https://doi.org/10.1590/1516-3180.2020.0442.R1.18112020

Poor sanitation and transmission of COVID-19 in Brazil

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KEY WORDS (MeSH terms):
Coronavirus.
COVID-19 [supplementary concept].
Pandemics.

AUTHORS' KEY WORDS:
Iniquities.
Water access.
Basic sanitation.

ABSTRACT

Coronavirus is a family of viruses that cause respiratory infections. From cases first recorded in China at the end of 2019, a new type of virus in this family, named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was discovered. The disease caused by this virus, COVID-19, was brought into Brazil by people in social classes with greater purchasing power, but groups with larger demographic dimensions have tended to become more affected over time. Poor sanitation can generate risky situations and behavior among people who live in spaces with characteristics that limit their quality of life. Installation of piped water in homes and basic education for the population are fundamental measures for disease control, including in relation to COVID-19. In this updating article, the COVID-19 pandemic was analyzed in the context of iniquities in Brazil (comparing these with the situation in other countries). A bibliographic search of texts relating to basic sanitation, socioeconomic development and transmission of COVID-19 in Brazil and worldwide was conducted.

INTRODUCTION

The dissemination of COVID-19 is a challenging public health problem within today's globalized world. Globalization has expanded the world's crossroads to make them more complex, which has given rise to the need to take a new look at new problems.[1]

COVID-19 was brought into Brazil from outside the country, by people in social classes with greater purchasing power. Given that it is a disease spread through social contact, it can be suggested that groups with larger demographic dimensions would tend to become more affected over time. Within this context, it is necessary to reflect on the work and housing conditions of salaried workers, in relation to those in precarious self-employment. Among the latter, their circulation imposed by the search for subsistence is a factor that increases the risk and also leading to risky behaviors with regard to the pandemic.[2]

Social inequalities generate more precarious situations, which can lead to illness and death. Inequalities are a differential feature among the various social structures present in Brazil. The COVID-19 pandemic has shown that historically neglected population groups are among those most affected, especially with regard to higher risk of death.[3] Its consequences have further stressed the need to invest in wastewater treatment infrastructure and sanitation in developing countries.[4]

OBJECTIVE

The aim of this study was to analyze the COVID-19 pandemic in the context of unjust and avoidable inequalities (called iniquities) in Brazil.

A bibliographic search of texts relating to basic sanitation, socioeconomic development and transmission of COVID-19 itself was carried out. The focus was on discussion of the pandemic and on making connections with Brazil's structural problems and comparisons with other countries, especially those of low to medium developmental level (i.e. similar to Brazil).

COVID-19

The coronavirus family of viruses causes respiratory infections. A new type of virus from this family was discovered on December 31, 2019, subsequent to the first recorded cases in China, and was named SARS-CoV-2. The disease caused by the new virus, COVID-19, gives rise to clinical conditions that range from asymptomatic infection to severe respiratory conditions. Its symptoms can vary from a simple cold to severe pneumonia, and the most common of these symptoms are a

runny nose, coughing, sore throat, fever and difficulty in breathing. It is transmitted from a sick person to another individual through close contact: via handshaking, droplets of saliva, coughing, sneezing, sputum or contaminated objects/surfaces.[5]

The recommendations for prevention of COVID-19 comprise frequent handwashing with soap (or sanitization with 70% gel alcohol); keeping a minimum distance of two meters from anyone who is coughing or sneezing; not sharing personal items (drinking glasses, cutlery and plates); keeping environments clean and ventilated; avoidance of unnecessary movement of people on the streets; and use of masks, which can be homemade. If a person feels sick, with flu symptoms, he or she should avoid physical contact with other people and should stay at home for at least 14 days.[5]

BASIC SANITATION IN BRAZIL

Several studies have highlighted the importance of water supply and sewage treatment.[4,6-11] When these are absent, this can impact the health of the population, especially through the spread of worm diseases and increased incidence of diseases such as malaria and schistosomiasis.[12] Although basic sanitation has been recognized as an essential human right, universal access to it is far from being reached.[11]

In Brazil, recognition of the need for water and sewage services involves the three spheres of government (federal, state and municipal), trade unions, political parties, companies (national and foreign) and financial corporations, with a plurality of social agents and interests. Thus, water and sewage services can be understood as a basic human right. However, in Brazil, this issue ends up reaching a higher level of contention, given that both public and private administrative bodies seek to exploit the cultural, economic, symbolic and social capital surrounding this basic human right, as an instrument for bargaining and domination.[13]

Despite advances towards reducing inequalities that have been achieved in Brazil over recent decades,[14] this country still faces great difficulties in terms of water supply and sewage collection and treatment. In one study,[15] it was shown that, in 2017, some Brazilian state capitals presented a very low level of provision of piped water supply, such that less than 40.0% of the population received these services (Macapá and Porto Velho, respectively, with water service indicators of 39.1% and 33.1%). Regarding sewage, Belém, Macapá and Porto Velho were among the 20 worst cities in the 2017 sanitation ranking with, respectively, total sewage service indicators of 12.6%, 8.9% and 3.4%. Thus, even in regions with abundant water resources, such as the Amazon region, there are difficulties in accessing drinking water because of lack of infrastructure (collection, treatment and supply). The same is seen with regard to sewage, which can be portrayed as a problem of natural resource management, given that lack of sewage treatment leads to pollution of water courses in the Amazon region.[16]

In relation to the COVID-19 pandemic, poor sanitation can generate risky situations and behaviors among people who live in spaces with characteristics that limit their quality of life.[2] It can also be a risk factor for diseases such as dengue, given that water storage in large buckets (because of the absence of piped water) and inadequate waste management have been considered to be factors responsible for maintaining this disease.[17] Within this context, several studies have been highlighting the possibility of transmission of COVID-19 through feces and urine,[4,18-20] which can lead to worse scenarios in the long run.[4]

Adverse bio-socio-ecological factors and difficulties in accessing healthcare services are still a reality in Brazil[21] and other Latin American countries.[22,23] These problems have led to establishment of certain diseases as everyday experiences for people.[21] Therefore, installation of piped water in homes and basic education for the population,[24] including health education activities for communities,[25] are fundamental measures for disease control, including in relation to COVID-19.

COVID-19 AND INIQUITIES IN BRAZIL

The evident inequalities in Brazil, in which the existential minimum is compromised,[26] have meant that the COVID-19 pandemic has constituted a major challenge for this country.[27] Brazil still has a long way to go towards universalization and equity of provision of basic sanitation services, even in metropolitan regions.[28]

In addition to the lack of basic sanitation, drug use, deaths due to accidents and urban violence, and respiratory problems associated with pollution, continue to form part of the public health agenda in Brazil. This is true in all its urban regions, but these issues especially affect the populations of vulnerable communities in peripheral areas. Consequently, the growing social vulnerability and expansion of social segregation have had an impact on the distribution of diseases in different regions and at different geographical scales. These factors have favored reemergence of old endemic diseases and emergence of new diseases.[29]

For COVID-19, like other diseases,[30] a healthier socio-spatial environment is required in order to overcome it. Lack of environmental improvements, thereby perpetuating disease, is one of the consequences of socially reproduced iniquities in Brazil[29] and in other less developed countries.[31] The inequalities in this country mean that diseases tend to affect the poor population and the people most exposed to social contagion, more severely. This population includes people living in peripheral areas, people in prisons, homeless people who have been gathered into shelters, people dependent on public transportation, workers who deal with other people (these represent a large proportion of the Brazilian working population)[32] and vulnerable populations who live in slums (favelas).[33-35]

Within this context, a single city may present socio-spatial inequalities (as observed in Rio de Janeiro),[36] which can be seen in the population's

socioeconomic and cultural behaviors. This has also been observed in Kuwait, where the relationship between poor housing conditions (including in densely populated areas) and increased transmission of COVID-19 among communities of migrant workers was highlighted.[37]

Given the scenario of iniquities in Brazil, implementation of social isolation measures has become complex. Although these measures have been brought in within all administrative spheres,[38] they are presented differently throughout the country. A study that analyzed factors associated with the population's behavior during the current social isolation (quarantine) showed that among people with higher education and income, 45.8% declared that social interaction was the most affected aspect of their lives. On the other hand, among people with lower income and education, 35% declared that financial problems were having the greatest impact. Thus, it can be seen that possession of income provides the possibility to transcend needs towards a life of choices (and with the ability to exercise freedom of choice). However, when income is unsatisfactory, this makes it mandatory to go to the streets to search for job opportunities.[39] This reality has also been observed in sub-Saharan African countries, where individuals in households without basic necessities were more likely to violate control measures through going out from the home to meet their needs. Hence, it is clear that vulnerabilities and the risk of transmission of COVID-19 transcend national and international scales.[32]

Studies on health inequalities in favelas started to be conducted long ago.[40] These studies have demonstrated that health inequalities have been a reality in these areas, and many others, for a long time. Peripheral settlements (macro-scale) and favelas (micro-scale) in Brazil are an expression of socio-spatial segregation. They represent situations of poverty based on precarious social conditions and infrastructure (and even differences in income from work), in enclaves in metropolitan territories.[41]

Socio-spatial inequalities can be observed within a single city, shown by socioeconomic and cultural differences in the population.[42] These lead to differences regarding COVID-19 transmission. In Rio de Janeiro, it was observed that initially the neighborhoods in the South Zone were the most affected by the disease. The districts of the North Zone (in general, of lower-income populations) showed higher mortality rates due to COVID-19, which may have reflected a lack of access to healthcare services.[36] This socio-spatial differentiation was also observed in Bangladesh, where greater risks of transmission of COVID-19 were observed in the central and southeastern regions of the country. Furthermore, it was also highlighted in that study that measures to reduce disease transmission (such as social distancing) are extremely important, especially in countries with inadequate healthcare services.[43]

The social conditions under which individuals are born, raised, live, work and grow old are responsible for the differences in health situation that are observed between countries and even within them. It is important to emphasize that these differences are unjust and preventable and that this is why they are called health iniquities.[44]

FINAL REMARKS

The new coronavirus pandemic has posed a challenge to humanity. However, its effects have tended to be more acute in populations that present greater iniquities and will tend to become worse until a definitive solution to the pandemic is reached. Hand hygiene, a preventive measure for COVID-19,[14] is still a privilege in Brazil, since in several regions of the country, many homes do not have access to water and basic sanitation.[45] Because universal access to water and basic sanitation has not yet been implemented,[11] this basic human right remains far from being achieved.[13] Absence of universal access directly impacts the population's health[12] and constitutes an avoidable iniquity.[42]

Several other problems continue to form part of the public health agenda in Brazil and in other countries,[37,46] affecting mainly vulnerable populations in peripheral areas. Understanding the social conditions under which individuals live is central for implementing public policies based on solidarity, social rights and democracy, so as to ensure healthier socio-spatial environments and enable reduction of the effects of the pandemic. For this, it is necessary to analyze the information regarding the pandemic in terms of race/color, income and other social determinants, thus making it possible to have differentiated actions for the places, areas and regions of greatest vulnerability.

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Authors' contributions: Alves MR: acquisition of data, editing of the text and translation into English; Souza RAG: interpretation of data and revision of work; and Caló RS: acquisition and analysis of data. The final version was approved by all authors, who agree to be accountable for all aspects of the work

Sources of funding: None
Conflict of interest: None

Date of first submission: August 14, 2020
Last received: October 27, 2020
Accepted: November 18, 2020

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