5395 individuals) showed a significant drop in PA during COVID-19 lockdown, with a 37% reduction in weekly minutes of PA<sup>23</sup>. Moreover, Angosto et al.,<sup>24</sup> have reported a significant decrease of PA during confinement

in all the Spanish population. In concordance with these results, the current study showed that there was a drastic reduction in the hours of PA practice during confinement and focused on the promotion of health and quality of life. The suspension of all kinds of sports events may have been responsible for the Spanish population decreased their weekly training hours <sup>6,24</sup>.

Regarding education levels, the COVID-19 lockdown has completely changed the lifestyle of the Spanish population, through strict measures that have forced social distancing and self-isolation. Practically, this meant gyms, public parks, sports grounds, outdoor playing areas, and all types of activity by sports clubs were closed <sup>24</sup>. However, these restrictions could have different effect depending on the level of education. Indeed, our current data report that university individuals did not showed a decreased of PA hours and negative change. However, elementary and high school population presented a significant decrease of PA hours and drastic negative change. In concordance with our results Saavedra et al., with Spanish women reported that higher level of education devote a greater part of their leisure time to regular PA <sup>25</sup>. Likewise, Pulkkinen et al., <sup>26</sup> reported that leisure time PA levels are higher among the high educated when compared to the low educated. Indeed Korzeniowska et al., <sup>27</sup> and Saavedra et al., <sup>25</sup> reported that low-educated individuals should be a significant target group for health education activities <sup>27</sup>. Our findings corroborate previous studies showing that those who are poorly educated do not prioritize healthy lifestyle habits <sup>28</sup>. Thus, in line with results of Droomers et al., <sup>29</sup> higher educated status, despite the adverse circumstances that may arise, such as lockdown, individuals are more aware of the benefits of PA. Therefore, the pandemic may have different effects depending on socio-demographic parameters such as level of education. Thus, in future periods of

lockdown Spanish health-related promotion policies should stress the importance of regular PA in social classes with low levels of education. Indeed, with appropriate promotion of PA programmes, it can lead to an increase in the number of hours or intensity (moderate-vigorous) of PA in general population, even in COVID-19 lockdown<sup>30</sup>.

In addition, in general terms, the PA decreases could also be due to the sudden closure and access to available resources, such as, sports facilities, green spaces, parks, etc., and the lack of time to react during the first weeks of uncertainty in this new situation<sup>31</sup>. Regarding gender differences, recently, García-Tascón et al., reported that men tended to be more active than women, possibly because there may be gender differences in the motivations for PA practice<sup>6</sup>. However, our results showed contradictory data. Men showed a significant association with negative changes in PA and greater reduction of training hours in their PA patterns, compared to women. In line with our results, Castañeda-Babarro et al.,<sup>31</sup> reported that Spanish men significantly reduce their moderate PA, compared with Spanish women during confinement. Likewise, in other countries such as Italy, a study with general population (2524 participants) through IPAQ test, it was reported that a significant decrease in overall, moderate and vigorous PA as well as walking during lockdown, with a magnitude that was significantly larger in men than in women<sup>32</sup>. Equally, a study carried out in Greece (8495 participants), inactivity increased dramatically, being the population group with the highest severity men<sup>33</sup>. These results could be due to the fact that men preferentially practice team sport, in the gym or outdoor, always with a tendency to competition<sup>6,32,34</sup>, which was not possible during the confinement. However, women prefer to perform non-competitive PA, directed activities and relaxing activities, more ideal activities to perform in closed spaces<sup>35</sup>, during confinement. This theory is supported by

our results, given that in the sports team category (Matveiev classification) men showed significantly higher values than women. However, in athletic activities where there is mainly a search for improved health, such as acyclic or complex and multiples test, a higher preference for women than for men it was highlighted. Similarly, according to the Bouet classification, women showed a higher preference for athletic and gymnastic exercises than men. Accordingly, in agreement with García-Tascón et al.,<sup>6</sup> and Rodríguez-Larrad et al.,<sup>36</sup> it seems that women are more autonomous and have greater capacity to adapt than men in these circumstances.

On the other hand, the confinement and the closure of sports facilities might have affected number of PA and negative change in accordance with employment status. Our current study reported that students increased their hours PA. In contrast our results, Gallé et al.,<sup>37</sup> and Rodríguez-Larrad et al.,<sup>38</sup> showed that students slightly decreases the time spend on moderate and vigorous PA. Although, it was highlighted an increase in high intensity interval training and mind-body activities exercises and it was retained strength exercises during week<sup>38</sup>. These contrasting results were possibly due to the fact that the vast majority of our participants were amateur athletes, a population that is aware of the benefits of PA and whose main goal is to the search for health and quality of life<sup>39</sup>. Regarding passive employees, it found an increase their weekly hours of PA and showed an inverse association with negative changes in PA. As already argued in previous sentences, this results was probably due to the fact that most of the participants are amateur athletes. For this reason, they are aware of the serious problems that a totally passive occupation could cause our healthy status, and despite the situation generated by the COVID-19 lockdown, it not only maintain the hours of PA but also increase them in their leisure time. However,

those unemployed individuals significantly reduced their weekly hours of PA. Recently, a study carried out during the COVID-19 pandemic, authors reported that unemployed individuals showed raised levels stress and depression<sup>40</sup>. Therefore, it is difficult to expect subjects with elevated levels of depression to increase or maintain their weekly hours of PA. Thus, the unemployed should be encouraged to be active, as too much sedentary behavior is not healthy and can lead not only to physical health problems, but also increase already existing mental health issues<sup>41</sup>.

Regarding the weight status, it was to be expected that obese and overweight subjects would decrease their hours of PA per week. In line with this theory, a longitudinal observational study reported that obese children and adolescents were decreased even more inactive during COVID-19 lockdown<sup>42</sup>. Likewise, Pellegrini et al.,<sup>43</sup> showed a reduction both in their exercise level and, likely, in PA during work in obese adults. However, our results showed that weight status was not a risk factor for a decrease in hours or negative changes in PA. These inconsistent data could be due to the fact that the vast majority of respondents had a normal weight status.

### ***Strength and limitations***

The main strength of this study is to examine a large and extensive sample of Spanish adults (participation from all Spanish regions) with a good distribution of men (49,5%) and women 50.5%). However, this study should also be understood assuming a number of limitations. The main limitation was its cross-sectional design, indeed it is recommended that the factors be evaluated through a longitudinal study that firmly certifies the associations found in the present study. Another limitation would be that the body weight

and PA level were self-reported, which could mean that these data are underestimated or overestimated. Likewise, the results presented could have been regardless of the COVID-19 confinement. In addition, a balance has not been reached in the Spanish regions, nor has it reached all sectors of the population.

### **Conclusion**

In this study, we tried to ascertain the influence of confinement on the PA patterns in Spanish population. Thus, the current study concluded that sex, level of education, employment status and PA prior to confinement were the factors that most influenced the reduction in PA during confinement. However, pre-confinement weight status did not show any influence on PA levels. Considering the immunoprotective effect of PA, the significant reduction in PA levels according to the socio-demographic profile described in this study, it could provide interesting information on the prevalence of infection and severity of COVID-19 disease immediately after confinement. Therefore, these results will help design strategies for each sociodemographic parameters to promote PA and reduce sedentary behaviour during confinement periods.

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### **Conflicts of Interest**

The authors declare no conflict of interest.

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### ***Authors' contributions***

Conceptualization, J.A-V. and P.A.L-R.; methodology, J.A-V. and P.A.L-R.; software, P.D-F and I.P.G\_G.; validation, J.A-V., J.S-S. and M.M.R.; formal analysis, I.P.G\_G.; investigation, J.A-V., J.A.P-M, and P.A.L-R.; resources, M.L-Z.; data curation, J.H-S.; writing—original draft preparation, J.A.P-M., and J.A-V.; writing—review and editing, P.A.L-R.; visualization, P.A.L-R and P.J.C-G.; supervision, A.J.C.L., and F.C-N.; project administration, C.L-S, M.A.S.E.C and A.C.P.; funding acquisition, D.M.P. All authors read and approved the final version of the manuscript.

## TABLES

<b>Table 1.</b> General characteristics of the population in study	
Variables	Total (n=2430)
<i>Age<sup>a</sup></i>	34 (20-56)
<i>Sex n (%)</i>	
Women	1227 (50.5)
Men	1203 (49.5)
<i>Education levels n (%)</i>	
No education	5 (0.2)
Elementary	26 (1.1)
Secondary school	182 (7.4)
High school	526 (21.7)
University	1691 (69.6)
<i>Employment status n(%)</i>	
Student	566 (23.3)
Active labor/work	660 (27.1)
Passive labor/ work	913 (37.6)
No employment	291 (12.0)
<i>Smoking/ tobacco use n(%)</i>	
No	1560 (64.2)
Occasional	217 (8.9)
Daily	273 (11.2)
Ex-smokers	380 (15.7)
<i>Alcohol consumption n(%)</i>	
No	544 (22.4)
Moderate	1770 (72.8)
Excessive	56 (2.3)
Ex-drinker	60 (2.5)
<i>Housing company in confinement (%)</i>	
None	175 (7.2)
1 person	607 (25.0)
2 persons	610 (25.1)
3 persons	736 (30.3)
≥ 4 persons	302 (12.4)

The data showed represent number (proportion), and median and 5 and 95<sup>th</sup> percentile.

**Table 2.** Comparison of anthropometric and physical activity parameters according to sex

Variables	Total n=2430	Women n=1227 (50%)	Men n=1203 (49%)	p value
Age (years) <sup>a</sup>	34 (20-56)	32 (19-55)	36 (20-56)	<b>&lt;0.001</b>
<b>Anthropometric parameters</b>				
Weight (k) <sup>a</sup>	70 (51-95)	60 (49-84)	77 (62-100)	<b>&lt;0.001</b>
Height (m) <sup>a</sup>	1.7 (1.57-1.85)	1.64 (1.55-1.74)	1.77 (1.67-1.88)	<b>&lt;0.001</b>
BMI (kg/m <sup>2</sup> ) <sup>a</sup>	23.6 (19.2-30.5)	22.5 (18.6-30.0)	24.4 (20.6-30.9)	<b>&lt;0.001</b>
<b>Category, BMI<sup>b</sup></b>				<b>&lt;0.001</b>
Underweight (<18.5)	59 (2.4)	54 (4.4)	5 (0.4)	
Normal range (18.5-24.9)	1594 (65.6)	892 (72.7)	702 (58.3)	
Overweight (25-29.9)	626 (25.8)	215 (17.5)	411 (34.2)	
Obese (≥30)	151 (6.2)	66 (5.4)	85 (7.1)	
<b>Physical parameters</b>				
<b>Do Sport<sup>b</sup></b>				<b>&lt;0.001</b>
No/None	156 (6.4)	107 (8.7)	49 (4.1)	
Yes	2274 (93.6)	1120 (91.3)	1154 (95.9)	
<b>Level do sport<sup>b</sup></b>				<b>&lt;0.001</b>
Amateur	1845 (75.9)	1021 (83.2)	824 (68.5)	
Professional	195 (8.0)	44 (3.6)	151 (12.6)	
Regional athlete	143 (5.9)	27 (2.2)	116 (9.6)	
Nacional athlete	76 (3.1)	23 (1.8)	53 (4.4)	
International athlete	15 (0.6)	5 (0.4)	10 (0.8)	
<b>Matveiev classification</b>				<b>&lt;0.001</b>
<b>None</b>	156 (6.4)	107 (8.72)	49 (4.07)	
Acyclic	815 (33.5)	523 (42.62)	292 (24.27)	
Resistance	854 (35.1)	364 (29.67)	490 (40.73)	
Sports team	380 (15.6)	92 (7.50)	288 (23.94)	
Combat	34 (1.4)	13 (1.06)	21 (1.75)	
Complex and multiples test	191 (7.9)	128 (10.43)	63 (5.24)	
<b>Bouet classification</b>				<b>&lt;0.001</b>
<b>None</b>	156 (6.4)	107 (8.72)	49 (4.07)	
Athletic and Gymnastic	1899 (78.1)	1013 (82.56)	886 (73.65)	
Ball	257 (10.6)	56 (4.56)	201 (16.71)	
Combat	34 (1.4)	13 (1.06)	21 (1.75)	

Nature	84 (3.5)	38 (3.10)	46 (3.82)
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Data showed represents <sup>a</sup> median and 5<sup>th</sup> - 95<sup>th</sup> percentile, <sup>b</sup> Number and proportions. P value <0.05 were considerate statistically significant.

Table 3. Standardized  $\beta$  coefficient of simple linear regression and other logistic regression ratios

Variable	PA hours	Negative change / Decrease
Demographic and anthropometric variables	$\beta$ coefficient (95%CI) P Value	RR (95%CI) P Value
<b>Sex</b>		
Female	1.0	1.0
Male	<b>-34.778 (-54.02 to -15.52), &lt;0.001</b>	<b>1.66 (1.40-1.97), 0.024</b>
<b>Status corporal</b>		
Underweight /Normal weigh	<b>1.0</b>	<b>1.0</b>
Overweight	-5.90 (-28.66 to 16.85), 0.61	1.70 (0.91-2.95), 0.082
Obesity	36.66 (-4.09 to 77.42), 0.078	1.36 (0.69-2.68), 0.361
<b>Housing company in confinement</b>		
3-4 persons	1.0	1.0
1-2 persons	-3.64 (-23.74 to 16.45), 0.72	1.04 (0.87-1.24), 0.630
Alone	1.02 (-37.85 to 39.89), 0.95	1.05 (0.74-1.49), 0.753
<b>Employment status n(%)</b>		
Active work	1.0	1.0
No employment	<b>-40.20 (-73.39 to -7.014), 0.018</b>	1.17 (0.87-1.57), 0.279
Passive work	<b>39.86 (15.60 to 64.11), 0.001</b>	<b>0.76 (0.61-0.94), 0.013</b>
Student	<b>36.72 (5.87 to 67.57), 0.020</b>	0.92 (0.70-1.22), 0.601
<b>Education levels n (%)</b>		
University	1.0	1.0
High school	<b>-22.53 (-46.14 to 1.09), 0.062</b>	<b>1.43 (1.16-1.76), 0.001</b>
Elementary	<b>-54.21 (-89.10 to -19.32), 0.002</b>	1.33 (0.98-1.01), 0.062
<b>Lifestyle variables</b>		
<b>Tabacco</b>		
No smoker or ex-smoker	1.0	1.0
Occasional	18.64 (-15.37 to 52.67), 0.28	0.83 (0.63-1.09), 0.189
Daily	-3.26 (-33.89 to 27.36), 0.83	1.16 (0.86-1.57), 0.318
<b>Alcohol consumption</b>		
No or ex-drinker	1.0	1.0
Moderate	10.96 (-11.36 to 33.29), 0.33	0.95 (0.78-1.15), 0.61
Excessive	-45.81 (-112.23 to 20.61), 0.17	1.49 (0.82-2.71), 0.18
<b>Do sport</b>		
No	1.0	1.0
Yes	<b>-56.88 (-79.35 to -34.40), &lt;0.001</b>	<b>2.29 (1.86-2.83), &lt;0.001</b>
<b>Level sport</b>		
None	1.0	1.0
Amateur	<b>-30.97 (-53.76 to -8.18), 0.008</b>	<b>1.53 (1.24-1.88), &lt;0.001</b>

Professional	<b>-75.01 (-113.71 to -36.31), &lt;0.001</b>	<b>2.77 (1.94-3.96), &lt;0.001</b>
National/international Athlete	<b>-104.2 (-140.62 to -67.81), &lt;0.001</b>	<b>4.37 (3.09-6.19), &lt;0.001</b>

**Matveiev classification**

None	1.0	1.0
Acyclic	<b>-40.8 (-72.22 to -9.39), 0.011</b>	<b>1.40 (1.05-1.86), 0.020</b>
Resistance	<b>-39.93 (-69.71 to -10.16), 0.009</b>	<b>1.61 (1.22-2.11), 0.001</b>
Sports of team	<b>-41.94 (-77.35 to -6.53), 0.020</b>	<b>2.09 (1.52-2.89), &lt;0.001</b>
Combat	-55.73 (-140.68 to 29.20), 0.198	<b>2.41 (1.14-5.02), 0.020</b>
Complex, multiple tests	-13.99 (-56.30 to 28.3), 0.516	1.44 (0.98-2.12), 0.062

**Bovet Classification**

None	1.0	1.0
Athletic	<b>-39.10 (-66.55 to -11.65), 0.005</b>	<b>1.51 (1.17-1.94), 0.001</b>
Ball	-30.42 (-69.88 to 9.02), 0.13	<b>2.16 (1.51-3.09), &lt;0.001</b>
Combat	-55.38 (-140.34 to 29.57), 0.20	<b>2.41 (1.14-5.07), 0.020</b>
Naturalize	-34.46 (-91.87 to 22.95), 0.239	<b>2.25 (1.35-3.74), 0.002</b>

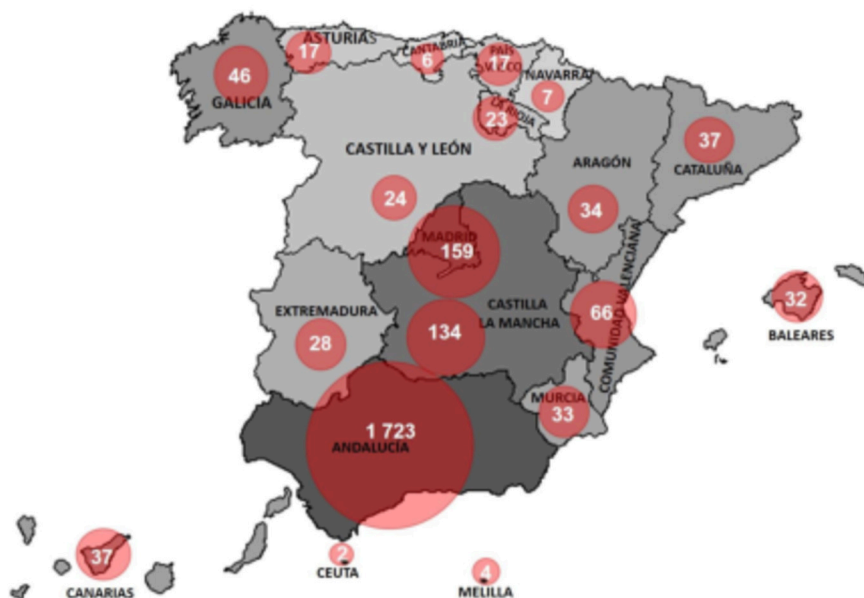
PA (physical activity) hours data shown represent  $\beta$  coefficient (95%CI) and P Value. RR (Relative risk), model adjusted by age. The words in bold show the significant data ( $p < 0,05$ ).

**TITLES OF FIGURES**

**Figure 1.** Distribution of the Spanish sample studied according to the community of origin.

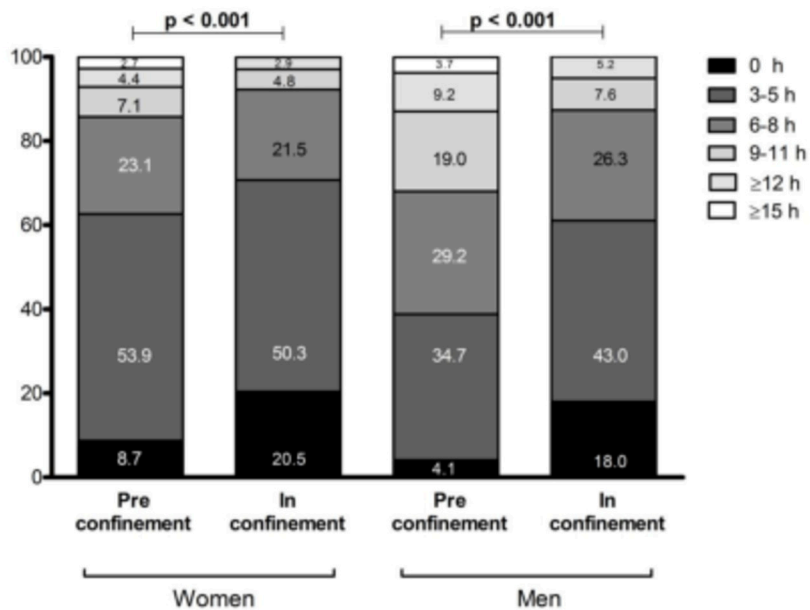
The study was carried out through non-probability sampling.

**Figure 2.** Physical activity levels pre and in confinement in women and men. The ordinate axis represents the percentage of activity that has been carried out. Sex significance values were shown with  $p < 0,001$ .



**Figure 1.** Distribution of the Spanish sample studied according to the community of origin.

The study was carried out through non-probability sampling.



**Figure 2.** Physical activity levels pre and in confinement in women and men. The ordinate axis represents the percentage of activity that has been carried out. Sex significance values were shown with  $p < 0,001$ .

## Supplementary Digital Material

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