

Changes in the amount and intensity of physical activity pre and post covid-19 confinement Cambios en la cantidad e intensidad de la actividad física antes y después del confinamiento debido al covid-19

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Abstract: *Background:* Physical inactivity has increased with the confinement decreed by some countries due to the COVID-19 pandemic, but changes in the lifestyle of the population after confinement are unknown. *Purpose:* The aim of this study is to evaluate how the lifestyle and physical activity (PA) habits of the population have changed during the pandemic after confinement and to identify the groups that may have undergone the greatest changes. *Methods:* The pre-confinement sample were 4160, and post-confinement sample were 2553 healthy adults (age 18-65 years) residing in Spain answered the international PA questionnaire short (IPAQ-S), the first one between 23 March and 1 April and the second one in June of 2020. Data analysis was carried out taking into consideration meeting general PA recommendations post-confinement, age and gender. *Results:* Regarding the difference in the levels of PA of the studied population, a reduction of 4.56% was observed in vigorous physical activity (VPA), an increase of 22.15% in moderate PA (MPA) and a walking time increasing of 17.06%. In workers and students there was a significant reduction in VPA and an increase in MPA, and only the group of non-workers increased their sitting time. Significant reductions in VPA were observed in the age groups around 18-34 years, with an increase in MPA both in these groups and in 35-44 years. In the oldest (≥ 55 - < 65) no significant variations were observed. The percent of people fulfilling the 75 min/week of VPA recommendation decreased by 5.4% while the percent of people who reached 150 min/week of MPA barely changed (2.7%). *Conclusion:* Healthy adults, especially young people, have reduced the amount of self-reported daily VPA and increased the amount of daily MPA and walking during the COVID-19 pandemic in Spain.

Key Words: COVID-19, Confinement, Physical activity, sedentary behaviour

Resumen: *Antecedentes:* La inactividad física ha aumentado con el confinamiento decretado por algunos países debido a la pandemia de COVID-19, pero se desconocen los cambios en el estilo de vida de la población tras el confinamiento. *Propósito:* El objetivo de este estudio es evaluar cómo ha cambiado el estilo de vida y los hábitos de actividad física (AF) de la población durante la pandemia después del confinamiento e identificar los grupos que pueden haber sufrido mayores cambios. *Métodos:* La muestra pre-confinamiento fueron 4160, y la muestra post-confinamiento fueron 2553 adultos sanos (edad 18-65 años) residentes en España que respondieron al cuestionario internacional de AF corto (IPAQ-S), el primero entre el 23 de marzo y el 1 de abril y el segundo en junio de 2020. El análisis de los datos se llevó a cabo teniendo en cuenta el cumplimiento de las recomendaciones generales de AF post-confinamiento, la edad y el género. *Resultados:* En cuanto a la diferencia en los niveles de AF de la población estudiada, se observó una reducción del 4,56% en la actividad física vigorosa (AFV), un aumento del 22,15% en la AF moderada (AFM) y un incremento del tiempo de marcha del 17,06%. En los trabajadores y en los estudiantes se produjo una reducción significativa de la AFV y un aumento de la AFM, y sólo el grupo de los no trabajadores aumentó su tiempo sentado. Se observaron reducciones significativas de la AFV en los grupos de edad en torno a los 18-34 años, con un aumento de la AFM tanto en estos grupos como en los de 35-44 años. En los mayores (≥ 55 - < 65) no se observaron variaciones significativas. El porcentaje de personas que cumplen la recomendación de 75 min/semana de AFV disminuyó un 5,4% mientras que el porcentaje de personas que alcanzaron 150 min/semana de AFM apenas varió (2,7%). *Conclusión:* Los adultos sanos, especialmente los jóvenes, han reducido la cantidad de AFV diaria auto declarada y han aumentado la cantidad de AFM diaria y los paseos durante la pandemia de COVID-19 en España.

Palabras clave: COVID-19, Confinamiento, Actividad física, comportamiento sedentario

Introduction

Physical activity (PA) is defined as any bodily movement produced by skeletal muscles that requires energy expenditure World health organization (WHO). Scientific evidence shows that the benefits associated with regular PA are related to both physical and psychological aspects;

These benefits are manifested in a decrease in the risk of suffering an increasing variety of chronic diseases, such as diabetes mellitus (Constantini, N., Harman-Boehm, I., & Dubnov 2005), colon and breast cancers (Papadimitriou, N., Dimou, N. & Tsilidis 2020), obesity (Fisher, G., Hunter, G. R., & Allison 2013), high blood pressure (Falkner B 2020), osteoporosis (McMillan, L. B., Zengin, A., Ebeling, P. R., & Scott 2017), anxiety (Kim, S. Y., Jeon, S. W., Lee, M. Y., Shin, D. W., Lim, W. J., Shin,

Y. C., & Oh 2020), depression (Mendoza-Vasconez, A. S., Marquez, B., Linke, S., Arredondo, E. M., & Marcus 2019) and stress (Bischoff L.L., Otto A.K. 2019), among others (Warburton, D. E., Nicol, C. W., & Bredin 2006).

In contrast, physical inactivity (PI, explained as lack of PA) has been identified as the fourth leading risk factor for global mortality, 6% of deaths globally (WHO). According to Fiona (Guthold R., Stevens G.A. 2018), in 2006, Global age-standardised prevalence of insufficient PA was 27.5%. For Hallal (Hallal P.C., Andersen L.B. & Bull F.C. 2012), the 31.1% of adults worldwide are physically inactive, with proportions ranging from 17.0% in southeast Asia to about 43% in the Americas and the eastern Mediterranean. PI rises with age, is higher in women than in men, and is more common in high-income countries. In 2012, in Spain, 33.6% of the adult population (18-69 years) was inactive or did not reach the minimum levels PA according to the WHO. According to Eurobarometer 2014, the 49% of the population did not engage in any kind of PA, and the 36% of the Spanish people spend most of the day sitting down (National Health Surveys in Spain 1993-2011/2012 and European Health Survey in Spain 2014), a data that has been increasing in recent years. The age group in which most people spend most of their day without moving is the 15-24 age group, with 56.1% and twice as many other age groups. The sedentary time (ST) is strongly associated with a high risk of mortality from cardiovascular disease, type 2 diabetes and metabolic syndrome, a risk that is independent of the moderate or vigorous PA (MPA or VPA) that people report (De Rezende, L. F., Rodrigues Lopes, M., Rey-López, J. P., Matsudo, V. K., & Luiz 2014).

This PI has increased due to the confinement and social distancing measures adopted by different countries against COVID-19 (Castañeda-Babarro, A., Arbillaga-Etxarri, A., Gutiérrez-Santamaría, B., & Coca 2020). A proper diet, healthy lifestyle habits or an active lifestyle have shown to be beneficial in improving the clinical conditions that are most frequently associated with severe COVID-19 (Dwyer, M. J., Pasini, M., De Dominicis, S., & Righi 2020). Furthermore, considering that PA contributes to the reduction of overall cardiovascular risks (Hegde, S. M., & Solomon 2015) and that it also has positive effects on metabolic syndrome and insulin sensitivity (Ahmed H.M., Blaha M.J., Nasir K. & Rivera J.J 2012), it can be assumed that active compared to sedentary people should have better control of high-risk comorbidities that increase susceptibility to severe COVID-19, as it has been observed that diabetes, hypertension and cardiovascular disease were the most frequent comorbidities among patients with COVID-19 requiring hospitalisation (Chen, N., Zhou, M. & Dong, X. 2020).

All this seemed important enough to at least question whether this new pandemic (COVID-19) is not going to aggravate an existing pandemic (Hall, G., Laddu, D. R., Phillips, S. A., Lavie, C. J., & Arena 2021) such as obesity. In this sense, we believe it is important to know how COVID-19 has affected the amount of PA and habits, in terms of physical health, of different groups in the population. Being aware of the extent to which this situation has affected the different strata of the population can help to identify the most affected population groups, and above all to better adjust strategies or programmes for the promotion of PA in those groups.

For more information on the definition of intensity, physical activity and physical exercise see the article published by WHO (Bull et al. 2020).

The aim of this study is to evaluate how the lifestyle and PA habits of the population have changed during the pandemic after confinement and to identify the groups that may have undergone the greatest changes.

Material and methods

Participants

Spanish healthy adults (age ≥ 18) were asked to participate in this cross-sectional study about variations in PA due to COVID-19. All the subjects were informed about the objective of the study and their free participation in it, being able to leave it whenever they wanted. Deusto University Human Ethics Advisory Group approved the ethics committee. Informed consent was obtained from participants. The characteristics of the participants included are shown in Table 1.

Data collection

Between 23rd March and 1st April was collected the pre data and between 3rd to 30th June of 2020, sociodemographic data (age, height, weight, sex, whether working and/or studying) and self-reported PA data were collected by questionnaires (Figure 1). The IPAQ-Short validated in Spanish (Wolin et al. 2008) was the questionnaire used to ask about three specific types of activity undertaken during the previous 7 days in the four domains (leisure time, work, household activities and transport), and items were structured to provide separate scores for walking, MPA and VPA. The IPAQ-S also contained a question to identify the time spent on sedentary activity.

Physical Activity and Sports Sciences Department, University of Deusto and a national sports store (ForumSport S.A) sent the questionnaire to their customers by e-mail and social media obtaining the data from a database previously used for the study (Castañeda-Babarro et al. 2020).

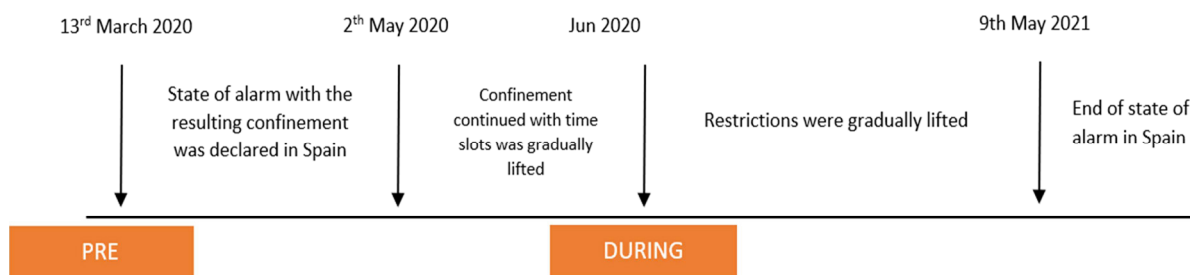


Figure 1. Evolution of phases during the COVID-19 pandemic and restrictions

Procedure

Regarding the pre-confinement sample, a total of 4160 healthy subjects answered the questionnaire. A total of 360 were excluded due to exclusion criteria. This pre-confinement sample is specified in a previous study (Castañeda-Babarro, A., Arbillaga-Etxarri, A., Gutiérrez-Santamaría, B., & Coca 2020).

2553 healthy subjects responded to the questionnaire, although 177 were not included by exclusion criteria (residents out of Spain (n = 2), age <18 (n = 6) and extreme scores in VPA, MPA and walking activities (e»4 hours per day, 7 days a week) due to the impossibility of carrying out so much physical activity and taking the interpretation of the questionnaire as an error. The number of excluded participants was as follows, n = 9 were excluded because the sum of total active time was > 6 h per day (sum of VPA, MPA, walking). Other subjects were excluded because they exercised > 240 minutes per session in VPA, > 240 in MPA and > 28 h (4 h per day, 7 days of the week) walking n = 38, n = 14 and n = 82, respectively. Wrong reported questionnaire data (n=26). Due to an incorrect understanding of the questionnaire, there were subjects who reported sitting times that did not correspond to reality. The questionnaire asks all the daily intensities in minutes per day and the time sitting in hours a day, for which there were subjects who answered it, even though it was specified at the time of the questionnaire, in minutes instead of hours a day. These were excluded.

Despite comparing data reported by different populations, these populations are very similar in terms of: age, height, weight, BMI and gender (Table 1, Table 2).

Table 1. Demographic characteristics of 2391 healthy subjects during Covid.

	n=3800	n=2391	
	Before confinement	After confinement	P value
Age (year)	42.7±10.4	44.4±10	<0.001
Height (cm)	171±8	170±8.7	0.002
Weight (Kg)	71±12	70±13.2	0.058
BMI (kg/m ²)	24.2±3.2	24.1±3.4	0.001
Male / Female	2054(54)/1746(46)	1252 (52.2) / 1139 (47.5)	

Data are presented as mean±SD, n (%)

Table 2.

Number of subjects from the two samples in each age group.

Subgroup categories (years)	Pre Covid (n=3800)	During Covid (n=2391)
18-24 years	264 (6.9%)	81 (3.4%)
25-34 years	670 (17.6%)	277 (11.6%)
35-44 years	1361 (35.8%)	832 (34.8%)
45-54 years	1158 (30.5%)	868 (36.3%)
55-65 years	347 (9.1%)	282 (11.8%)

Statistical Analyses

U of Mann-Whitney or Wilcoxon rank sum test was used to compare the differences in primary outcomes pre and post confinement. A subgroup analysis was performed on different age groups (18–24, 25–34, 35–44, 45–54, 55–64), gender (m, f), working status (students, active workers, people that study and work, those that reported they did nothing), and self-reported PA, categorized into VPA groups (0–75, 75–150, 150–225, more than 225 min/week) and MPA groups (0–150, 150–300, 300–450, >450 min/week). The PA subgroup categories are based on World Health Organization (WHO) recommendations (WHO, 2010). We divided the data into different groups following in accordance with WHO recommendations for MPA (150 min per week) and VPA (75 min per week) intensity. Within each of the two categories we divided the data into 4 groups as follows: (1) under the amount recommended (less than 150 min of MPA or less than 75 min of VPA), (2) following recommendations (150 to 300 min of MPA or 75 to 150 min of VPA), (3) twice the amount recommended and (4) three times the amount recommended. This categorization was made to extrapolate the results to the amount of self-reported PA fulfilled by participants in the study, with α level set at 0.05. Statistical analysis was performed using the SPSS Data Analysis Version 23 (SPSS, Inc., Chicago, IL, USA).

Results

Table 1 shows the demographic characteristics of 2391 participants who were mostly male, (52,2%) and age 44.4±10 years (mean±SD).

Regarding the difference in the levels of PA of the studied population, a reduction of 4.56% was observed in VPA. On the other hand, in terms of MPA, an increase of 22.15% was observed and also, walking time increasing by 17.06%. About the sitting time, no significant differences were observed (Table 3).

Regarding sex, in women, there are increases in VPA and MPA of 32.57% and 54.89% respectively. Observing the PA of men, reductions are observed in VPA (26.56%) but not in MPA, in turn seeing differences of 44.53% in walking time.

Observing the occupation groups pre-covid, significant reductions in VPA are observed in groups of workers and students and increases in the same groups in terms of MPA. On the other hand, workers and neet increase walking time and only the nothing group increase the sitting time.

Regarding the age groups, significant reductions are observed in the 18 - >24 and >25 - >34 age groups in terms of VPA, with an increase in MPA and walking time. Significant increases in MPA are observed in the age group >35 - >44. In the pre group and in the group >45 - >54, walking time is significantly increased. In the group >55 - <65, no significant variations were observed.

Both the number of subjects performing 75 minutes or less of VPA per week and those performing between 150 and 225 minutes increased by 5.4% and 2.7% respectively. The other groups decreased by about 4% (Table 4). In addition, the number of subjects with the least amount of MPA (between 0 and 300 minutes per week) decreased by 9 and 1% in each of the groups and subjects with more

Table 4.

Subgroup analysis in different ranges of PA levels before and during COVID-19.

Subgroup categories (volume; min/week)	Pre Covid (n=3800)	During Covid (n=2391)
Vigorous activity		
0 - ≤75	962 (25.3%)	735 (30.7%)
>75 - ≤150	711 (18.7%)	333 (13.9%)
>150 - ≤225	550 (14.5%)	411 (17.2%)
>225	1577 (41.5%)	912 (38.1%)
Moderate activity		
0 - ≤150	2453 (64.6%)	1330 (55.6%)
>150 - ≤300	837 (22%)	503 (21%)
>300 - ≤450	274 (7.2%)	301 (12.6%)
>450	236 (6%)	257 (10.7%)

Data are presented as n (%). PA: Physical activity.

than 300 minutes per week increased by 4.7% and 5.4% in each of the group.

Discussion

The main objective of this study is to find out how the PA habits of the population have changed with this new pandemic after confinement, and to identify the groups that may have undergone the greatest changes. Significant increases in walking and MPA time, as well as a decrease in VPA time in the total population, have been recorded. On the other hand, both within and between the different age groups in the study, significant changes have been recorded, especially in vigorous and MPA time.

For the general population, the amount of time spent walking and MPA were significantly increased ($p = <0.0001$), which may be due to the improvement in the weather between the first (March) and second

Table 3. Self-reported PA data before and during Covid in all the population and different subgroups.

SUBGROUP ANALYSIS	PRE COVID				DURING COVID								
	(n=pre/post)	Vigorous activity mean±SD	Moderate activity mean±SD	Walking time mean±SD	Sitting time mean±SD	Vigorous activity mean±SD	Moderate activity mean±SD	Walking time mean±SD	Sitting time mean±SD	Vigorous pre-post	Moderate pre-post	Walking pre-post	Sitting pre-post
Total (n=3800/2391)	219±196	149±174	282±253	(n=3687) 6.1±3.6	209±208	182±215	340±260	(n=2328) 6.1±3.6	<0.0001*	<0.001*	<0.001*	0.699	
Women (n=1746/1139)	175±176	133±160	302±260	(n=1694) 6.3±3.9	232±217	206±234	292±220	(n=1106) 6.2±3.3	<0.001*	<0.001*	0.202	0.969	
Men (n=2054/1252)	256±204	163±185	265±247	(n=1993) 6.1±3.1	188±198	161±194	383±285	(n=1222) 5.9±3.1	<0.001*	0.189	<0.001*	0.606	
Teleworkers (n=0/452)	-	-	-	-	187±188	135±190	229±270	(n=442) 6.3±3.2	-	-	-	-	
In-person workers (n=2956/1342)	212.1±189.9	143±169.17	269.3±246.2	(n=2865) 6.2±3.5	208±201	188±213	363±189	(n=1302) 6.1±3.2	<0.001*	<0.001*	<0.001*	0.187	
Students (n=267/180)	295.5±221.0	171.1±191.8	298.8±246.1	(n=262) 6.4±2.4	207±200	201±191	313±199	(n=180) 5.5±2.9	0.001*	0.018*	0.299	0.369	
Study-Work (n=374/187)	223.6±196.8	157.4±177.1	301.3±249.5	(n=361) 6.3±4.1	213±193	173±211	299±250	(n=181) 6.1±2.9	0.133	0.937	0.539	0.754	
Neet (n=203/230)	213.9±228.4	198±208.8	403.3±326.3	(n=199) 4.4±2.4	257±285	234±272	472±477	(n=223) 5.6±3.2	0.350	0.967	0.024*	<0.001*	
Age categories													
18 - ≤24 (n=264/81)	300±206.6	180±197.3	321±281.8	(n=258) 6.6±4.2	210±212	176±191	302±219	(n=77) 6.1±3.1	<0.001*	0.722	0.643	0.336	
≥25 - ≤34 (n=670/277)	244±197.9	139±150.3	280±244.2	(n=655) 6.4±3.1	225±222	206±228	343±272	(n=272) 6.1±3.4	0.021*	0.001*	<0.001*	0.120	
≥35 - ≤44 (n=1361/833)	209±189.9	141±176.6	253±235.8	(n=1323) 6.1±3.1	213±213	175±202	345±266	(n=804) 6.1±3.1	0.272	0.003*	<0.001*	0.553	
≥45 - ≤54 (n=1158/868)	202±184.4	150±172.7	285±256.1	(n=1113) 6.1±3.1	200±200	176±219	330±248	(n=851) 6.1±3.5	0.120	0.242	<0.001*	0.691	
≥55 - <65 (n=347/283)	199±126	169±191.7	354±284.1	(n=338) 5.7±3.3	210±195	190±220	364±283	(n=278) 5.8±3.2	0.117	0.514	0.597	0.558	
PA categories for moderate activities													
0 - ≤150 (n=2453/1398)	187±176.6	49±50.5	254±239.6	(n=2448) 6.1±3.1	170±180	47±52	305±253	(n=1364) 6.2±3.2	<0.001*	0.002*	<0.001*	0.151	
>150 - ≤300 (n=838/521)	234±178.8	225±45.2	309±252.3	(n=837) 6.1±3.1	208±188	229±45	351±259	(n=503) 5.8±3.1	<0.001*	0.087	<0.001*	0.039*	
>300 - ≤450 (n=274/241)	299±220	386±39	340±272.8	(n=274) 6.3±3.0	302±224	386±38	401±242	(n=236) 5.9±3.1	0.683	0.878	<0.001*	0.142	
>450 (n=236/231)	409±267.1	643±146.2	407±308	(n=235) 5.9±3.2	348±289	684±211	458±279	(n=225) 5.9±3.0	0.008*	0.181	0.011*	0.965	
PA categories for vigorous activities													
0 - ≤75 (n=962/741)	16±23.7	101±138.1	291±269.1	(n=961) 6.1±3.1	14±24	131±195	356±269	(n=720) 6.2±3.2	<0.001*	0.931	<0.001*	0.719	
>75 - ≤150 (n=711/392)	115±21.6	119±120.9	248±219.5	(n=710) 6.1±3.1	117±22	160±172	308±243	(n=379) 6.1±3.2	0.407	0.001*	<0.001*	0.938	
>150 - ≤225 (n=550/346)	188±16.4	136±146	256±226.2	(n=550) 5.8±3.2	189±18	161±188	315±242	(n=338) 6.2±3.2	0.415	0.276	<0.001*	0.087	
>225 (n=1577/912)	400±170.7	196±208	299±264.1	(n=1573) 6.1±3.1	415±189	241±242	350±266	(n=891) 5.9±3.1	0.185	<0.001*	<0.001*	0.054	

PA: Physical activity; *Significative values <0.05.

(June) assessment time (Salmon J., Owen N., Crawford D., & Bauman A. 2003), or to the psychological consequences, which the subjects may suffer, derived from the confinement to which the population was subjected. After being deprived of their freedom, when it is regained, we try to make «more use» of it. As far as the amount of VPA is concerned, there is a decrease ($p = <0.0001$) in the amount, probably due to the increase in walking time and MPA, or due to the control of access to sports centres, which are limited, restricted or even closed, and encourage the practice of sport.

As far as gender differences are concerned, men have experienced a decrease in VPA time and an increase in walking time ($p = <0.0001$), probably due to the reduction of daily free time available for training, as vigorous training time is also decreased in workers and students ($p = <0.0001$) and ($p = 0.01$). Similarly to workers ($p = <0.0001$) and neet subjects ($r = 0.28$), walking time may have increased for the simple reason of a return to routine and a more active life. In the case of women, the time spent in VPA and MPA increased ($p = <0.0001$). Interestingly, they are the only group analysed (age groups included) that have increased the amount of VPA, which may be due to a need generated due to confinement, and a decrease in this type of activity during confinement, more than in the men's group (Castañeda-Babarro, A., Arbillaga-Etxarri, A., Gutiérrez-Santamaría, B., & Coca 2020). Finally, an increase in MPA has been recorded in workers ($p = <0.0001$) and students ($p = 0.01$), which may be due to the simple fact of returning to the daily routine by making small modifications in their behaviour, since the questionnaire used defines MPA as those that produce a MPA increase in breathing, heart rate and sweating for at least 10 continuous minutes (Craig C.L., Marshall A.L. & Sjöström M. 2003).

Depending on the age group analysed, it can be seen how, while in the younger age groups the amount of VPA has decreased in the 18-24 and 25-34 age groups ($p = <0.0001 / p = 0.02$), the amount of MPA and walking has increased from 25 to 44 years ($p = 0.001 / p = 0.003$) and walking even up to 65 years ($p = 0.00$), although not significantly in the last age group (55-65 years). This decrease in the time of VPA on the part of the youngest may be due to the return to classes by the students, which coincided with the exam period since the measurement was carried out in June, and to the restrictions still existing at that time with regard to sports centres and sports practice (Decree, Spanish Royal. n.d., 2020).

Regarding meeting PA recommendations, 30.7% of the sample analysed did not perform 75 minutes of intense PA per week and 55.6% performed 150 minutes

or less of MPA per week, which, considering the WHO recommendations, means that these subjects do not perform a sufficient amount of weekly activity (WHO, 2010). Considering these data and compared to pre-covid data, 27.5% of the population was inactive in 2016 (Worldwide trends in insufficient PA from 2001 to 2016: a pooled analysis of 358 population-based surveys with 1-9 million participants (WHO, 2010), it could be supposed a clear trend of increasing PI of the population during the pandemic, with the health problems that this may entail, even related to the COVID-19 virus (Dwyer, M. J., Pasini, M., De Dominicis, S., & Righi 2020).

This research has some limitations. The first, and probably the most important, is not being able to collect the questionnaire responses from the same pre-COVID sample, being two different samples from the same population. However, this can be compensated by the large sample sizes of 3800 and 2391 subjects pre- and post COVID and by the fact that these populations are very similar in terms of: age, height, weight, BMI and gender. On the other hand, the questionnaire used is the short version of the IPAQ, which makes it easier for subjects not to drop out of the questionnaire due to its excessive length. In order to obtain as many participants as possible, sharing the questionnaire was sent to customers involved in sports and in addition to being shared on social networks. Therefore, a sampling selection bias may have occurred in the population analysed due to their natural active habits. Finally, the way in which the data were collected in this study can be in itself considered a limitation, since participants reported data in a subjective way when answering self-rated questionnaires.

Conclusion

In conclusion, healthy adults have reduced the amount of self-reported daily VPA and increased the amount of daily MPA and walking during the COVID-19 pandemic in Spain. The most important differences were found in the employed population and in young people. Therefore, and taking into account that these groups are the present and the future of the economy, strategies should be implemented to increase the amount of PA and decrease sedentary behaviours.

In this study an attempt has been made to find how the PA habits of the population have changed with this new pandemic after confinement. These results should make the authorities aware of the influence of political and sanitary decisions on the lifestyles and subsequent health of the affected population. In addition, those findings can help to design and target interventions

aimed at increasing PA and reducing unhealthy levels of sedentary lifestyles associated with pandemic mitigation efforts.

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Author contributions

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Conflicts of interest

The authors declare no conflict of interest.

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