

Physical activity during COVID-19: an exploratory study case of recreational travel in Mexico City

Actividad física durante COVID-19: un caso de estudio exploratorio de los viajes recreativos en la Ciudad de México

Luis David Berrones-Sanz ¹,  <https://orcid.org/0000-0001-9740-8114>

¹ Universidad Autónoma de la Ciudad de México

Correo electrónico de contacto: luis.berrones@uacm.edu.mx

Fecha de envío: 19/03/2023

Fecha de aprobación: 14/04/2023

Abstract

Introduction: A survey on physical activity habits during the period of social distancing due to COVID-19 was applied to eighty-eight people in parks in Mexico City. **Results:** The results show a relationship between exercising during distancing with the Body Mass Index ($p < .001$) and with the sex of the people ($p = .012$). **Conclusions:** Although it was concluded that the increase in activity is temporary and because work at home allows changing travel time for other recreational activities, it is concluded that people with overweight and women perform more physical activity than before the pandemic. **Keywords:** Physical activity; COVID-19; walker behavior; social distancing; recreational travel

Resumen

Introducción: Se aplicó una encuesta sobre hábitos de actividad física durante el periodo de distanciamiento social por COVID-19 a 88 personas en parques de la Ciudad de México. **Resultados:** Los resultados muestran relación entre realizar ejercicio durante el distanciamiento con el índice de Masa Corporal ($p < .001$) y con el sexo de las personas ($p = .012$). **Conclusiones:** Aunque se infiere que el incremento en la actividad es temporal y debido a que el trabajo en casa permite cambiar el tiempo de viaje por otras actividades recreativas, se concluye que las personas con sobrepeso y las mujeres realizan más actividad física que antes de la pandemia.

Palabras clave: actividad física, COVID-19, comportamiento de caminar, distanciamiento social, viaje recreacional.

Introduction.

In December 2019, an outbreak of a new infectious disease, known as COVID-19, caused by the SARS-CoV-2 virus broke out in Wuhan, China, and which, by March 11, was declared by the World Health Organization as an international public health emergency characterized as a pandemic (World Health Organization, 2020). For its part, in Mexico, the first case was acknowledged on February 27 (Miranda & Morales, 2020) and, by March 24th, an agreement was published in which preventive actions of social distancing were established for the

mitigation of COVID-19 which contains measures for the public and private sectors, including the temporary suspension of school activities, work activities, and physical gatherings, such as meetings or mass events (Secretaría de Salud, 2020).

Starting from the social distancing and actions such as work at home or the temporary suspension of some work, educational or recreational activities; In Mexico City, it was possible to reduce mobility in the main modes of transport between 60% and 80% (Secretaría de Movilidad, 2020). In addition, in terms of walks in parks,

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squares and public gardens, the decrease in mobility was more than 50% (Google LLC, 2020).

Nonetheless, the questioning arises of how the mobility of people with work at home behaves, together with the closure of gyms, sports spaces and, in general, social isolation, and how it affects health/disease conditions. One of the assertions is that, despite the reduction in mobility, there is another group of people who give rise to more trips without destination; that is, people can walk, run, or bike recreationally, to seek recreation, or to exercise. Although COVID-19 has implications for all mobility, and for different modes of transport, this work focuses on the new trips generated by physical activity.

Methodology.

During May 2020, a survey was applied on physical activity habits during the period of social distancing established by COVID-19 in four parks of the Cuauhtémoc mayor's office in Mexico City. The questionnaire was conducted one day in each location from 7:00 to 13:00, and was applied to people who performed aerobic, flexibility or strength and resistance exercises. All people were considered and there were no reasons for exclusion; however, around forty people refused to participate. Finally, eighty-eight people agreed to answer the questionnaire.

The questionnaire contained twenty-five items to inquire about the habits and frequency of physical activity before and after confinement due to social distancing; Age, sex, activity, whether they received income, contact details were asked, and the perception of body image was noted to later approximate the Body Mass Index (BMI). For this, the silhouette method of Stunkard was used, which is a technique that uses a series of figures, which are related to BMI and which has proven to be an effective instrument to classify people according to their level of obesity (López *et al.*, 2017).

The frequency of activity they perform before and during social distancing was compared, tests of related samples were performed, correlations between variables were sought, and chi-square independence tests were performed with Yates corrections.

This first questionnaire conforms the first stage of the project entitled "Walkability and health effects during COVID-19". During the exploratory part, questions arose about what the mobility of people is like in the face of the increase in work at home and other activities conducted from home. Thus, this work has the purpose of investigating the changes in recreational mobility, specifically for physical activity during COVID-19.

Results.

Of the total of eighty-eight participants in the survey, 63.6% were women, and on average declared they were 34.9 years old, with limits between 25 and 55 years. About 59% work in an office, 18.2% study, and 94.4% of those who indicated working as their main activity have received an income despite not being working or doing work from home.

Figure 1 shows the days spent in physical activity before and during isolation. Even though 72.7% of the participants indicated performing physical activity on a regular basis in a gym, it can be observed that while they state that before confinement they performed about three days of physical activity, during confinement they spend on average between four and five days, Therefore, it can be stated that during quarantine, participants exercise more ($p < .001$) than before social distancing.

Likewise, 77.5% of overweight people are female, and the direct answer about the extent to which measure more exercise was done during confinement (on a scale of one to ten), overweight people exercise more during the period of social distancing (Figure 2).

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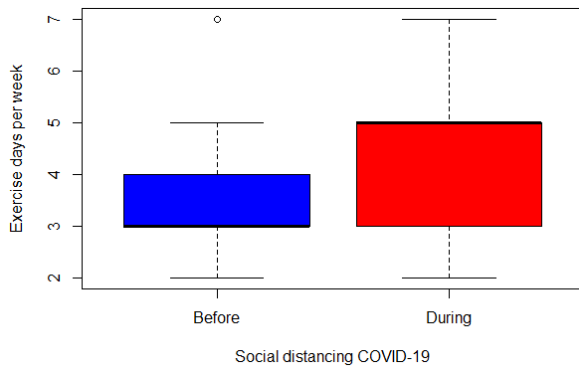


Fig.1 Exercise Frequency before and during social distancing.

Despite the fact that no significant correlation was found between the variables, the independence tests show a relationship between the perception of exercising during the period of social distancing with the BMI obtained using the Stunkard method [$\chi^2(2, N=88) = 14.75, p < .001$] and with the sex of the persons [$\chi^2(7, N=88) = 17.98, p = .012$]. Therefore, it can be affirmed that, in the sample, overweight people perform more physical activity than before the pandemic.

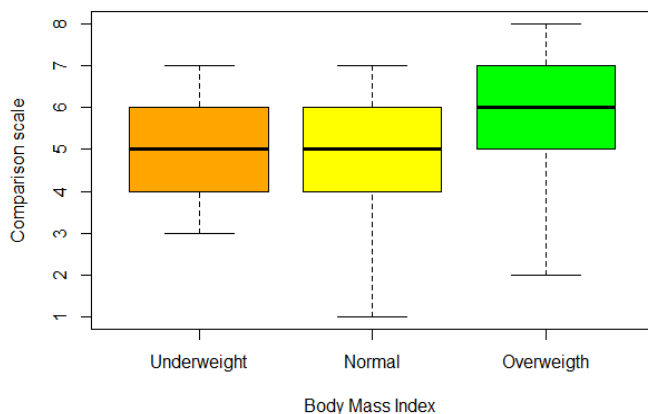


Fig.2 Self-perception of physical activity before and during COVID-19.

Discussion and conclusions.

Given that isolation creates stress, boredom and depression (Brooks *et al.*, 2020) and physical activity outside home, such as walking, can bring benefits for physical and mental health (Morris & Hardman, 1997); it

is not surprising that a group of people increase their level of physical activity during the pandemic.

It is assumed that these trips without a destination are temporary and, that once social distancing ends, it could return to normal. However, it is interesting to inquire about how people take advantage of the time they usually use in commutes, which for the purpose of going to work in Mexico City take an average of 63 minutes (INEGI, 2017).

Thus, even though the results of the study indicate that people with normal weight perform on average the same amount of physical activity as before social isolation, 72.7% indicated that they exercise in a gym. This should be investigated, most of the people who usually perform physical activity outdoors respect the confinement, while the people of the gyms created new recreational trips in public spaces.

For overweight people, whose physical activity is greater during the pandemic, it can be assumed that the activity was temporary and, therefore, working at home allows that time destined to commuting to be allocated to other recreational activities, and that it can have positive effects on their health.

In this way, questions arise about how to ensure that people continue to carry out physical activity after the pandemic, what are the sociodemographic characteristics of people who walk in Mexico, how can it be encouraged so that more people walk as a daily mode of transport, and which was the prevalence of contagion during physical activity.

Since there is little evidence of the potential for contagion when exercising in times of COVID-19 (Kalazich *et al.*, 2020) in addition to extending the study to other parts of the city, people who provided contact information will be followed up.

In any case, it is emphasized the need that policymakers and planners in Mexico City should try to create more

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green spaces, supportive environments for walkability and physical activity, and reduce the commuting of its inhabitants, to increase the level of physical activity and, therefore, contribute to improving their health.

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Declaración de conflicto de intereses

Los autores de este artículo expresan que no tuvieron ningún conflicto de intereses durante la preparación de este documento ni para su publicación.

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