ARTÍCULO ORIGINAL

Measures for the management of SARS-CoV-2 in Venezuela: An analysis from the data

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SUMMARY

Since March 13, 2020, the COVID-19 virus has been detected in Venezuela. The country had a situation before the pandemic, where the notorious thing was a very important weakness of the health system, a compromised situation of hyperinflation and economic precariousness in the last four years, and a tense political situation. Although the growth of cases in the first wave was not as intense as in other countries in the region (probably related to their economic precariousness), the impact it has had on hospitals and national life has been very important. What is striking about the State's management has been a few policies that are not very transparent, not very cohesive, and very dispersed, which has made it difficult to interpret and analyze the real impact on the epidemic. It is likely that the difficulty in obtaining gasoline and an extremely reduced economy in recent years have been a negative incentive for the transmission of the virus in the population as has been seen in the African continent at this time. Despite this, vulnerability persists, the capacity for improvement and the preparation of hospitals has not been substantially modified yet. It is estimated that the number of cases may increase significantly and that consecutive waves may be repeated and increase the impact that the virus has had in other latitudes.

Key words: *Venezuela, health policy, COVID-19, transmission, determinants.*

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RESUMEN

Desde el 13 de marzo de 2020, el virus COVID-19 ha sido detectado en Venezuela. El país tuvo una situación previa a la pandemia, donde lo notorio fue una debilidad muy importante del sistema de salud, una situación comprometida de hiperinflación y de precariedad económica en los últimos cuatro años, y una tensa situación política. A pesar de que el crecimiento de casos en la primera ola no fue tan intenso como en otros países de la región (probablemente relacionado con su precariedad económica), el impacto que ha tenido en los hospitales y en la vida nacional ha sido muy importante. Lo que llama la atención por parte de la gestión del Estado han sido unas pocas políticas poco transparentes, poco cohesionadas y muy dispersas que han dificultado la interpretación y el análisis del impacto real sobre la epidemia. Es probable que la dificultad para conseguir gasolina y una economía extremadamente reducida en los últimos años, hayan sido un incentivo negativo para la transmisión del virus en la población como se ha visto en el continente africano en este momento. A pesar de ello, la vulnerabilidad persiste, la capacidad de mejora y la preparación de los hospitales no se ha modificado sustancialmente todavía. Se estima que el número de casos puede aumentar significativamente y que las oleadas consecutivas se pueden repetir e incrementar el impacto que el virus ha tenido en otras latitudes.

Palabras clave: *Venezuela, política de salud, COVID-19, transmisión, determinantes.*

INTRODUCTION

Since the last week of December 2019 when the first global alarm of cases was reported in Wuhan province, China, the SARS-CoV-2 epidemic has been spreading for eight months. No country has not recorded cases to date. Despite this, the transmissibility and impact of cases in each country and region are beginning to be different. The virus has behaved homogeneously and has not presented genetic variability that explains the changes or differences we have seen in impact in each of the countries. The explanation of the differential impact must be in other factors that we are still understanding.

In Venezuela, the first case of COVID-19 by PCR test was officially reported on March 10, 2020. The objective of this paper is to outline the profile of the epidemic in Venezuela and correlate it with the control and mitigation policies that have been implemented.

Estimation of impact through the calculation of the number of affected

From March 10 to the date of writing this article, the only definition accepted by the Ministry of Health as a case of coronavirus is the positive result of the polymerase chain reaction (PCR) test (1). This definition, despite being quite strict from the medical point of view, has a deficiency from the epidemiological point of view, since in a large part of the national territory the access to PCR tests is significantly limited. A clinical definition has not yet been accepted: the only indicator of monitoring the epidemic is exclusively the number of daily cases of PCR.

Another important aspect of the definition's limitation is that in much of this time only one institution at the national level has the technical and regulatory capacity to perform PCR testing, the "Instituto Nacional de Higiene" Rafael Rangel (INHRR). Although at the beginning of the epidemic, when there were few cases, access was not a major problem, as the number of cases increased, access to PCR testing has become much more limited, not only because of the number but also because of the transportation of samples, particularly from the interior of the country.

An indicator of the difficulty of access to the test and the weakness in the processing capacity is that once March has passed, the time for reporting the result of the PCR test has remained around 10 to 15 days in any part of the national territory, with a tendency for the results to take longer in more distant areas than in nearby areas.

The limitation of access to PCR tests and the time of the return of the result represent very important limitations both for the clinical activity and for the epidemiological follow-up. Identifying the patients, as well as their contacts after 15 days of knowing the positive result, is practically impossible. Most experts in the world recommend that a result of a rapid molecular test, both for clinical management and epidemiological management, should be available in less than 48 hours, otherwise the urgency of the test is lost.

In September 2020, according to official information, the Venezuelan Institute of Scientific Research (IVIC) and the Research Institute of the State of Lara Dr. Felix Pifano joined the certification of PCR tests. Despite the increase in the number of centers for PCR testing, in practice, there is no improvement in reporting times or in health services' access to test results.

The comparison between the data provided by the spokespersons of the Ministry of Health (MPPS) and those obtained through the hospital follow-up, shows differences in the trends that, although subtle in some cases, imply differential interpretations according to the indicator being analyzed.

In the case of the number of patients diagnosed per day, the PCR graph shows a significant trend of decreasing cases since the second week of September (Figure 1), while the monitoring of hospital ARI cases presents more of stabilization with a trend of variation in the weeks. This difference may be related to the fact that the capacity of performing PCR is compromised during the weeks between September and October. If fewer tests are performed, there are fewer cases. Although hospital monitoring reports a slowdown or change in the pattern of case growth that could be interpreted as a decrease in cases, the orders of magnitude are different. In the case of PCR results, the interpretation is of a control epidemic, while when clinical cases are taken into account it is a stabilization.
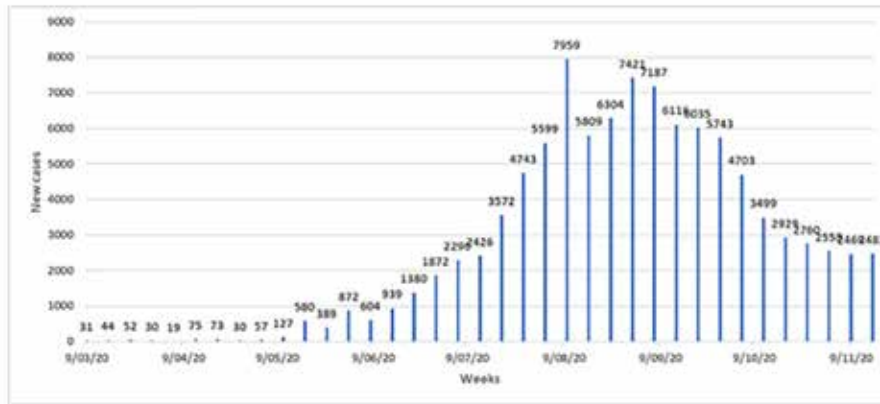
Figure 1. Venezuela: new cases of COVID-19 per epidemiological week between March 9 and November 16, 2020. Source: Ministry of Health (MPPS), Venezuela.
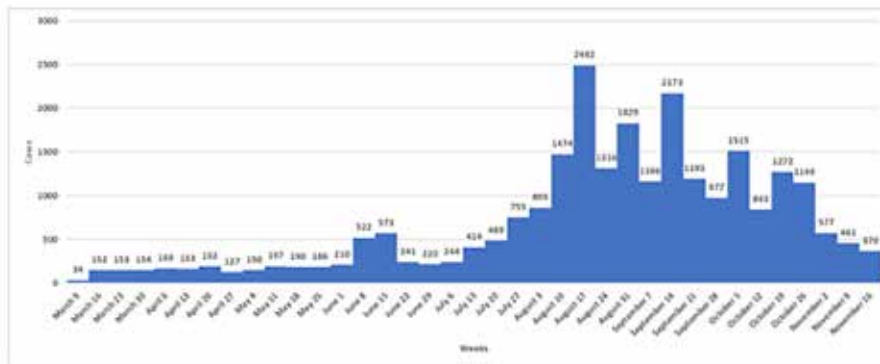

Figure 2. Venezuela: cases of acute respiratory infections (ARI) per epidemiological week between March 9 and November 16, 2020. Source: (2).

Similarly, there is a discrepancy between the number of deaths reported by the Ministry of Health (MPPS) and the number of deaths reported by the hospital monitoring of the COVID-19 National Hospital Survey (2) (Figure 3). This difference can be explained by the definition used by the MPPS to recognize dead people, that is, to register a positive PCR before death. The logistical limitations and access to diagnostic tests have already been explained, so a large number of the deceased have not had a PCR performed and this does not imply that they are not real cases of SARS-CoV-2. In fact, the number of deaths with clinical signs of ARI compatible with COVID-19 disease is three times higher than the cases reported by the MPPS.

The management of information on PCR results implies an excessive centralization and difficult access to health centers to the results. In an effort to decentralize PCR tests, other laboratories in the academic field and private institutions with technical and logistic capacities to perform them were verified. This information was sent by the Pan American Health Organization (PAHO) to the Ministry of Health, but none of these laboratories have been certified so far, which could improve access at the national level.
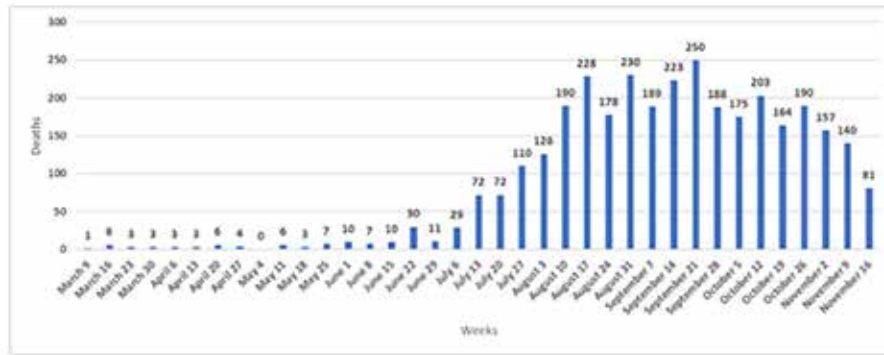
Figure 3. Venezuela: deaths reported from acute respiratory infections (ARI) per epidemiological week between March 9 and November 16, 2020. Source: (2).

This lack of decentralization of PCR testing and practice of excessive control of those results by the central government has not been positive for the management of the epidemic. Similarly, at no time from March 10 to date has the number of PCR tests performed per day been reported. Only a cumulative number of tests has been reported in some news reports without specifying the number of rapid tests compared to the number of PCR results per day. Considering that not only the absolute value of positive PCR test per day but also the percentage of positivity of the test as a function of the total number of tests performed are indicators of the evolution of the epidemic, it is critical that the real operational capacity of PCR tests in our country has not been revealed so far.

Only through indirect information elaborated by the United Nations System regarding PCR tests accumulated in time (3), it has been possible to make extrapolations and comparisons, according to the rate of PCR tests carried out with other countries in the region and the world (Figure 4). According to this, Venezuela has the lowest PCR index per capita in the region, probably the lowest in the world, which puts us in a situation of extreme weakness, not only for the diagnosis of patients but also for maintaining the monitoring, identification, and tracking of cases and contacts in an adequate manner.
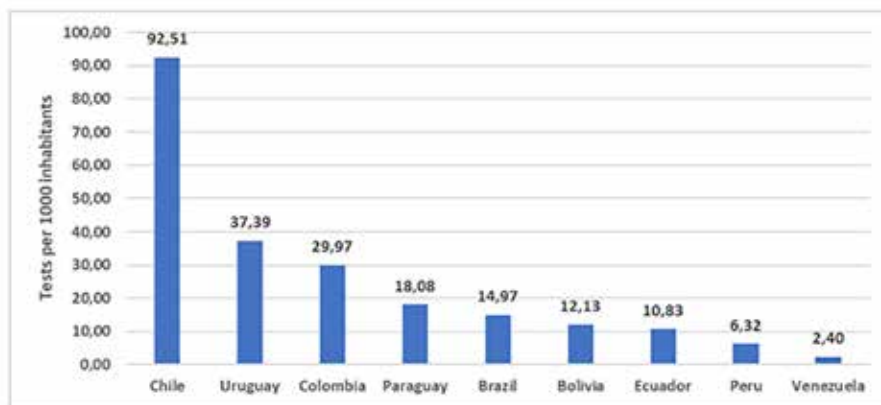

Figure 4. PCR tests for COVID-19 per 1 000 population, 2020, selected countries. Source: (3).

One of the few clear indicators so far of the management of the epidemic is that those countries that have conducted an extensive number of PCR tests to identify cases are those that have controlled the epidemic much better, among which we can cite South Korea, Vietnam, Singapore, New Zealand, and Australia. According to international data reported to the WHO, Venezuela has an index of PCR tests in relation to the countries of the region that is four or five times below international standards. For example, in October in Colombia 50 000 PCR tests/day were performed, while in Venezuela the number ranged from 2 000 to 2 500 PCR tests/day, in the best scenario.

On the other hand, the Venezuelan government has not published the weekly epidemiological bulletin that reports the number of diseases that are mandatory to be reported to the Pan American system for four years now. There is a blockage to high quality systematic epidemiological information, not only with this epidemic but with other previous epidemics. It is also quite clear that the concealment of epidemiological figures (which should be of public information), has been a persistent state policy in recent years in Venezuela.

Although a significant number of countries in the world have joined the open science initiative with access to data for analysis and research, and execution of public policy measures, in Venezuela the only information that is revealed is the number of positive PCR results per day. While in other parts of the region and the world, other indicators are available that are used to measure the epidemic, such as percentage of positive CRP per day, number of intensive care beds available at each moment, percentage of hospital occupation related to cases of coronavirus, geographical origin of cases, forms and sites of infection. All these are very important indicators for the follow-up of the epidemic that unfortunately in Venezuela are not available at the moment. On the other hand, the incorporation of the definition of a clinical case to have a better perspective of the total number of infected cases has been a claim and a request from the academic sectors of the country to the official entities, but so far this has not been included.

Case management and access to the health care system

In the first week of March 2020, with the first cases diagnosed by PCR in Venezuela, the presidential regulation is established for the hospitalization of any type of patient with a positive PCR or rapid test (positive PDR). Although the cases, in numerical terms, were not as high at that time, the worldwide situation of distress due to the epidemic caused a significant number of people to consult health services, both primary and specialized, with potential symptoms associated with COVID-19.

In the weeks following the beginning of the epidemic, a significant number of people and contacts who had some definition as positive cases, either positive contacts or positive rapid tests, were admitted to both the traditional primary care centers and the primary care centers of the "Barrio Adentro" system. It became very clear from the beginning of the epidemic that primary care services did not have the logistical or technical capacity to deal with potential cases of COVID-19. Early deaths occurring in outpatient settings that did not have minimal conditions made this trend notorious.

In addition to patients, primary care workers, especially doctors and nurses from the "Barrio Adentro" system, and law enforcement officials were also among the first affected. This aspect is an important marker of the lack of protection or knowledge of the protection of health care workers who must attend to this type of illness. State agencies reported that these groups of people in the health and security sectors were infected in the performance of their professional duties from very early in the epidemic.

There have also been reports from patients, doctors, and others about the precarious conditions in which they were treated in primary care services due to the lack of personnel and minimal conditions for clinical and laboratory follow-up. Progressively, the form of access to patients with respiratory symptoms was modified towards more specialized hospitals with greater logistic resources to attend this contingency. In fact, these hospitals began to progressively show a higher percentage of occupation by patients with an acute respiratory infection (ARI).

According to the official spokesperson, in the first months, an important number of rapid tests were made according to reports of the public media, approximately 2 to 3 million rapid tests (PDR). These tests, being performed without epidemiological criteria, gave contradictory results that were difficult to interpret. For this reason, they were progressively discontinued. Many of the official reports reported a high percentage of asymptomatic people over the total number of positive cases announced each day, which is an indirect expression of the lack of criteria for the identification of positive patients in epidemiological terms.

During the increase in the number of cases, the Ministry of Health and the central government announced increased resources for the care of asymptomatic contacts and patients through hotel beds. This initiative, in principle of adequate orientation, in practice generated many questions for the implementation, because patients and contacts were transferred in a coercive way and without the express approval. The logistic conditions of isolation and minimum care to avoid transmission was unknown. The information obtained from the people assisted indicated that the minimum conditions to avoid horizontal infections were not guaranteed.

While it is possible that this strategy of mobilizing contacts and positives with rapid tests to the hotels was able to somewhat alleviate the pressure on the sentinel hospitals, as moderate to severe cases increased, the pressure on these hotel hospitalization centers has progressively decreased. Perhaps the greatest difficulty in managing hotel cases was related to improper case classification, that is, in certain areas people who had different types of definitions were confined or isolated, for example, the suspected case with contacts, contacts with asymptomatic patients, symptomatic cases with people who were only asymptomatic contacts, among others.

Another problem was accounting for hotel beds as hospital beds. In many of the official communications made by high-level government spokespersons, hotel beds were counted in the same way as hospital beds, which is technically incorrect.

Access to high complexity hospitals

The Ministry of Health defines "sentinel" hospitals as those that had specific competence in each of the country's states for the care of patients with COVID-19. While this strategy is important for citizens and primary care services to know the referral and care route to high complexity centers, in practice it did not necessarily work that way. On the one hand, the very definition of "sentinel" implies an orientation of epidemiological monitoring and not necessarily of clinical care. Secondly, the selection of the sentinel hospitals does not seem to have been made taking into account the logistic conditions to attend patients with respiratory pathology, nor the estimation of human resources and training required.

Some examples are demonstrative of the lack of coordination or specific definition criteria of the so-called sentinel hospitals in the list of the Caracas Metropolitan Area (4). The Ricardo Baquero González de Coche Hospital was included, although it has been closed for four years. The Hospital Universitario de Caracas, one of the academic hospitals with the longest history of care for patients with severe respiratory diseases and with one of the highest operational capacities, at least architecturally, within the Caracas Metropolitan Area, was not included. The Hospital del Algodonal, oriented to the care of patients with respiratory diseases, was included despite having very basic operational and human resource logistical conditions and extreme deficiencies to care for patients with a high level of complexity.

Adequacy, performance, and capacity of sentinel hospitals

From the first moment, it was clear that the infrastructure conditions, demonstrated by the lack of basic services such as water and electricity, and specific care inputs for the emergency (Figure 5-A) and intensive care area (Figure 5-B), were very critical in the hospitals defined as sentinel.

Figure 5-A. Venezuela: Venezuela: bed occupancy in emergency units for acute respiratory infections (ARI), by epidemiological weeks (average percentage), 2020. Source: (2).

Figure 5-B. Venezuela: bed occupancy in intensive care units for acute respiratory infections, by epidemiological weeks (average percentage), 2020. Source: (2).

This situation is a consequence of the fact that the public health system has an extremely deteriorated infrastructure, especially aggravated in recent years. The fact that 60 % of the country's largest national hospitals do not have running water on a routine basis is a very important indication of this lack of infrastructure (Figure 6-A). This is even more relevant when basic coronavirus transmission control measures include regular handwashing with soap and water (Figures 6-B, 6-C).

As for personal protective equipment to prevent infection by health personnel, the situation was no different (Figures 7-A, 7-B). Very low levels of protection have been reported using as a marker the percentage of hospitals that had mouthpieces in the emergency and intensive care units. This indicator has shown, after eight months, a slight increase due to the help of organizations of the United Nations system, donations from NGOs. There does not seem to be a formal strategy on the part of government agencies for the provision of protective equipment for health personnel.
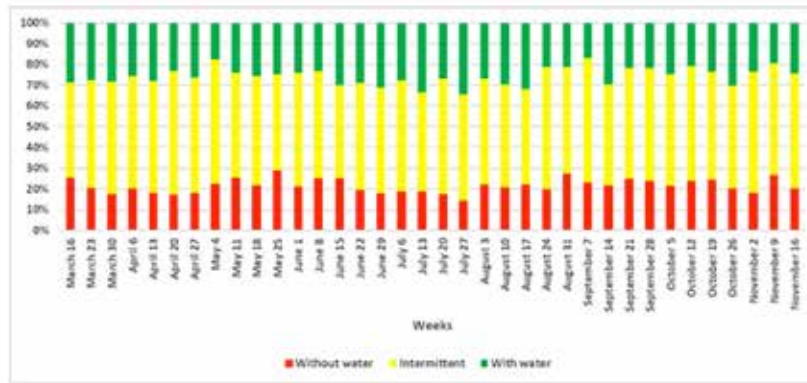
Figure 6-A. Venezuela: water availability in hospital emergency units (in percentage), by epidemiological weeks, 2020. Source: (2).
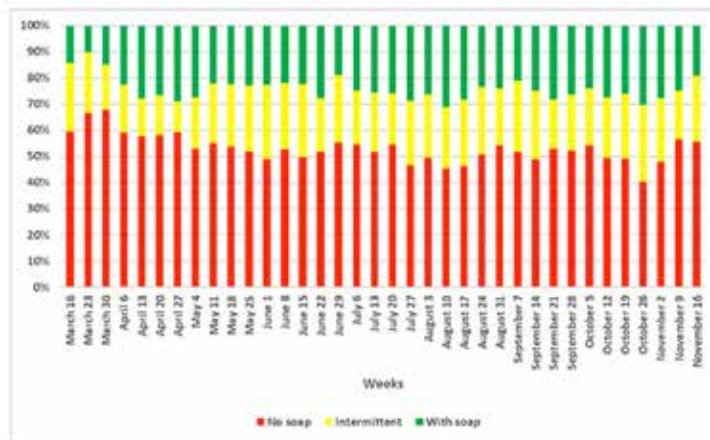

Figure 6-B. Venezuela: availability of soap in hospital emergency units (in percentage), by epidemiological weeks, 2020. Source: (2).
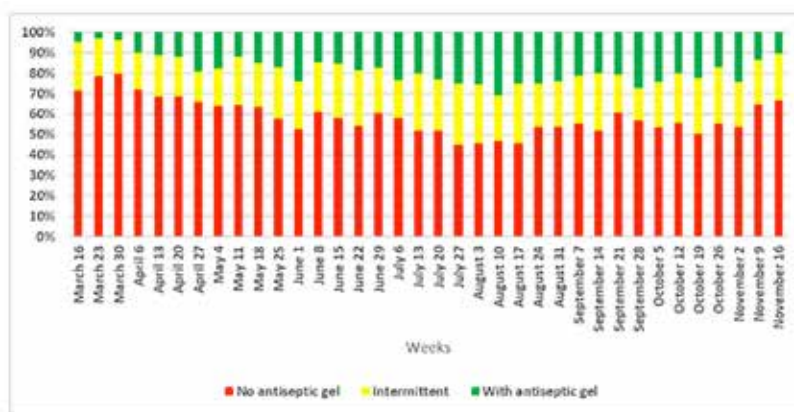

Figure 6-C. Venezuela: availability of antiseptic gel in hospital emergency units (in percentage), by epidemiological weeks, 2020. Source: (2).
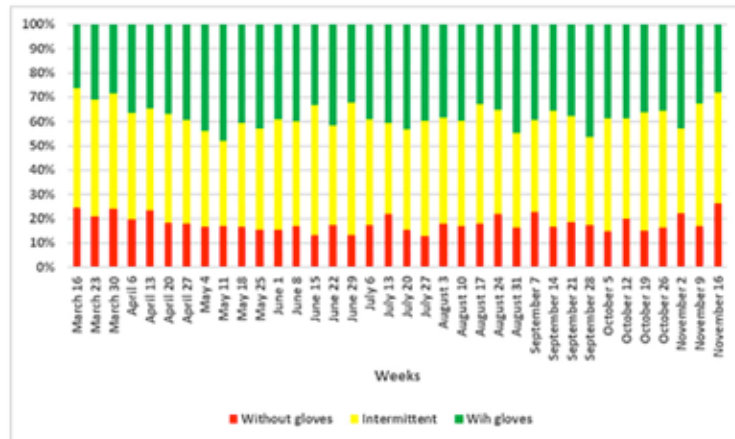
Figure 7-A. Venezuela: availability of gloves in hospital emergency units (in percentage), by epidemiological weeks, 2020. Source: (2).
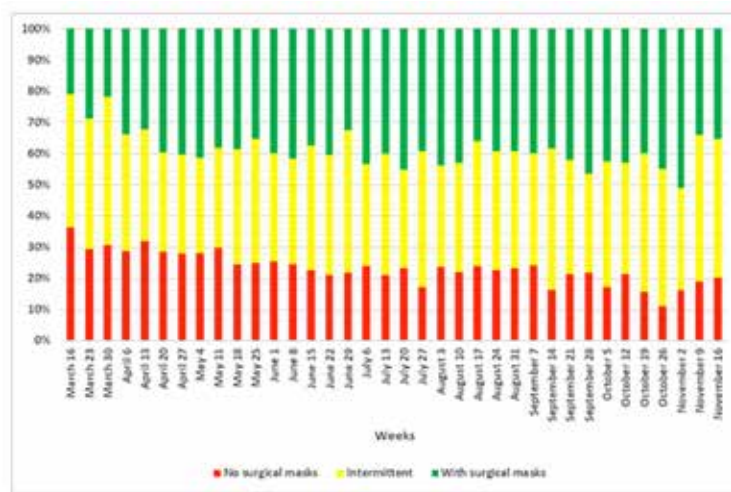

Figure 7-B. Venezuela: availability of surgical masks in hospital emergency units (in percentage), by epidemiological weeks, 2020. Source: (2).

A central aspect in the adaptation of hospitals for the care of patients with COVID-19 involved improving the basic conditions of the emergency units and intensive care units, not only in terms of medical-surgical supplies and materials but also in terms of the actual availability of beds in each of the centers. Our census of the number of beds in intensive care units has remained stable since the beginning of the epidemic until the end of October (2), contrasting with the numbers that have been officially reported, which far exceed the number that we have registered in the 40 most important hospitals in the country. A possible interpretation on this aspect is that the government has counted as intensive care beds units that are not in the national hospitals, and that may be in the "Barrio Adentro" system or eventually in some other care center. Despite this, the total number of beds available in emergency rooms and intensive care units, as well as the number of artificial respirators or ventilators (Figure 8), has remained stable since the beginning of

the epidemic. The monitoring of the National Hospital Survey (2) has reported a progressive increase in the occupation of intensive care units, reaching at its worst 40 % to 50 % at the national level.
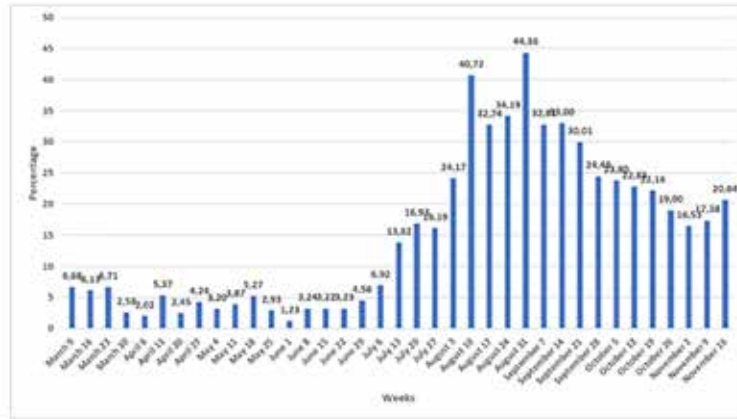

Figure 8. Venezuela: percentage of ventilator occupancy in intensive care units, by epidemiological weeks, 2020. Source: (2).

Emergency rooms showed during the course of the first phase of the epidemic progressive levels of occupation with patients with the definition of an acute respiratory infection that correlated with the number of cases of COVID-19 in the country. During July and August 2020, occupancy levels reached their highest levels yet. This affected the subjective feeling that hospitals in large cities were "collapsed" by the admission of patients with COVID-19.

It is very striking that despite the fact that the occupancy rate, both in intensive care units and in emergencies, never reached values higher than 60 %, it was extremely difficult to obtain beds or ventilators, at least in the highly populated areas such as Maracaibo, Caracas, Valencia, Puerto La Cruz.

The explanation we propose for this aspect is that the real capacity to care for critically ill patients is less than their operational capacity (number of beds), among other things because of the lack of oxygen connections, availability of human resources and supplies. Somehow, the occupation of nearly 50 % of the intensive care units, generates a real operational inability to receive more patients with acute respiratory failure or diagnosis of COVID-19 in hospitals.

Therefore, the real operational capacity for patient care at this level of complexity is less than that reflected in the actual availability of beds throughout the national public health system.

Assessing the performance of hospital units according to morbidity-mortality data has been impossible due to the lack of real epidemiological information in each of these hospitals. For this reason, the unofficial monitoring system that has been used in recent years has reported a rate of deaths associated with acute respiratory infection three times higher than the number of deaths from COVID-19 reported by Ministry of Health sources (MPPS).

At present, we do not have rigorous epidemiological data that would allow us to establish mortality from COVID-19 in intensive care units. The brief information available in some centers reports that practically 100 % of patients with COVID-19 who have received mechanical ventilation in the country's hospitals have died. This information was obtained from some centers such as the Luis Razetti Hospital in Barcelona during June and July. The technical evaluation of the performance of the emergency and intensive care units in the management of COVID-19 cases is still pending due mainly to

the lack of official epidemiological information.

Governmental measures to restrict movement

Since March 16 (4 days after the first case of coronavirus in Venezuela) the national quarantine was approved by the national government. From that moment until June 1, severe restrictions were maintained on circulation, classes were suspended throughout the national territory, commercial activities were reduced to the minimum necessary, and circulation on communication routes was rigorously restricted. This regulation was quite similar to that of other Latin American countries such as Colombia, Argentina, Peru, and Chile. In the case of Venezuela, the strict quarantine was maintained despite the relatively low rate of infection, according to the PCR testing indicator.

As of June 1, a phase of quarantine relaxation began, which has had different definitions over time. The first definition was the establishment of a policy of what was called "14 x 7" in which there were 14 days of restriction of movement and 7 days of partial relaxation. Similarly, sometimes there were criteria for regional flexibility, but without a sufficiently clear communication policy so that the majority of the population could simply understand when they were in each of the country's states or municipalities. In a couple of weeks, it went from "14x7" to "7x7".

We believe that the approval of the quarantine was an early measure which may have had an impact on the slow rate of infection in Venezuela during the first four months of cases (from March to June). It is likely that this measure, also adopted in other countries in the region, was in some way conditioned by the high transmission rates observed in North America and Europe. As time went by, it became increasingly clear in Latin America that maintaining strict quarantine for long periods was not only difficult to comply with, but also threatened basic functions of the state and citizens. That is why the relaxation of quarantine in our country coincided with a very fast curve of new cases which was clearly counter-intuitive. Likewise, it went against the WHO recommendations for the beginning of the flexibilization phase, which required that the epidemic be brought under control.

By October 2020, the "7x7" scheme was maintained, with greater flexibility in the weeks of non-circulation, but there did not seem to be a clear public policy, with transparent indicators for the population and for government bodies, that would make it possible to identify which type of work or activities were a higher priority than others and therefore susceptible to flexibilization. One of the main criticisms made of the policy of restricting movement is that there does not seem to be a clear objective indicator of the number of people who circulate daily, or a plan organized by sector and by risk activities that would allow for better control over the measures and their impact on the cases. We have reviewed Big Data published on the web in which the impact of traffic restriction can be measured comparatively among several countries in the region (Figure 9). According to this analysis, it has been persistent that Venezuela, even despite the restrictions, is one of the countries in which circulation was proportionally less affected when compared to nearby countries such as Colombia and Ecuador.

In the data of the "Google Community Mobility Report" it is clearly evident that the variability between the periods of flexibility and non-flexibilization does not exceed 10 %. This low variability is also noticeable from the data of the social monitoring system according to self-reporting of quarantine compliance (Figures 10,11).

In Venezuela, there have been factors external to the epidemic that has been able to influence transmission, and therefore the number of cases. One of them is the shortage of fuel (gasoline). According to the monitoring of public services, it is observed that the rate of growth of cases according to the data of the MPPS reached its peak at the time that the restriction of gasoline begins (Figures 12, 13). According to the monitoring report for July 15 - August 15 it is reported that 85 % of the citizens did not have access to gasoline throughout the country. In the following weeks, a change in the pattern of cases per week was observed with stabilization and subsequent decrease. It should be remembered that there were also difficulties in processing PCR tests, but equally the hospital monitoring reported a change in the pattern after the peak of the gasoline shortage in August 2020.
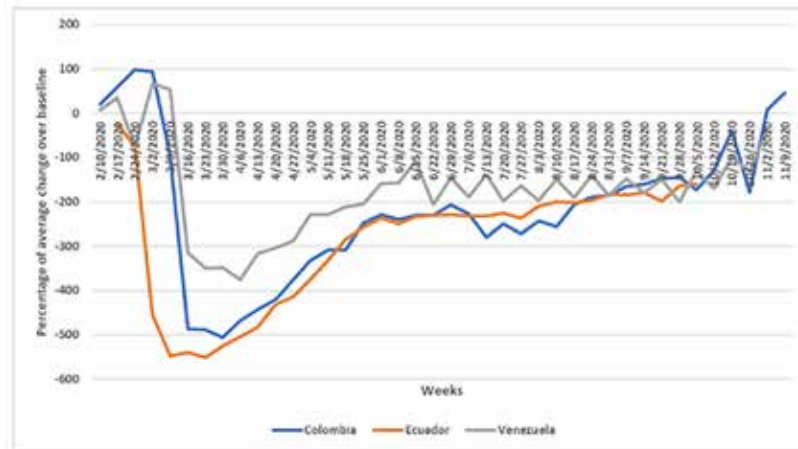
Figure 9. Changes in mobility to workplaces (as percentage of weekly average), selected Latin American countries, February-November 2020. Source: Google Community Mobility Report (https://www.google.com/covid19/mobility/)
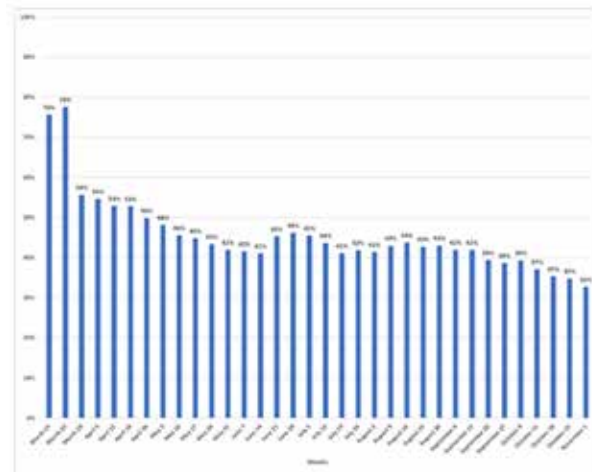

Figure 10. Venezuela: quarantine compliance (weekly percentage), March-November, 2020. Source: (5).
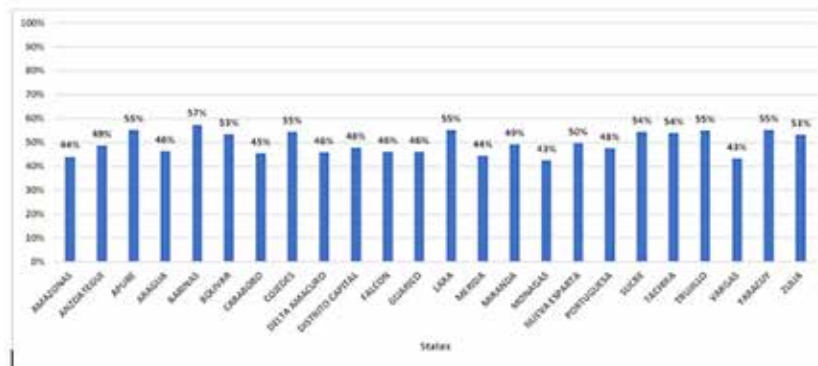

Figure 11. Venezuela: quarantine compliance by state (percentage), 2020. Source: (6).
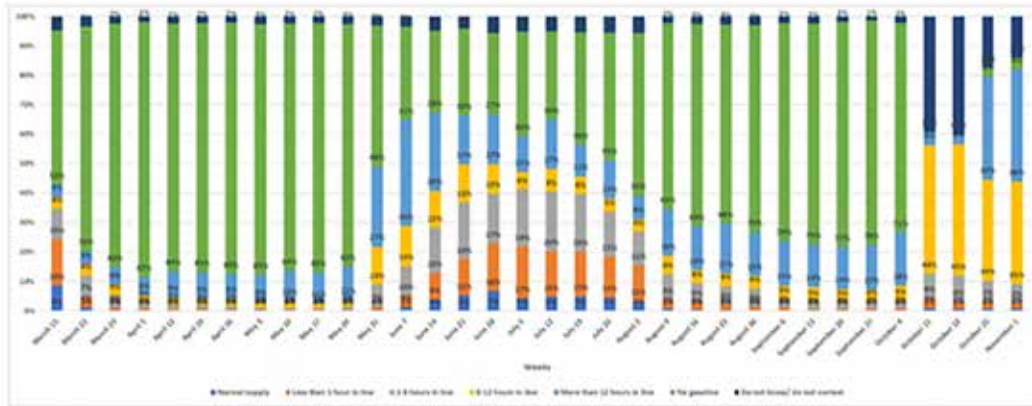
Figure 12. Venezuela: reported gasoline availability (weekly percentage of population), March-November, 2020. Source: (7).
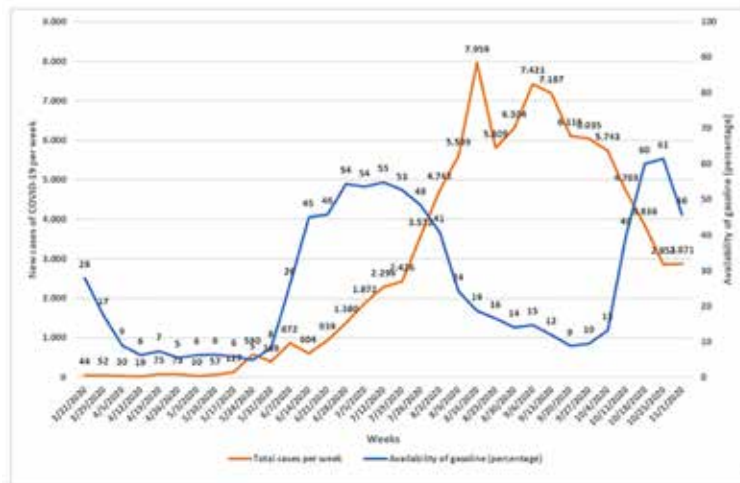

Figure 13. Venezuela: comparison of new cases of COVID-19 and availability of gasoline. March-November, 2020. Sources: Ministry of Health, (7).

National Therapeutic Committee and access to medicines

One of the main functions of the State is to define the treatment schemes in high prevalence diseases. This is particularly useful in a situation such as the current COVID-19 epidemic. This role is especially critical in a situation such as the current one, where there are almost no scientifically valid treatment options, but at the same time, there are a number of drugs in trial with little evidence of effectiveness in treating patients with COVID-19. In a normal situation, it would have been logical for the national government structures to convene the country's academic bodies to reach agreements and define single management, identification, strategy, and treatment policy. Unfortunately, this has not been possible in Venezuela until now. According to information provided by the academic organisms, they have not been summoned to discuss these aspects with the government entities since the first days of March 2020. We know from information from the Pan American Health Organization

(PAHO) that there have been attempts to conciliate and to bring together working tables between the academic and governmental sectors, but until the end of October 2020 this has not been possible.

In practice, there are some recommendations made by what has been called the "National Therapeutic Committee" in relation to the definitions and treatments recommended by the Ministry of Health (MPPS) in our country (8,9). Likewise, some scientific societies such as the Venezuelan Society of Infectious Diseases published in September some guidelines for the treatment of COVID-19 according to a review of the evidence available up to that moment (10). The difference between these documents only expresses the inability to reach minimum agreements or the necessary dialogue so that the government health world would have some form of interrelation with the Venezuelan academic world. The government document is a kind of progressive incorporation of therapeutic schemes available in the world up to this point, but it does not seem clear that there is a thorough evaluation according to evidence-based medicine criteria; therapeutic strategies have only been incorporated to the extent that they have been available worldwide but without a formal qualification of how rigorous the analysis is or how much evidence each of the therapeutic schemes has for the effects of the treatment of COVID-19.

Beyond the strictly academic aspects of COVID-19 treatment, an alternation of recommendations and treatment access schemes has been observed in government policy, which has been quite erratic. So far, beyond what is indicated in the guidelines of the "National Therapeutic Committee" there is no document, explanation, or educational format that allows citizens to understand how to access the different therapeutic schemes that the government team has recommended. An illustrative example of this problem is access to the antiviral drug Remdesivir. This drug, which has been promoted by official media such as radio and television stations and communications from different government agencies, is not linked to a logical algorithm of how citizens can access the drug through official channels. In a certain way, access to this drug through official channels has been very restricted and the information that we obtain from some hospitals is that access is only through non-formal,

non-regular channels, or that it depends on the connection that the family members or the patient have with State structures.

On the other hand, the common citizen most of the time only has access through direct purchase in pharmacies with a very high cost of around $1,500 for a 5-day treatment scheme, which in the economic context of Venezuela represents more than 5 years of the minimum salary of an average doctor. The direct consequence of this situation is that access to this and other medicines generate very important inequities. Only those who have some form of connection with the national government or with incomes that are beyond the reach of most Venezuelans could have access to this type of medicine. It has been equally striking that different unqualified government spokespersons in the area of science have disseminated therapeutic schemes (under study or in the process of being researched), which creates false expectations among citizens who cannot understand that these therapeutic strategies are far from being real at present. As an example of these, we can name the use of ozone, herbal medicine, medicines not registered in Venezuela, serum from convalescent patients or other non-human species, which up to the moment have no evidence of clinical use in daily practice. Worse still is the use of communication during the epidemic to spread the word that these therapeutic schemes are the solution to the management of the epidemic, which in some way contradicts the international regulations on information to be followed on these risks. Another very characteristic example was the offer of the vaccine of Russian origin as a solution for the epidemic, when in fact what is being offered is a very limited solution as part of the research process of phase III, with the possibility of incorporating between 3 to 4 thousand Venezuelans to the study.

Communication management, risk, and state control

Communication management and risk education in epidemics have a fundamental role in today's world. Citizens must be directly aware of the risks of epidemics to which they are exposed on a daily basis. Some aspects have been highlighted in the communication policy of

the high government in relation to the pandemic. Among them we can mention:

Criminalization of Venezuelan migrants who are returning to Venezuela across the border from Brazil and Colombia. High government spokespersons have criticized the country's entry and have exposed the returning migrants to a kind of public derision with epithets such as bioterrorism. Most of them are returning to the country in precarious conditions. Even though there is a theoretical risk of entry of people with infection or potential contagion of coronavirus for the locals, it has been very striking that the prevalence of the disease in the border areas, particularly on the Colombian side, has been much lower than on the Venezuelan side. In addition, it seems unlikely that people leaving from a destination that requires days or weeks of strenuous travel will be able to carry the disease and voluntarily transmit it to fellow citizens once they enter the national territory. High-level national institutions such as the Catholic Church, non-governmental organizations, human rights organizations, and scientific organizations have spoken out against the criminalization of returning migrants. This criminalization not only violates fundamental human rights but also does not help in the epidemiological management that involves early identification and contact tracing. Criminalization generates a negative environment for diagnosis, identification of possible cases and thus preventing the spread of the virus.

Another fundamental element in government advocacy has been the sponsorship of treatment strategies that have no foundation or on which there is no demonstrable scientific evidence so far.

The lack of transparency with regard to epidemiological information has been a constant feature of this government, not only in this epidemic but also in other previous epidemics. Pressure on health personnel and abuses in the labor or trade area have been frequent due to their denunciations of hospital deficiencies or inconsistencies in the data on the epidemic in Venezuela. Access to information to be provided through the public media has been very restricted, which violates fundamental rights regulations.

CONCLUSIONS

The main characteristics of the COVID-19 pandemic control policies implemented in Venezuela are as follows: 1) difficulty in accessing diagnostic tests and excessive centralization of their processing and information, 2) little transparency on epidemiological data, 3) little response capacity for hospital adaptation, 4) situation of the extreme vulnerability of the public health system, 5) early and prolonged quarantine with little technical criteria to decide on flexibility, 6) lack of linkage of the governmental world with social sectors related to the epidemic, in particular with the academic health sector and NGOs, 7) communication policy with stigma on the most vulnerable and favoring therapies with political purposes whose effect is not internationally validated.

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