

How to cite this article:

Ordóñez Guamán, S., Higuera Aguirre, E. & Pozo Prado, M. (2021). Intensidad, frecuencia y duración de la actividad física durante la pandemia en Ecuador. *MLS Sport Research*, 1(2), 73-87. doi: 10.54716/mlssr.v1i2.912

INTENSITY, FREQUENCY AND DURATION OF PHYSICAL ACTIVITY DURING THE PANDEMIC IN ECUADOR

Sandra Ordóñez Guamán

Pontificia Universidad Católica del Ecuador (Ecuador)

verysand@hotmail.com · <https://orcid.org/0000-0002-7961-3154>

Edison Higuera Aguirre

Pontificia Universidad Católica del Ecuador (Ecuador)

ehiguera821@puce.edu.ec · <https://orcid.org/0000-0002-5543-1524>

Mónica Pozo Prado

Universidad Católica de Cuenca (Ecuador)

monicpozop@gmail.com · <https://orcid.org/0000-0003-0464-8253>

Abstract. The aim of this research is to define the intensity, frequency, and duration of physical activity that respondents engage in to determine possible effects on overall health in the medium and long term. For this purpose, a quantitative approach research, non-experimental and cross-sectional design is carried out. With a mixed sample (probabilistic and non-probabilistic), composed of n=303 participants, over 18 years old, selected by convenience. The instrument used is the “International Physical Activity Questionnaire” (IPAC), a short version consisting of 7 questions, preceded by 3 questions on the socio-demographic composition of the participants. Among the main results, 74.9 per cent of the respondents were teachers and 16.8 per cent were administrative; 35 per cent had not engaged in intense or moderate physical activity; and 83.9 per cent had sat for 4 to more than 10 hours a day (24.1 per cent between 4 and 6 hours; 22.8 per cent between 7 and 8 hours; 19.5 per cent between 9 and 10 hours; and 17.5 per cent for more than 10 hours). In conclusion, a probable relationship could be established between confinement and decreased physical activity; and between confinement and the number of hours that respondents have been seated. In addition, some medium- and long-term effects on the overall health of the participants (and all those who fit the characteristics of the study) could be assumed from physical inactivity and prolonged sitting time.

Keywords: physical activity, Covid-19, integral health, physical inactivity.

INTENSIDAD, FRECUENCIA Y DURACIÓN DE LA ACTIVIDAD FÍSICA DURANTE LA PANDEMIA EN ECUADOR

Resumen. La presente investigación se propone definir la intensidad, la frecuencia y la duración de la actividad física que practican los encuestados para determinar posibles repercusiones sobre la salud integral, a mediano y largo plazo. Con esta finalidad se realiza una investigación de enfoque cuantitativo y diseño no experimental, transeccional. Con una muestra mixta (probabilística y no probabilística), integrada por n=303 participantes, mayores de 18 años, seleccionada por conveniencia. El instrumento aplicado es el “Cuestionario Internacional de Actividad Física” (International Physical Activity Questionnaire = IPAQ),

versión corta, compuesto por 7 preguntas, precedidas por 3 preguntas sobre la composición sociodemográfica de los participantes. Entre los principales resultados se destaca que el 74,9% de los encuestados son docentes y el 16,8% administrativos; que el 35% no ha practicado actividad física intensa o moderada; y que el 83,9% ha permanecido sentado de 4 a más de 10 horas diarias (24,1%, entre 4 y 6 horas; 22,8%, entre 7 y 8 horas; 19,5%, entre 9 y 10 horas; y 17,5% más de 10 horas). Como conclusión se podría establecer una probable relación entre confinamiento y disminución de la actividad física; y entre confinamiento y el número de horas que han permanecido sentados los encuestados. Además, se podrían presumir algunas repercusiones, a mediano y largo, sobre la salud integral de los participantes (y de todos los que se ajusten a las características del estudio), derivadas de la inactividad física y de la prolongada cantidad de tiempo que permanecen sentados.

Palabras clave: Actividad física, Covid-19, salud integral, inactividad física.

Introduction

The discovery of Sars Cov-2 in December 2019 in Wuhan, China and the declaration of pandemic by the World Health Organization in March 2020 have changed the logic and functioning of the world beyond the dominant globalization (Herrero, 2020) and populist political trends (Tertrais, 2020). Since then, humanity faces an epidemic that, at times, has proved uncontrollable (Sianes & Sanchez, 2021) in a historical period of extremely high scientific and technological development (Alonso, 2019). As is evident, its effects can be seen in the most diverse areas of daily life: health, economic, psychological, social, educational, among others. In the field of public health, the pandemic has highlighted profound inequalities in coverage between rich and poor countries, and although at certain times the pandemic has focused on various regions of the world, a direct relationship between public spending on health and the number of deaths from Covid 19 has been pointed out (Barrera, Estepa, Sarasola & Vallejo, 2020); in addition, a probable reduction in the public health budget in several countries of the world before the pandemic has been denounced (Luján & Minassian, 2020). In the economic field, the consequences of the pandemic are numerous and substantial: loss of millions of jobs, bankruptcy of thousands of companies throughout the world, trade deficit and fiscal deficit in most countries, fall in exports (Mackay, León, & Bedor, 2020); among the main economic activities affected are tourism, trade, and the world's production and supply chains (Clavellina, 2020); in addition, ECLAC/ILO (2020) has projected a recession in the region of -5.3%. In the psychological field, the following effects on the world population have been mentioned: anxiety, insomnia, fear, uncertainty, frustration, excess of information, loneliness, sadness, and depression (Cabrera, 2020; Sandín, Valiente, García & Chorot, 2020). In the social field, the problems and inequality of vulnerable groups: unemployed, migrants, women, the elderly, etc., will become more acute (ECLAC, 2020; Sandín, Valiente, García & Chorot, 2020). (ECLAC, 2020). In the educational field, the pandemic has revealed the existence of a digital and technological gap between countries and families with resources and those without (UNICEF, 2021). In addition, it has highlighted the gaps in methodological, didactic, and technological training of teachers (Acevedo, Argüello, Pineda & Wurcios, 2020; García & Taberna, 2021), and the numerous problems that teachers and students may suffer due to confinement and the need to maintain social distancing. Despite the importance of each of the aforementioned domains, the present research focuses on the relationship between physical activity and covid 19.

The World Health Organization (2020) has emphasized on multiple occasions the importance of physical activity in maintaining people's health. While physical activity contributes to the prevention of some non-communicable diseases (cardiovascular diseases, cancer, and diabetes) and to the improvement of the physical, psychological, and mental well-being of individuals, physical inactivity could cause or aggravate numerous pathological conditions. Physical activity could prevent up to five million deaths per year. Moreover, WHO (2020) notes that 1.4 billion adults, aged 18 to 64 years, have not exceeded the minimum thresholds of physical activity: 150 to 300 minutes of moderate aerobic physical activities per week; or, 75 to 150 minutes of intense aerobic physical activities per week. Finally, WHO (2019) has revealed worrying figures on the insufficient physical activity of adolescents between 11 and 17 years of age, above 70%, and in extreme cases, above 90%. In relation to the aforementioned data, which reflect the global reality prior to the pandemic, it is suspected that those figures could have worsened during the 2020-2021 period. In this regard, there are some studies that point out that health prevention measures, introduced after the pandemic, could have reduced the time devoted to physical activity and exercise, with the consequent physical deconditioning (Mera, Tabares, Montoya, Muñoz & Monsalve, 2020); to the possible psychological and social effects of the lack of physical activity on the population (Camacho, Camacho, Merellano, Trapé & Brazo, 2020; Celis, Salas, Yáñez & Castillo, 2020); the need to implement cardiac rehabilitation programs to counteract the effects of social isolation during the pandemic (Carrillo, 2020); the need to maintain good levels of physical activity to reduce the risks associated with Covid-19 infection (Celis, Salas, Yáñez & Castillo, 2020); to the effects of physical activity for the preservation of mental, neuromuscular, cardiovascular, metabolic, and endocrine health of the population (Baena, Tauler, Aguiló & García, 2021); to the need to consider personal levels of physical activity as a vital sign during medical consultation (Márquez, 2020).

Due to the prolonged period of confinement and the demands of social distancing, it is possible to presume a decrease in physical activity, with a parallel increase in sedentary lifestyle, an increase in the consumption of carbohydrates and alcohol, a decrease in hours of rest, among others, which in the medium term could generate numerous consequences for the integral health of people (Mera, Tabares, Montoya, Muñoz, D. & Monsalve, 2020; Camacho, Camacho, Merellano, Trapé & Brazo, 2020; Celis, Salas, Yáñez & Castillo, 2020 ; Bravo, Kosakowski, Núñez, Sánchez & Ascarruz, 2020; Villaquirán, Ramos, Jácome & Del Mar, 2020; Rico, Vargas, Poblete, Carrillo, Rico, Mena, Chaparro & Reséndiz, 2020; Flores, Coila, Ccopa, Yapuchura, & Pino, 2021). And, although the definition of integral health includes all dimensions of the human being, for the purposes of this research, physical activity has been considered as its foundation. In this regard, it should be emphasized that physical inactivity represents the fourth risk factor for death in the world and that studies link it to certain types of cancer (breast and colon), diabetes, and ischemic heart disease (Márquez, 2020). Finally, Márquez (2020) recalls that 60% of the world's population does not practice the necessary amount of physical activity for health and that the percentage of physical inactivity is increasing in several rich countries and in some regions of the world, such as Latin America and the Caribbean.

Some studies related to the research variables are mentioned below. Pérez, Gianzo, Hervás, Ruiz, Casis, Aranceta, & the Collaborative Group of the Spanish Society of Community Nutrition (2020), in the article "Changes in dietary habits during the period of confinement for the COVID-19 pandemic in Spain," set out to analyze changes in dietary habits and other lifestyles during the period of confinement in a population group

in Spain. This is a cross-sectional, observational study conducted on a sample of 1036 people over 18 years of age recruited during weeks 6-8 of the Spanish confinement (April 21 - May 8, 2020). The results highlight that the most frequent changes refer to increased consumption of fruit (27%), eggs (25.4%), legumes (22.5%), vegetables (21%), and fish (20%); and reduced consumption of processed meats (35.5%), lamb or rabbit (32%), pizza (32.6%), distilled alcoholic drinks (44.2%), sugary drinks (32.8%), or chocolate (25.8%), with some differences mainly depending on age and the degree of adequacy of the usual diet. Some 14.1%, who usually do not cook, do so during this period. 15% do not do physical exercise, 24.6% spend more than 9 hours a day sitting, and 30.7% of smokers (14.7%) smoke more. Thirty-seven percent reported not sleeping well. Among the conclusions, it is mentioned that the participants in this study report dietary changes during the period of confinement in Spain, with a tendency towards greater consumption of healthy foods, less consumption of foods of less nutritional interest, and an increase in the practice of cooking at home.

Severi & Medina (2020), in the article "Changes in eating habits and physical activity during physical isolation during COVID-19: descriptive study on a sample of workers (Uruguay, April 2020)," aimed to identify changes in behavior regarding eating and physical activity in the health emergency, in a convenience sample of 170 workers, out of a cohort of 2091. A 17-question closed-ended telephone survey was administered on changes in eating and physical activity during confinement of workers and some associated factors. Sociodemographic characteristics were studied, such as sex and age, modality of work, distance, on-call, alternate days of attendance, and family structure of the household with at-risk populations such as children and people over 65 years of age. Weight and height were recorded by self-report, perception of weight variations, modifications in their routines and eating habits. Among the results, one third of the workers (30.6%) perceived weight increase and changed their behavior, almost 47% stated that they ate more frequently. Regarding the type of food, most of them reported an increase in carbohydrate-rich and ultra-processed foods. Of the 170 respondents, only 57 (33.5%) engaged in physical activity during the pandemic, in contrast to the 129 (75.9%) who did so before the pandemic (a reduction of 42.4%). In most of the homes there are children living together, which generates an obesogenic environment that increases the risk of excess weight in the short and medium term. It is concluded that there are unhealthy changes in eating behavior and physical activity that promote the risk of chronic noncommunicable diseases. It is suggested to take measures that complement those that seek to contain the transmission of the coronavirus in the community.

Sudria, Andreatta, & Defagó (2020), in the article "The effects of the coronavirus quarantine (Covid-19) on food habits in Argentina," attempt to analyze food consumption during the quarantine period in Argentina. To this end, they have developed an observational, exploratory, and cross-sectional study. Two survey questionnaires were designed to be completed in online format, one for the meat consuming population (PC) and the other for the vegetarian population (PV). Multiple-choice questions were included on sociodemographic characteristics, self-reported weight and height, history of chronic diseases, habitual food intake, and their perception of modification during the period of social isolation. Twelve days after the quarantine was decreed, a first cut in the data collection was made to perform a descriptive analysis. The non-probabilistic sample consisted of 2518 people who answered the form (2201 PC and 317 PV). A change in dietary habits was observed during the confinement period in both groups, mainly characterized by a decrease in the consumption of foods with immunomodulatory potential such as fruits and vegetables and an increase in the intake of discouraged foods

such as baked goods, sweets, sugary, and alcoholic beverages. On the other hand, 79% PC and 80% PV indicate that the pandemic has affected their lifestyle, especially in food consumption and physical activity. Among the conclusions, the impact on lifestyle and specifically on food since unhealthy diets could increase susceptibility to COVID-19 and affect recovery stands out.

Ríos & Walteros (2020), in their master's thesis "Intention towards physical activity in the adult population: before and after 4 months of social confinement due to the COVID-19 pandemic," wish to determine the intention towards physical activity in the adult population before and after 4 months of social confinement. A cross-sectional study was carried out in a sample composed of 812 people over 18 years of age from the departments of Atlántico, Bolívar, Cesar, Magdalena of Colombia. The interviews were conducted by telephone using a survey based on the Prochaska-Diclemente Transtheoretical model that measures the stages of change towards physical activity. The survey contains questions on the sociodemographic characteristics of the subjects such as: age range of the respondent, sex, educational level, socioeconomic stratum, type of health insurance, and area of work. The statistical package used for the statistical analysis was SPSS software version 24.0. To determine the intention towards physical activity before and during the 4 months of mandatory confinement, the chi-squared test was performed. The results show that 50.5% of the participants were male. In the Preparation stage, the study subjects showed a great difference since the percentage doubled after quarantine from 11.6% to 24.1%, followed by the number of people in the action and maintenance stages, which showed a reduction in the practice of physical activity after 4 months of the pandemic from 11% to 9.1% and from 24% to 16.5% successively. With respect to the intention to perform physical activity according to the role played in the household, men (62.5%) have a greater intention to perform physical activity after 4 months of the pandemic in the Action and Maintenance stage compared to women (46.4%). The following conclusions stand out: Precontemplation to perform physical activity had a slight change after quarantine, as it increased slightly. Next, the Preparers, i.e., people with the intention to start physical activity in the next few days doubled in percentage, this compared to those who had the same intention before starting the quarantine. On the other hand, the number of people who performed regular physical activity presented a reduction of up to one third in those who practiced physical activity before the quarantine with those who practiced it afterwards. In the same way, according to the role played in the household varies, a reduction is clearly observed in women with plans to practice physical activity before quarantine with those with the same intention after quarantine; while, on the contrary, men showed a greater tendency to practice regular physical activity after the quarantine period.

Cabrera (2020), in the review article "Physical activity and psychological effects of confinement by Covid-19," seeks to make a reflective analysis on the psychological effects caused by quarantine in humans and how routines are sought to reduce these effects, through the practice of physical activity at home. Bibliographic research focused on the subject of psychological effects and their mitigation through exercise and physical activity was carried out. In parallel, such research focused on the training plans disseminated by the media, digital platforms, and the internet. The data collected from the internet were the subject of reflection and discussion, and searches were conducted in Pubmed, Web of Science databases, among others. Among the psychological effects, the following stand out: anxiety, fear, uncertainty about the future, fears of infection, frustration, boredom, loneliness, feeling of receiving inadequate supplies, inadequate information, financial losses, and stigma. In children, regression to previous stages,

aggressiveness, and rebelliousness may be observed; in addition, they will show behavioral and emotional regulation problems. Some researchers have suggested long-lasting effects, even up to three years after quarantine from the virus (SARS). Some research suggests that longer quarantine durations are specifically associated with poorer mental health, post-traumatic stress symptoms, avoidance behaviors, and anger. Brooks et al. (2020) conclude that the psychological effect of quarantine is broad, substantial, and long-lasting, yet it is advisable as a means of containment. Psychologists advise the practice of daily routines to avoid the psychological toll caused by social isolation. Among the conclusions, it is noted that there are not many studies to evaluate the psychological sequelae of COVID-19 quarantine; however, some investigations present maintenance physical activity and recreational activities as an excellent tool to combat the psychological effects of confinement.

The present research aims to define the intensity, frequency, and duration of the physical activity practiced by the respondents in order to determine possible repercussions on integral health in the medium and long term. Above all, it seems relevant to highlight the amount of time the interviewees spent sitting on a daily basis, in contrast to the physical activity performed. To this end, the International Physical Activity Questionnaire has been selected to determine possible impacts on integral health in the medium and long term. This provides a valuable input for further research to consider the differences between physical activity before and during the pandemic, and to determine possible consequences on the various areas of people's overall health (physical, emotional, and social). Its relevance lies not only in the evident topicality of the subject, aggravated by the characteristics of the pandemic but above all in the discussion of a problem that is currently little addressed - due to the urgency of scientists and pharmaceutical companies, focused on the creation of vaccines and the inoculation of the world population - and whose effects will become evident in the medium and long term.

Method

Design

To address the study problem, the quantitative approach is used, with a non-experimental, transect design (Hernández, Fernández, & Baptista, 2014).

Participants

For the present study, a mixed sample (probabilistic and non-probabilistic) of (n=303) participants, over 18 years of age, selected by convenience, was used. Among the first group are teachers and administrative staff of a prestigious institution of higher education, who were invited to participate in the survey through the institutional web page; while the second group is composed of various professionals who teach and participate in various master's degree programs, contacted by the research team by e-mail. Although the participating subjects did not sign an informed consent form, they all agreed to participate voluntarily in the research.

Instrument

For the development of the research, the "International *Physical Activity Questionnaire*" (IPAQ) was used, which has been catalogued as a suitable instrument to survey the physical activity of a given group (Mantilla & Gómez, 2007). The short version of the IPAQ (Carrera, 2017) consists of seven questions that allow assessing the intensity,

frequency, and duration of physical activity, with a reliability of 0.65% (Mantilla & Gómez, 2007). In relation to intensity, a distinction is made between mild, moderate, and intense; while in the field of frequency, the number of days per week is established; finally, duration, it is set in the amount of time of physical activity performed each day. The seventh question of the questionnaire asks about the number of hours that the respondents remained seated during a day. The questionnaire is preceded by three questions that make it possible to establish some sociodemographic characteristics of the population, such as sex, age, and profession or occupation of the respondents.

For the application of the instrument, a Google forms form was used, the link to which was provided through the aforementioned means. The form was available from May 13 to July 24, 2021.

Data analysis

The general principles of descriptive statistics were used for data analysis. With the information obtained through the Google forms program, we proceeded to the construction of four tables that summarize numerically the main variables addressed in the study: sociodemographic characteristics of the participants, time spent in physical activity by levels (intense, moderate, and walk), levels of physical activity (intense moderate, and walk), and time spent sitting during a day. And on that basis, some significant figures have been highlighted and will be discussed in the following section.

Results

The results of the application of the International Physical Activity Questionnaire, summarized in tables, are presented below.

Table 1
Sociodemographic characteristics of the participants

Sex	No.	%	Age Ranges	No.	%	Profession or occupation	No.	%
Man	112	37%	18-25 years	9	3%	Teacher	227	74,9%
Woman	191	63%	26-30 years	34	11,2%	Administrative	51	16,8%
			31-35 years	54	17,8%	Student	8	2,6%
			36-40 years	46	15,2%	Others:	17	5,7%
			41-50 years	86	28,4%			
			Over 50 years	74	24,4%			

Table 1 Sociodemographic characteristics of the participants contains information on the sex, age ranges, and profession or occupation of the respondents. It should be noted that 63% of the participants are women and 37% men, 52.8% are over 41 years of age, 74.9% are teachers, and 16.8% are administrators in educational institutions.

Table 2
Time spent on physical activity by level

Intense			Moderate			Walk		
Time	No.	%	Time	No.	%	Time	No.	%
0	106	35%	0	107	35,3%	0	40	13,2%
10-20 min	31	10,2%	10-20 min	48	15,8%	10-20 min	64	21,1%
20-30 min	39	12,9%	20-30 min	42	13,9%	20-30 min	65	21,5%
30-40 min	30	9,9%	30-40 min	33	10,9%	30-40 min	26	8,6%
40-50 min	26	8,6%	40-50 min	19	6,3%	40-50 min	15	5,5%
1 hour	48	15,8%	1 hour	40	13,2%	1 hour	28	9,2%
2 hours	16	5,3%	2 hours	10	3,3%	2 hours	6	2%
3 hours	4	1,3%	3 hours	3	1%	3 hours	2	0,7%
4 hours	3	1%	4 hours	1	0,3%	4 hours	1	0,3%
5 hours	0	0%	5 hours	0	0%	5 hours	0	0%

Table 2 *Time spent on physical activity by level* reflects the time spent on physical activity according to three predefined levels (intense, moderate, and walk). Thirty-five percent of respondents do not engage in intense or moderate physical activity. In addition to these, 23.1% and 29.7% barely practice between 10 and 30 minutes of intense and moderate physical activity, respectively. On the other hand, 13.2% indicate that they do not practice walking, while 42.6% reach a range between 10 and 30 minutes of walking.

Table 3
Physical activity levels: intense, moderate, and walk

Intense			Moderate			Walk		
Days	No.	%	Days	No.	%	Days	No.	%
0	114	37,6%	0	121	39,9%	0	45	14,9%
1	58	19,1%	1	78	25,7%	1	50	16,5%
2	35	11,6%	2	33	10,9%	2	49	16,2%
3	28	9,2%	3	27	8,9%	3	50	16,5%
4	23	7,6%	4	17	5,6%	4	25	8,3%
5	26	8,6%	5	15	5%	5	32	10,6%
6	16	5,3%	6	5	1,7%	6	16	5,3%
7	3	1%	7	7	2,3%	7	36	11,9%

According to Table 3 Levels of physical activity: intense, moderate, and walk, 37.6%, 39.9%, and 14.9% have not engaged in intense or moderate physical activity or walking, respectively, any of the last seven days. Only 19.1% and 25.7% have performed intense or moderate activity, respectively, one of the last seven days; while 16.5% have practiced walking within the same period.

Table 4
Sitting time

Time	No.	%
30 min	10	3,3%
1 hour	6	2%
2 hours	11	3,6%
3 hours	22	7,3%
4-6 hours	73	24,1%
7-8 hours	69	22,8%
9-10 hours	59	19,5%
+ 10 hours	53	17,5%

According to *Table 4 Sitting time*, the majority of participants surveyed have sat more than 4 hours during 1 day: 24%, between 4 and 6 hours; 22.8%, between 7 and 8 hours; 19.5%, between 9 and 10 hours; and 17.5% more than 10 hours.

In summary, it was found that the majority of respondents were women (63%), teachers (74.9%), over 41 years of age (52.8%), that few of them dedicated time to intense physical activity (35%), moderate (35.3%), or walking (13.2%), that they had not engaged in intense physical activity (37.6%), moderate (39.9%), or walking (14.9%) in the last seven days, and that they had not engaged in intense physical activity (37.6%), moderate (39.9%), or walking (14.9%); while the number of hours spent sitting increases exponentially from 4-6 hours (24.1%), 7-8 hours (22.8%), 9-10 hours (19.5%), more than 10 hours (17.5%). From the crossing of these variables, it could be pointed out that most of the respondents do not dedicate time to daily practice of intense, moderate or walking physical activity, while the number of hours spent sitting ranges from 4 to more than 10 hours for 83.9% of the surveyed population.

Discussion and conclusions

Discussion

In a broad sense, physical activity comprises the different activities in which the musculoskeletal system is involved, by means of which energy is consumed by the individual in a different way to that produced at rest (WHO, 2020). Therefore, it can vary in intensity (intense, moderate, light), frequency (daily, several times a week, once a week), and duration (in minutes and hours). Several authors have recognized the importance of physical activity as one of the main mechanisms for maintaining health and preventing numerous diseases: ischemic heart disease, arterial hypertension, cerebrovascular accidents (Varo, Martínez, & Martínez, 2003). In that direction, state programs for the promotion of physical activity should be interpreted as a strategy that favors the health of the population (Vidarte, Vélez, Sandoval & Alfonso, 2011). On the contrary, physical inactivity and sedentary lifestyles have been qualified as a direct cause of a large number of non-communicable diseases and deaths in the world (WHO, 2020) and as a real public health problem (Escalante, 2011). On the other hand, it should be emphasized that integral health should be understood not only as physical, emotional, and social stability but also includes elements of personal and social perception (Hellín, Moreno & Rodríguez, 2004), and that, in some contexts, physical activity has become an integral part of people's quality of life (Vigo, 2018).

Based on the WHO recommendations (2020), which state that adults aged 18 to 64 years should practice between 150 and 300 minutes of moderate aerobic physical activity, or between 75 and 150 minutes of intense aerobic physical activity per week. 58.1% and 65% of the participants in the study fall below the time range of intense and moderate physical activity, respectively. In addition, 85.1% and 91% do not reach the recommended 5 days of intense or moderate activity per week, and 83.9% of the respondents have remained seated for between 4 and more than 10 hours, completing the basic ingredients for the development of non-communicable diseases (cardiovascular, cancer, and diabetes), depression, anxiety, among others.

With the data available at the moment, it is not possible to determine the consequences that could be derived for the overall health of the participants due to the intensity, frequency, and duration of the physical activity performed during the study.

However, should further studies be able to confirm such a trend, several health problems could be presumed in the participants.

Conclusions

In view of the fact that most of the informants are directly related to the educational field (74.9% are teachers and 16.8% are administrative staff of a Higher Education Institution), it is of particular interest to contrast: 1) the number of hours they have been sitting (24.1%, between 4 and 6 hours; 22.8%, between 7 and 8 hours; 19.5%, between 9 and 10 hours; and 17.5% more than 10 hours), probably, dedicated to teaching, school, and/or administrative activities; 2) versus the percentage (37.6% and 39.9%) who have not practiced intense or moderate activity, respectively. With the intention of deepening the partial results obtained, further research should be carried out to determine the possible repercussions, in the medium and long term, on the integral health of the participants derived from the increasing physical inactivity and the prolonged amount of time spent in a sedentary position. In addition, it seems essential to carry out new studies that address the same problem in the light of a larger and more segmented sample and with an instrument that allows comparison of the physical activity variables and time spent sitting before and during the pandemic.

References

- Acevedo, A., Argüello, A., Pineda, B. & Wurchios, P. (2020). Competencias del docente en educación online en tiempo de COVID-19: Universidades públicas de Honduras. *Revista de Ciencias Sociales (Ve)*, 26(2020). <https://www.redalyc.org/jatsRepo/280/28064146014/28064146014.pdf>
- Alonso, J. (2019). Economía, Ciencia y Humanismo. *RIECS*, 4(1), 68-71. https://ebuah.uah.es/xmlui/bitstream/handle/10017/38009/economia_hierro_RIECS%202019%2C%20v.%204%2C%20n.%201.pdf?sequence=1&isAllowed=y
- Baena, S., Tauler, P., Aguiló, A. & García, O. (2021). Physical activity recommendations during the COVID-19 pandemic: a practical approach for different target groups. *Nutrición Hospitalaria*, 38(1), 194-200. <https://scielo.isciii.es/pdf/nh/v38n1/0212-1611-nh-38-1-194.pdf>
- Barrera, E., Estepa, F., Sarasola, J. & Vallejo, A. (2020). COVID-19, neoliberalismo y sistemas sanitarios en 30 países de Europa. Repercusiones en el número de fallecidos. *Revista Española de Salud Pública*, 94(2020), 1-15. <https://dialnet.unirioja.es/servlet/articulo?codigo=7721430>
- Bravo, S., Kosakowski, H., Núñez, R., Sánchez, C. & Ascarruz, J. (2020). La actividad física en el contexto de aislamiento social por Covid-19. *Gicos. Revista del Grupo de Investigación en Comunidad y Salud*, 5(e1), 6-22. <https://dialnet.unirioja.es/servlet/articulo?codigo=7400127>
- Cabrera, E. (2020). Actividad física y efectos psicológicos del confinamiento por Covid-19. *International Journal of Developmental and Educational Psychology INFAD Revista de Psicología*, 2(1), 209-220. <https://revista.infad.eu/index.php/IJODAEP/article/view/1828/1612>
- Camacho, A., Camacho, M., Merellano, E., Trapé, Á. & Brazo, J. (2020). Influencia de la actividad física realizada durante el confinamiento en la pandemia del Covid-19 sobre el estado psicológico de adultos: un protocolo de estudio. *Rev. Esp. Salud Pública*, 94(2020), 1-9.

- https://www.mscbs.gob.es/en/biblioPublic/publicaciones/recursos_propios/resp/revista_cdrom/VOL94/PROTOCOLOS/RS94C_202006063.pdf
- Carrera, Y. (2017). Cuestionario Internacional de actividad física (IPAQ). *Revista Enfermería del Trabajo*, 7(11), 49-54. <https://dialnet.unirioja.es/descarga/articulo/5920688.pdf>
- Carrillo, S. (2020). El ejercicio físico, la actividad física. ¿Cómo continuarlo en tiempo de pandemia? *Revista Costarricense de Cardiología*, 22(suplemento 1), 27-29. <https://www.scielo.sa.cr/pdf/rcc/v22s1/1409-4142-rcc-22-s1-27.pdf>
- Celis, C., Salas, C., Yáñez, A. & Castillo, M. (2020). Inactividad física y sedentarismo. La otra cara de los efectos secundarios de la Pandemia de COVID-19. *Revista médica de Chile*, 148(6), 885-886. <https://dx.doi.org/10.4067/S0034-98872020000600885>
- Comisión Económica para América Latina y el Caribe (CEPAL)/Organización Internacional del Trabajo (OIT). (2020). El trabajo en tiempos de pandemia: desafíos frente a la enfermedad por coronavirus (COVID-19). *Coyuntura laboral en América Latina y el Caribe*, No. 22 (LC/TS.2020/46), Santiago, 2020. <https://www.cepal.org/es/publicaciones/45557-coyuntura-laboral-america-latina-caribe-trabajo-tiempos-pandemia-desafios-frente>
- Comisión Económica para América Latina y el Caribe (CEPAL). (2020). *América Latina y el Caribe ante la pandemia del COVID-19. Efectos económicos y sociales*. https://repositorio.cepal.org/bitstream/handle/11362/45337/S2000264_es.pdf?sequence=6&isAllowed=y
- Clavellina, J. (2020). Posibles efectos del Coronavirus en la economía mundial. *Instituto Belisario Domínguez. Senado de la República*, 75(2020), 1-8. <http://bibliodigitalibd.senado.gob.mx/handle/123456789/4805>
- Escalante, Y. (2011). Actividad física, ejercicio físico y condición física en el ámbito de la salud pública. *Revista española de Salud Pública*, 85(4), 325-328. https://scielo.isciii.es/pdf/resp/v85n4/01_editorial.pdf
- Flores, A., Coila, D., Ccopa, S., Yapuchura, C. & Pino, Y. (2021). Actividad física, estrés y su relación con el índice de masa corporal en docentes universitarios en pandemia. *Comuni@cción*, 12(3), 175-185. <https://dx.doi.org/10.33595/2226-1478.12.3.528>
- García, M. & Taberna, J. (2020). The transition from the classroom to non-classroom teaching at the UPC during the COVID-19 pandemic. *IJERI: International Journal of Educational Research and Innovation*, 15(2021), 177-187. <https://doi.org/10.46661/ijeri.5015>
- Hellín, P., Moreno, J. & Rodríguez, P. (2004). Motivos de práctica físico-deportiva en la región de Murcia. *Cuadernos de Psicología del deporte*, 4(1-2), 101-115. <https://revistas.um.es/cpd/article/view/112481/106721>
- Hernández, R. Fernández, C. & Baptista, M. (2014). *Metodología de la investigación* (6ª Ed.). México: McGraw-Hill.
- Herrero, C. (2020). Panorama geopolítico del mundo actual. Estado-Nación, Globalización y Covid-19. *Didácticas específicas*, 23(2020), 136-142. https://revistas.uam.es/didacticasespecificas/issue/download/didacticas2020_23/627#page=136
- Luján, M. & Minassian, M. (2020). Covid-19: Ecos de una pandemia. *Revista Argentina de Microbiología*, 52(3), 167-168. <https://dx.doi.org/10.1016%2Fj.ram.2020.09.003>
- Mackay, R., León, B. & Bedor, D. (2020). El contexto de la economía mundial ante el Covid 19 y sus posibles efectos. *Polo del Conocimiento: Revista científico-*

- profesional, 5(9), 67-83.
<https://dialnet.unirioja.es/servlet/articulo?codigo=7554408>
- Mantilla, S. & Gómez, A. (2007). El Cuestionario Internacional de Actividad Física. Un instrumento adecuado en el seguimiento de la actividad física poblacional. *Revista Iberoamericana de Fisioterapia y Kinesiología*, 10(1), 48-52.
[https://doi.org/10.1016/S1138-6045\(07\)73665-1](https://doi.org/10.1016/S1138-6045(07)73665-1)
- Márquez, J. (2020). Inactividad física, ejercicio y pandemia COVID-19. *VIREF Revista De Educación Física*, 9(2), 43-56.
<https://revistas.udea.edu.co/index.php/viref/article/view/342196>
- Mera, A., Tabares, E., Montoya, S., Muñoz, D. & Monsalve, F. (2020). Recomendaciones prácticas para evitar el descondicionamiento físico durante el confinamiento por pandemia asociada a COVID-19. *Universidad y Salud*, 22(2), 166-177.
<https://doi.org/10.22267/rus.202202.188>
- Organización Mundial de la Salud (OMS). (2019). Un nuevo estudio dirigido por la OMS indica que la mayoría de los adolescentes del mundo no realizan suficiente actividad física, y que eso pone en peligro su salud actual y futura.
<https://www.who.int/es/news/item/22-11-2019-new-who-led-study-says-majority-of-adolescents-worldwide-are-not-sufficiently-physically-active-putting-their-current-and-future-health-at-risk>
- Organización Mundial de la Salud (OMS). (2020). *Actividad física*.
<https://www.who.int/es/news-room/fact-sheets/detail/physical-activity>
- Pérez, R., Gianzo, M., Hervás, G., Ruiz, F., Casis, L., Aranceta, J. & el Grupo Colaborativo de la Sociedad Española de Nutrición Comunitaria (SENC). (2020). Cambios en los hábitos alimentarios durante el periodo de confinamiento por la pandemia COVID-19 en España. *Revista Española de Nutrición Comunitaria*, 26(2), 101-111. <http://dx.doi.org/10.14642/RENC.2020.26.2.5213>
- Ponce, J. (2016). *Educación Superior en Iberoamérica: Informe 2016. Informe Nacional: Ecuador*. <https://cinda.cl/wp-content/uploads/2019/01/educacion-superior-en-iberoamerica-informe-2016-informe-nacional-ecuador.pdf>
- Rico, C., Vargas, G., Poblete, F., Carrillo, J., Rico, J., Mena, B., Chaparro, D. & Reséndiz, J. (2020). Hábitos de actividad física y estado de salud durante la pandemia por Covid-19. *Espacios*, 41(42), 1-10.
<https://www.revistaespacios.com/a20v41n42/a20v41n42p01.pdf>
- Ríos, K. & Walteros, F. (2020). *Intención hacia la actividad física en población adulta: antes y después de 4 meses del confinamiento social por la pandemia COVID-19*. (Tesis de maestría). Universidad Simón Bolívar. Barranquilla.
<https://bonga.unisimon.edu.co/handle/20.500.12442/6902>
- Sandín, B., Valiente, R., García, J. & Chorot, P. (2020). Impacto psicológico de la pandemia de COVID-19: Efectos negativos y positivos en población española asociados al periodo de confinamiento nacional. *Revista de Psicopatología y Psicología Clínica*, 25(1), 1-22. https://www.aepp.net/wp-content/uploads/2020/07/30686_Psicopatologia_Vol_25_N1_WEB_Parte2.pdf
- Severi, C. & Medina, M. (2020). Cambios en los hábitos alimentarios y actividad física durante el aislamiento físico durante el COVID -19: estudio descriptivo sobre una muestra de trabajadores (Uruguay, abril 2020). *Anales De La Facultad De Medicina, Universidad De La República, Uruguay*, 7(1), e2020v7n1a15.
<https://revistas.udelar.edu.uy/OJS/index.php/anfamed/article/view/241>
- Sianes, A. & Sánchez, E. (2021). Documentos publicados por diversas instituciones y organismos nacionales y supranacionales: difundiendo el impacto educativo en

- tiempos de pandemia. *Revista Española de Educación Comparada*, 38(extra 2021), 229-248. <http://revistas.uned.es/index.php/REEC/article/view/30294>
- Sudria, M. Andreatta, M. & Defagó, M. (2020). Los efectos de la cuarentena por coronavirus (Covid-19) en los hábitos alimentarios en Argentina. *Diaeta*, 38(171), 10-19. <https://ri.conicet.gov.ar/handle/11336/114882>
- Tertrais, B. (2020). El orden internacional tras la Covid-19: Estados más replegados y potencias más débiles. *Anuario Internacional CIDOB 2020*. <https://www.raco.cat/index.php/AnuarioCIDOB/article/view/373747>
- UNICEF. (2021). *Preventing a lost decade. Urgent action to reverse the devastating impact of COVID-19 on children and young people*. <https://www.unicef.org/media/112841/file/UNICEF%2075%20report.pdf>
- Varo, J., Martínez, A. & Martínez, M. (2003). Beneficios de la actividad física y riesgos del sedentarismo. *Medicina clínica*, 121(17), 665-672. [https://doi.org/10.1016/S0025-7753\(03\)74054-8](https://doi.org/10.1016/S0025-7753(03)74054-8)
- Vidarte J., Vélez C., Sandoval C. & Alfonso M. (2011). Actividad física: Estrategia de promoción de la salud. *Hacia la Promoción de la Salud*, 16(1), 202-218. <https://revistasojs.ucaldas.edu.co/index.php/hacialapromociondelasalud/article/view/2006>
- Vigo, J. (2018). *Actividad física y su impacto en las escalas de calidad de vida* [Tesis de grado no publicada]. Universidad de Valladolid. <https://uvadoc.uva.es/handle/10324/32709>
- Villaquirán A., Ramos O., Jácome, S. & Meza, M. Actividad física y ejercicio en tiempos de COVID-19. *Rev CES Med.* 2020 (Especial COVID-19), 51-58. <http://dx.doi.org/10.21615/cesmedicina.34.COVID-19.6>

Receipt date: 10/31/2021

Revision date: 11/18/2021

Acceptance date: 11/19/2021