ARTÍCULO ORIGINAL

Gac Méd Caracas 2020;128(Supl 2):S149-S155
DOI: 10.47307/GMC.2020.128.s2.3

Impact of elections on the COVID-19 pandemic

Drs. Victoria Eugenia Castro Trujillo[1], Julio Simón Castro Méndez[2]

SUMMARY

The pandemic has affected thousands of activities around the world. Elections are not exempt from this. Although many of the countries that had electoral events scheduled for 2020 have suspended them, many others have decided to hold them despite the implications it may have for the development of the epidemic in their countries.

Based on the scientific evidence of how these events influenced the development of the COVID-19 in the countries that held elections, we attempted to make a projection based on these experiences to determine how the parliamentary elections scheduled in Venezuela for the first week of December 2020 may affect the behavior of the epidemic in the country.

Key words: *COVID-19, elections, pandemic.*

RESUMEN

La pandemia ha afectado la realización de miles de actividades alrededor del mundo. Las elecciones no escapan de esto. A pesar de que muchos de los países que tenían eventos electorales programados para el 2020 los suspendieron, otros tantos decidieron realizarlos a pesar de las implicaciones que pudiese tener en el desarrollo de la epidemia en sus países. Con base en la evidencia científica de cómo estos eventos influyeron en el desarrollo del COVID-19 en los países que realizaron elecciones, intentamos hacer una proyección basada en estas experiencias para determinar cómo las elecciones parlamentarias programadas en Venezuela para la primera semana de diciembre pueden afectar el comportamiento de la epidemia en nuestro país.

Palabras clave: *COVID-19, elecciones, pandemia.*

DOI: https://doi.org/10.47307/GMC.2020.128.s2.3

ORCID: 0000-0002-4016-3045
[1]Lic. Estudios Internacionales (UCV) – Especialista en Gerencia Pública (UNIMET). Analista de datos Grupo de Investigación de Enfermedades Tropicales e Infecciosas (GIDETI) / Médicos por la Salud. @medicosxlasalud @vickycastroT
ORCID: 0000-0001-9509-2910
[2]Médico Internista Infectólogo UCV. Profesor Instituto Medicina Tropical Universidad Central de Venezuela.
E-mail: juliocastrom@gmail.com

Recibido: 02 dde noviembre de 2020
Aceptado: 18 de noviembre de 2020

INTRODUCTION

The COVID-19 pandemic has caught the world off guard. When the first cases appeared in Wuhan, China in mid-December 2019, not many imagined the magnitude of this strange disease. By the end of October 2020, the world has accumulated more than 45 million cases and almost 1.2 million deaths. Due to its high level of contagion, the disease has advanced at a speed that has been practically impossible for any country to stop.

This disease has shaken even the most robust health systems in the world and has caused all of humanity to generate all kinds of strategies to control outbreaks. Needless to say, none of them have been very effective so far. However, if we must point out some of those that have achieved greater control over the amount or at least the speed of the contagions, we can name the most basic: use of masks or mouthpieces and hand washing, and also confinement.

Although after the first few months of confinement, the entire world realized that even the most stable economies could not be closed for so long, there is clear evidence in the behavior of the disease indicating that restrictions on the mobility of people and the prohibition of crowds have succeeded in significantly reducing the rate of contagion. More importantly, in the sea of uncertainties that still exist in the world after 8 months of the pandemic, one of the few certainties is that massive events or accumulations of people, in whatever context, inevitably have a high and direct impact on the behavior of the epidemic in any country.

One of the most notable examples was seen in the early stages of the pandemic when, following an event at the Church of Jesus in Shincheonji, South Korea, more than 500 people were infected with COVID-19. The same occurred in Spain and Italy, also in the earlier stage of the pandemic when a high number of infections associated with sporting events were recorded.

Election events in any country cannot escape this, as most are events that generate a high mobilization of people in a very short window of time, resulting in an environment too favorable for the spread of a disease like COVID-19. In this sense, of the electoral events that were scheduled for this year worldwide, 24 were held despite the risks of doing so, while 71 countries decided to suspend them.

In this paper, we analyze the electoral impact of the COVID-19 pandemic in Latin America. This is very important given that the following elections will be held in the region in the first half of 2021: Honduras (general and local elections, both in March), Chile (election of representatives to the Constituent Convention and local elections, both in April), Peru (general election in April), Ecuador (general election in April). For this purpose, the case of the parliamentary elections in Venezuela is selected.

Since Venezuela has scheduled elections for the first days of December 2020, we intend to make a balance of how the holding of elections may affect the behavior of the epidemic towards a worsening of it, also taking into account the conditions of the Venezuelan health system, which is a fundamental element for analysis such as this.

To evaluate the effect that elections could have in the context of COVID-19 in Venezuela, we made a comparison between the behaviors of the epidemic in countries that held national elections versus countries that did not hold electoral events. These countries were compared taking into account that they were similar in geographical location and similar socioeconomic conditions.

Methodological aspects

For this analysis, we will call electoral countries those that did hold elections and control countries those that did not hold electoral events in this period.

The socioeconomic parameters taken into account at the time of the comparison were the following: 1) population, 2) average per capita income, 3) geographical location, 4) Per capita PCR performance rate, and 5) continent. These five aspects were used to make the comparisons as fair as possible and to make the transmission dynamics as similar as possible.

To determine the influence of electoral events on transmission dynamics, we compared the population-adjusted growth rate (weekly new cases per million inhabitants) of both electoral and control countries in weeks 0, 4, and 8 following the electoral event.

We also use a calculated growth rate that we call a growth factor in which we compare the growth rates of cases in weeks 4 and 8 versus week 0.

It is important to point out the limitations of the scientific and methodological level that we found to be able to do this study.

First, the definition of "cases" is not homogeneous worldwide. While in some countries, a patient with a positive diagnostic test is considered a "case", in others a patient with a clinical diagnostic picture is considered a "case". There are also cases in countries that have changed their definition of "cases" as the epidemic has evolved.

On the other hand, the capacity of diagnosis through tests is not the same in all countries and this inevitably affects the number of reported

Table 1. Characteristics: electoral countries and control countries

CASES					CONTROL				
Country	Continent	Per capita GDP	Population density	Population	Country	Continent	Per capita GDP	Population density	Population
Afghanistan	Asia	1.803,99	54,42	38.928.341	Iraq	Asia	15.663,99	88,13	40.222.503
					Georgia	Asia	9.745,08	65,03	3.989.175
Bangladesh	Asia	3.523,98	1.265,04	164.689.383	Philippines	Asia	7.599,19	351,87	109.581.085
					Vietnam	Asia	6.171,88	308,13	97.338.583
Burundi	Africa	702,23	423,06	11.890.781	Rwanda	Africa	1.854,21	494,87	12.952.209
					Somalia	Africa	225,00	23,50	15.893.219
Cameroon	Africa	3.364,93	50,89	26.545.864	Ghana	Africa	4.227,63	126,72	31.072.945
					Tunisia	Africa	10.849,30	74,23	11.818.618
Croatia	Europe	22.669,80	73,73	4.105.268	Bulgaria	Europe	18.563,31	65,18	6.948.445
					Slovenia	Europe	31.400,84	102,62	2.078.932
Czech Republic	Europe	32.605,91	137,18	10.708.982	Romania	Europe	23.313,20	85,13	19.237.682
					Sweden	Europe	46.949,28	24,72	10.099.270
Dominican Republic	America	14.600,86	222,87	10.847.904	Panama	America	22.267,04	55,13	4.314.768
					Puerto Rico	America	35.044,67	376,23	2.860.840
France	Europe	38.605,67	122,58	65.273.512	Germany	Europe	45.229,25	237,02	83.783.945
					Italy	Europe	35.220,09	205,86	60.461.828
Guinea	Africa	1.998,93	51,76	13.132.792	Niger	Africa	926,00	16,96	24.206.636
					Rwanda	Africa	1.854,21	494,87	12.952.209
Iran	Asia	19.082,62	49,83	83.992.953	Egypt	Africa	10.550,21	98,00	102.334.403
					Iraq	Asia	15.663,99	88,13	40.222.503
Ireland	Europe	67.335,30	69,87	4.937.796	Finland	Europe	40.585,72	18,14	5.540.718
					Norwega	Europe	64.800,06	14,46	5.421.242
Israel	Asia	33.132,32	402,61	8.655.541	Bulgaria	Europe	18.563,31	65,18	6.948.445
					Greece	Europe	24.574,38	83,48	10.423.056
Macedonia	Europe	13.111,21	82,60	2.063.380	Albania	Europe	11.803,43	104,87	2.877.800
					Bosnia and Herzegovina	Europe	11.713,89	68,50	3.280.815
Mali	Africa	2.014,31	15,20	20.250.834	Niger	Africa	926,00	16,96	24.206.636
					Senegal	Africa	2.470,58	82,33	16.743.930
Poland	Europe	27.216,45	124,03	37.846.605	Sweden	Europe	46.949,28	24,72	10.099.270
					Ukraine	Europe	7.894,39	77,39	43.733.759
Russia	Europe	24.765,95	8,82	145.934.460	Germany	Europe	45.229,25	237,02	83.783.945
					Italy	Europe	35.220,09	205,86	60.461.828
Serbia	Europe	14.048,88	80,29	6.804.596	Bulgaria	Europe	18.563,31	65,18	6.948.445
					Slovenia	Europe	31.400,84	102,62	2.078.932
Singapore	Asia	85.535,38	7.915,73	5.850.343	Cambodia	Asia	3.645,07	90,67	16.718.971
					Malaysia	Asia	26.808,16	96,25	32.365.998
South Korea	Asia	35.938,38	527,97	51.269.183	Japan	Asia	39.002,22	347,78	126.476.458
Surinama	America	13.767,12	3,61	586.634	Curacao	America		362,64	164.100
					Barbados	America	16.978,07	664,46	287.371
Taiwan	Asia	25.000,00	656,00	23.816.775	Cambodia	Asia	3.645,07	90,67	16.718.971
					Vietnam	Asia	6.171,88	308,13	97.338.583
Slovakia	Europe	30.155,15	113,13	5.459.643	Bulgaria	Europe	18.563,31	65,18	6.948.445
					Slovenia	Europe	31.400,84	102,62	2.078.932

Source: Center for Systems Science and Engineering (CSSE) at John Hopkins University, own calculations.

Table 2. Comparison between electoral countries and control countries. Cases variability per million.

	Cases	Control		
Per capita GDP	23.226,00	19.336,00		
Population density	565,00	154,00		
POPULATION (average)	33,00	26,00		
Cases per million habitants. Week 0	112,00	89,00	23	VARIATION OF CASES PER MILLION
Cases per million habitants. Week 4	183,00	120,00	63	
Cases per million habitants. Week 8	149,00	100,00	49	
Growth rate of cases (average)	48,00	17,00	25%	

Sources: Center for Systems Science and Engineering (CSSE) at John Hopkins University, own calculations.

cases. Also, it is extremely complex to evaluate a phenomenon like this because it is what we technically call a time-dependent variable.

It is also important to note that transmissibility is influenced by the different measures that each government may or may not impose on its population: mandatory use of masks, the prohibition of gatherings of people, limitation of internal mobility, the closing of borders, etc. Therefore, for this comparison, it is assumed that in general the measures were adopted more or less simultaneously at the regional level and that therefore; this should not distort the analysis too much.

The information used in this analysis was obtained through data science, epidemiology, and medical statistics obtained from the global data repository of John Hopkins University, which is updated and audited daily. For this analysis, data were taken from January 1 to September 30, 2020.

Implications of an electoral process

In strictly epidemiological terms we have that an electoral process is a phenomenon that involves the interaction of a large number of people, in short windows of time. Not only during Election Day as such but in a series of pre- and post-election activities that also generate mobilization and interaction of people at different levels.

In what would be a "normal" electoral event we could be talking about at least 90 activities ranging from the call and administrative activities to logistical activities, campaign events, Election Day, and audits. All of these take place for approximately four months.

This same dynamic involves different groups including both electoral authorities, political parties, and civil society. It also includes forces of public order or anybody responsible for security operations on Election Day and the safeguarding of election materials.

If we must point out two moments where the danger of contagion is increased due to high exposure of people during an electoral event, we have "D" day or Election Day, but we also have all the acts that comprise the electoral campaign. Regardless of whether it is a one-time event such as a house-to-house or a mass event, this involves direct contact between people which significantly increases the danger of contagion.

In the specific case of Venezuela, we are talking about an electoral registry of around 20 million people and currently, our electoral system does not have figures such as distance or early voting, so we are talking about the mobilization of a very large number of people during a 12-hour day. Taking into account that there are approximately 15 000 electoral centers and 45 000 voting tables, we are talking about an influx of around 70 to 100 people per hour per table in the same space. Also taking into account that most of the electoral centers in Venezuela are schools, therefore, closed spaces that do not favor social distancing.

Additionally, especially on "D" day, it is not only the electorate that is mobilized, but the Army, under the figure of the "Plan República", also moves throughout the national territory together with the personnel of the National Electoral Council, both for the delivery and collection of electoral material as well as for the custody of the centers on election day.

In general, very few events worldwide generate the same mobilization of people at the same time as an electoral event, wherever it may be.

RESULTS

For this comparison, we assume as a base date the day of the election, when in theory there has been no event that has affected the natural course of the epidemic. At this point, which we will call moment zero, electoral countries have an average of 112 cases of COVID-19 per million inhabitants, while control countries have an average of 89 cases per million inhabitants, representing 25 % more cases in electoral countries than in control countries already at moment zero.

Interestingly, the electoral countries enter into this comparison with a higher number of cases than the control countries, a hypothesis that could explain this would be precise all the activities associated with elections that take place in the months leading up to "D" day.

For weeks 4 and 8 after zero, there is a very noticeable trend of increasing cases per million

inhabitants in the electoral countries compared to the control countries. In week 4, the electoral countries reported an average of 183 cases of COVID-19, while the control countries reported 120. This translates into a 163 % increase in cases in the electoral countries relative to the zero moments and a 29 % difference against the control countries, where the growth was 134 %

Figure 1. Comparison between electoral and control countries. Cases per million.
Sources: Center for Systems Science and Engineering (CSSE) at John Hopkins University, own calculations.

during the same period.

By week 8 after the elections, electoral countries had an average of 149 COVID-19 cases per million inhabitants, while control countries had 100, a difference of 14 % of electoral cases over controls.

In the case of Venezuela, to project what it would mean to hold an electoral event in terms of additional cases that we would have, versus not going to an electoral event, we took the data from the projections of the Academy of Physical, Mathematical and Natural Sciences and the projections of the Institute for Health Metrics and Evaluation (1,2), where without the influence of an electoral event, Venezuela would have an estimate of between 10 000 to 11 500 cases per day for the first week of December, 13 400 to 15 410 cases for January, and 13 400 to 15 560 cases for the first week of February.

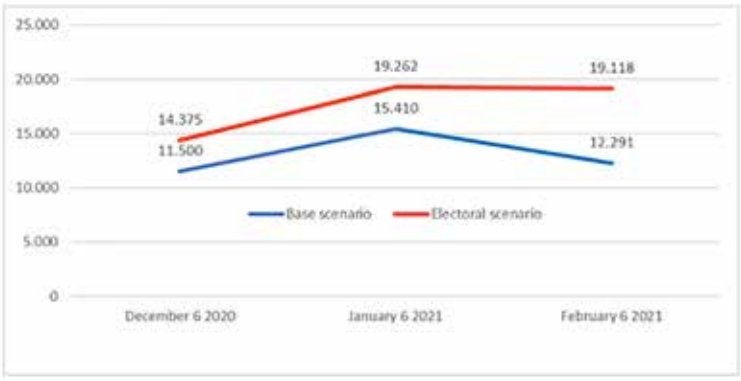

Figure 2. Venezuela: comparison between electoral and non-electoral scenarios.
Sources: Center for Systems Science and Engineering (CSSE) at John Hopkins University, own calculations.

On this basis, and applying the rates of increase of cases in the experiences of the electoral countries versus the control countries, we have that the 29 % excess of cases presented by the electoral countries in week 4 after having held elections, in Venezuela would represent an estimated 12 500 to 14 375 daily cases of COVID-19.

For week 8, given that the evidence shows a 14 % excess of cases in electoral countries, in Venezuela, this would mean 16 750 to 19 262 COVID-19 cases per day for the first week of January 2021 and between 11 055 and 12 712 cases per day for the first week of February 2021.

In broader terms, holding the parliamentary elections in the first week of December would mean an "excess" in the 8 weeks following Election Day of 278 804 COVID-19 cases. If, also the official average fatality rate is maintained (0.8 %), we are talking about around 2 788 additional deaths than would be the case in a non-electoral scenario.

The 2020 municipal elections in Uruguay were held later than Venezuela's estimate described above. We include the figure with the evolution of new cases of COVID-19 in Uruguay as it helps to illustrate the effect of electoral events on the development of the epidemic.

Figure 3. Cases of COVID-19 in Uruguay.
Sources: Center for Systems Science and Engineering (CSSE) at John Hopkins University, own calculations.

By-election day, Uruguay had 37 cases of COVID-19 per million inhabitants. By week 4 following Election Day, Uruguay reported 93 cases per million populations, representing a 248 % increase in cases registered from week zero to week 4.

One of the variables we must take into account in this analysis is that not all countries held elections at the same time as the epidemic. In other words, we have places like Afghanistan or Guinea where the elections were held at the beginning of the epidemic, and others like the Dominican Republic where the electoral event took place in the middle of an exponential phase. We also have the cases of France, the Czech Republic, and Poland, which held their elections when there was apparent control over the disease and a decrease in cases. This last group is without a doubt where we can observe much more the influence of the electoral event on the behavior of the epidemic, since it is where we see that, after having controlled it, elections are held and the infection curves shoot up again.

Another element that is of vital importance when projecting what may happen in Venezuela in the coming months is that the Venezuelan health system lacks the robustness of other countries

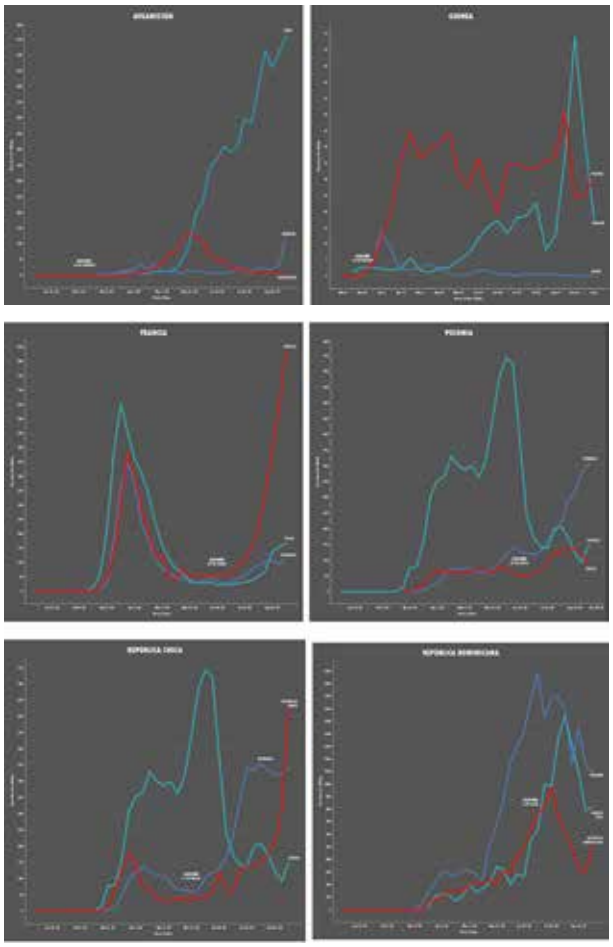

Figure 4. Cases evolution in electoral countries.
Sources: Center for Systems Science and Engineering (CSSE) at John Hopkins University, own calculations.

we are analyzing; therefore, the scenario of an increase of cases in an already collapsed hospital system is not at all encouraging. According to an analysis made by John Hopkins University (3), Venezuela would be 176th out of 195 in the world and last in the American continent in the General Index of Health System Readiness.

On the other hand, the monitoring of the National Survey of Hospitals in its application for COVID-19 has demonstrated the low capacity of specialized attention in intensive care units, as well as the low capacity to carry out CRP and the low provision of personal protection equipment for health equipment. This, although not new or attributable to the pandemic, does directly affect the response capacity of the Venezuelan State through its health system in an emergency like this and highlights the danger of an abrupt increase in cases.

In an environment as complex and full of uncertainties as to the one we are living in, it seems one of the few certainties that an electoral event will undoubtedly affect the development of an epidemic of this nature, always with a tendency towards the worsening of the situation. This, applied to a context like Venezuela's, in a complex humanitarian crisis and a health system incapable of handling "normal" demand, seems to be the perfect recipe for an unmanageable crisis. Unlike many of the previous crises that Venezuela has gone through, in its very complex history of the last 20 years, the COVID-19 epidemic is impossible to solve using repression. The patients and the dead are very difficult to hide and what happens in Venezuela due to the parliamentary elections with the development of the epidemic will be very evident.

Funding: None

Conflicts of interest: None

REFERENCES

1. Academia de Ciencias Físicas, Matemáticas y Naturales. 2do Informe COVID-19 en Venezuela. 09-09-2020. acfiman.org/2do-informe-COVID-19-en-venezuela-09-09-2020/
2. Institute for Health Metrics and evaluation. https://COVID-19.healthdata.org/venezuela-(bolivarian-republic-of)?view=total-deaths&tab=trend
3. 2019 Global Health Index https://www.ghsindex.org/