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Original Paper

The Challenges Confronting Countries in the Tropics Affected by Covid-19

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Abstract

Compared with other regions of the world, countries in the Tropics appear to have less Covid-19 cases and lower death rates. Warmer temperatures and higher humidity have been proposed as an explanation. An alternative interpretation is that the figures result from a lack of aggressive testing. Regardless of the cause, this paper suggests that the way in which governments respond to the pandemic has a significant impact on containing the pandemic. Additionally, pressing challenges for countries in the Tropics are a lack of water and sanitation, insufficient personal protective equipment, and inadequate training of clinical staff. Suggestions for moving forward are proposed.

Keywords

Covid-19, Tropical nations, government responses, challenges to containment

1. Introduction

The new coronavirus disease, which took the world like a bush fire, originated in China in late 2019. It was transmitted to the rest of the world by air, sea, and road. This paper looks at the challenges of infection within the countries of the Tropics and suggests ways to address some of these challenges. The countries in question fall between the Tropic of Capricorn, 23^0 south of the Equator, and the Tropic of Cancer, 23^0 north of the Equator. This area includes countries in Latin America and the Caribbean, Africa, and Asia.

Tropical countries have generally had a slower rate of Covid-19 spread than other countries. A possible explanation for this is the high humidity and temperatures of the tropics. However, this explanation has been questioned by several scholars. For example, Dapcevich (2020) argues that there is little relationship between weather and coronavirus, although he does add that the influenza and cold viruses

tend to peak in the colder months and slow down during summer. Other studies also confirm that coronavirus infections tend to be associated with winter because of how they spread (Aubrey, 2020). This is the case with influenza which thrives during the colder months, helping the virus to spread more easily from person to person.

Drawing on empirical data, Dapcevich (2020) argues that warmer and more humid environments, such as those of Argentina, Brazil, and Australia, appear to support virus spread, as these countries have all had a considerable number of confirmed cases. Moreover, quoting experts' views, he stipulates that rather than climate, what actually will determine the decline in the rate of transmission of coronavirus will depend on government responses, the quality of medical care, population density and other factors. However, Dapcevich (2020), quoting Professor Marc Lipsitch, emphasizes that "*even seasonal infectious can happen 'out of reason' when they are new*" due to "*their temporary but important advantage: few or no individuals are immune to them*". Regardless, this virus is novel and the influence of climatic conditions on the spread of this disease is yet to be scientifically established.

2. Current Figures

According to data from the *Worldometer*, dated 12 April 2020, most tropical countries have not only low numbers of positive cases, but also low death rates. As of that date, the only tropical country with more than 10,000 positive cases was Brazil with over 20,000 cases, which is low relative to its population of approximately 210 million. Similarly, although India had over 8,000 positive cases, that number represents a small percentage relative to its population of more than one billion people. Table 1 documents the number of cases and death rates of selected tropical nations.

In the Caribbean, the Dominican Republic had more than 2,700 positive cases and over 130 deaths. This is worrying relative to the total population of about 11 million. Jamaica and Barbados appeared to have few positive cases and their death rates were low. It should be remembered, however, that low numbers of positive cases might be ascribed to a lack of aggressive testing.

Of the eight tropical African countries sampled, Côte d'Ivoire, Democratic Republic of Congo, Ghana, Kenya, Malawi, Nigeria, Rwanda and Senegal, each had less than 1,000 positive cases, although their numbers seemed to be growing. As of April 12 2020, Côte d'Ivoire and Ghana had more cases than the other African countries. In Asia, the number of cases in Indonesia, the Philippines, Malaysia and Thailand were growing, with Indonesia having the most positive cases at 3,800, with deaths totalling over 300. In general, all the figures from the tropical countries may not be realistic owing to a lack of testing facilities. After the end of April, the situation may become clearer.

Table 1. Covid-19 in Selected Tropical Countries as of 12th April 2020

Country	Positive cases	No. of deaths	Testing capacity
Barbados	68	4	Y
Bolivia	300	24	Y
Brazil	20,964	1,141	Y
Colombia	2,709	100	Y
Costa Rica	577	3	Y
Côte d'Ivoire	553	4	Y
Cuba	669	18	Y
Democratic Republic of the Congo	234	20	Y
Dominican Republic	2,759	135	Y
Ecuador	7,466	333	-
Ghana	408	8	Y
Indonesia	3,842	327	Y
India	8,504	289	Y
Jamaica	72	4	Y
Kenya	191	7	Y
Malawi	12	2	Y
Malaysia	4,830	73	Y
Mexico	4,219	273	Y
Nigeria	318	10	Y
Peru	6,848	181	Y
Philippines	4,648	220	Y
Rwanda	120	0	Y
Senegal	278	2	-
Thailand	2,551	38	Y
Trinidad & Tobago	113	8	Y
Venezuela	175	9	Y

3. Government Responses

As of April 12 2020, tropical countries' government responses to the pandemic were uneven, confusing and wanting, unlike China, where the Government declared a total lockdown for over two months and achieved fairly positive results overall with only 3,300 people dying in hospital. The common guidelines endorsed by WHO include social distancing, limiting gatherings to a small number, staying

at home and self-quarantine. However, each country has interpreted the guidelines differently. For example, in Bolivia the Government prohibited large-scale gatherings of more than 1,000 people. In Brazil, the Government decided to follow a policy of business-as-usual. Given that the number of positive cases is increasing, this seems not to have been successful. Of the other Latin American countries sampled, as demonstrated in Table 2, only Colombia and Peru imposed national lockdown and Mexico declared a nationwide emergency. Others have declared a partial close down.

In the Caribbean, Barbados imposed lockdown, Jamaica declared a national disaster and Trinidad and Tobago introduced partial restrictions. In Africa, Rwanda imposed a total lockdown, Senegal a curfew, and Nigeria a lockdown for Lagos, Abuja and Ogun states. In the case of Kenya, the Government introduced an all-night curfew and restricted movement into and out of Nairobi and Mombasa and their surrounding counties. In Ghana, a major lockdown was declared for greater Accra, Tema and Kumasi.

In Asia, Thailand and Indonesia both declared a state of emergency, while India has been on a nationwide lockdown. In the Philippines, the Government declared a state of calamity and a partial lockdown.

Table 2. Governments' Responses to Covid-19 Outbreaks

Response Measures	**Countries**	**No. of cases**	**No. of deaths**
Total lockdown	Barbados, Colombia, India, Malaysia, Peru, Rwanda, Venezuela	23,254	656
Partial lockdown	Bolivia, Costa Rica, Côte d'Ivoire, Cuba, Democratic Republic of the Congo, Dominican Republic, Ghana, Indonesia, Kenya, Malawi, Mexico, Nigeria, Philippines, Senegal, Thailand, Trinidad and Tobago	21,672	1,099
No significant measures	Brazil, Ecuador, Jamaica	28,502	1,478

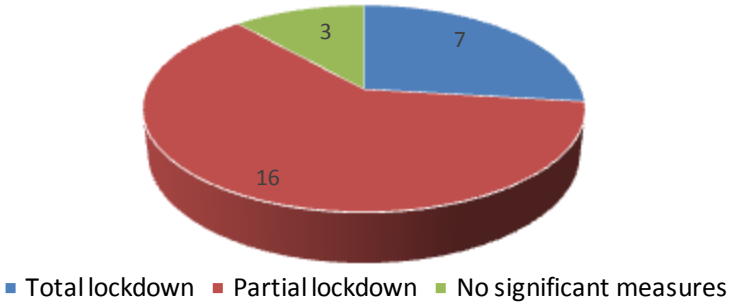

Figure 1. Proportional Representation of the Number of Countries according to Government Response to the Covid-19 Outbreak

While Figure 1 proportionally represents the different government responses, Figure 2 depicts the total number of positive Covid-19 cases according to government response.

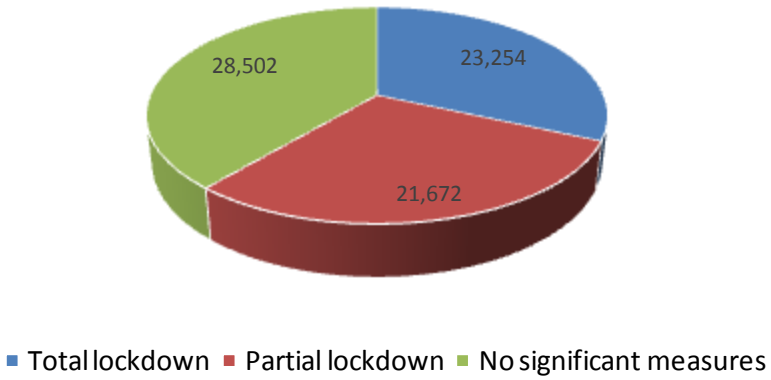

Figure 2. Proportional Representation of the Number of Cases according to Government Response to the Covid-19 Outbreak

Analysis of the data in Table 2 and Figures 1 and 2, reveals varied results. For example, under total lockdown there were 23,254 positive cases and 656 deaths in a population of 1,825 million (including 1,380 million in India), while under partial lockdown there were 21,672 positive cases with 1,099 deaths in a population of 1,065 million. The countries that took no significant measures had 28,502 cases and 1,478 deaths in a population of 233 million (including 213 million in Brazil). One observation is that the countries under total lockdown had fewer deaths than the countries that took no significant measures. However, as a proportion of the total populations sampled, countries that imposed no significant measures had considerably less infections than those that imposed either form of lockdown. These figures represent an initial observation, as confounding factors such as who gets

tested, for example only people exhibiting symptoms of the disease or larger swathes of the population, will factor into the significance of these findings.

4. Challenges in Containing the Virus

Given the viciousness of coronavirus, governments have had to make difficult but essential decisions that have had a huge socioeconomic impact. The challenges in implementing the measures are particularly difficult in those countries with huge slums and high unemployment. Two challenges that are common to many tropical countries are a lack of adequate water and sanitation, and a lack of Personal Protective Equipment (PPE) for, and training of, medical personnel.

4.1 Lack of Water and Sanitation

One of the main messages in the global campaign for combating the coronavirus is the importance of washing hands with soap and running water. During *World Water Day* on 20 March 2020, *Water Aid UK* noted that low- and middle-income countries face a dual challenge: they do not have any way to wash hands, and knowledge on how and why to wash hands properly is not widespread (RSTMH, 2020). According to RSTMH (2020), nearly 75 per cent of households in sub-Saharan Africa lack basic hygiene facilities to wash their hands with soap and water in their homes. Globally, only 19 per cent of people wash their hands with soap after using the toilet despite hands being the principal cause of transmission of disease-causing germs (RSTMH, 2020).

According to *The Guardian*, most low- and middle-income countries are at greatest risk in the coronavirus crisis (Harvey, 2020). The article suggests that low investment in water and sanitation has occurred because the services are perceived as social and environmental rather than economical. Rural areas across the Tropics, as well as the slums of major cities, continue to be very vulnerable to the spread of Covid-19. Governments, such as those in Latin America, are currently setting up emergency provision 是 of water supply to the poor and vulnerable groups, including water tanker distributions in Colombia, Costa Rica, Dominican Republic, Mexico, and El Salvador (Serrano & Torres, 2020). Moreover, priority is being given to hospitals and institutions serving the most vulnerable communities, as for example, in Jamaica. In many countries in Latin America, disconnection of services due to lack of payment has been suspended (Sorreno &Torres, 2020). In Sao Paulo, Brazil, water tariffs for low-income people have been put on hold and debts of individuals and companies have been deferred for 90 days. In comparison, the urban poor in both tropical Asian and African countries are more vulnerable to this pandemic because of the inequalities that characterize the provision of water services, and the often lack of means to wash their hands (Amankwaa, 2020). However, some governments are providing water tanks and jerrycans for the urban poor and in open markets of major cities.

4.2 Insufficient Personal Protective Equipment and Lack of Training of Clinical Staff

Since the onset of the new coronavirus outbreak, most countries, both developed and developing, have

found themselves with insufficient or without Personal Protective Equipment (PPE). This has been the case in Italy, Spain, the United Kingdom, the United States, and of course, most of the developing world. Across the Tropics, most of the countries are ill equipped with PPE, have inadequate numbers of doctors and nurses and inadequate hospital facilities. Those nurses and doctors that are available, have had to undergo rapid training regarding how to handle coronavirus infected patients. Most of the countries have no ventilators to treat patients and lack PPE clothes, boots and masks, even for medical personnel. In Kenya, the informal sector is flourishing as local tailors make masks of all types for local distribution. In the light of the cancellation of flights and thus export opportunities, the few textile companies in the country have been encouraged to make PPE. It is hoped that locally produced PPE will meet the required standards to support the work of the committed and determined health care staff. There is no doubt that other countries are also equipping themselves against this virus.

5. The Way Forward

The countries in the Tropics should not be complacent about the low figures of positive cases and deaths. They should continue forward with the following:

5.1 Learn from Best Practice

The available examples are China, Singapore, South Korea, and Taiwan. For example, South Korea has emphasised tracing contacts, testing and isolating (Noor & Sundaram, 2020). In the case of Taiwan, Tu (2020) states that containment has been due to effective Government-led public-private collaboration; integration of the media in efforts to regularly broadcast basic preventive information, such as washing hands, wearing masks, and social distancing; the provision of clear and decisive guidelines, and ensuring the strong support of citizens. In the case of Singapore, Heijmans (2020) concludes that its current success is based on its top-notch health care system and draconian tracing and containment measures. Based on the above, countries in the Tropics should embrace the best practices and avoid examples from Brazil and Sweden where the governments are continuing with business as usual.

5.2 Ensure Transparent and Aggressive Testing

It is arguable whether the figures from the countries of the Tropics are really low in the absence of aggressive testing. From the examples of Singapore, South Korea, and Taiwan, tropical country governments should strengthen their early warning systems, increase the transparency of information, and carry out accurate diagnosis. For instance, South Korea has 185 testing stations operating in different parts of the country as of March 2020. Interestingly, at most of these stations, one can drive in, get tested and obtain the results instantly (UNDP Seoul Policy Centre, 2020). What is needed in most of the countries in the Tropics is investment in high-quality health care systems, like those of Singapore and Cuba, so that their leaders do not have to use their meagre foreign exchange to travel abroad for medical attention. Ironically, even developed countries like Italy, Spain, the United Kingdom, and the

United States are all infested with the new coronavirus: this has put leaders of developing countries on notice.

5.3 Enforce Social Distancing and Self-quarantining

To win the war on the new coronavirus, social distancing and self-quarantine are two critical factors. However, this is going to be a challenge for all countries in the Tropics. Many of the countries with densely populated urban centres, like Dar es Salaam, Delhi, Dhaka, Jakarta, Lagos, Manila, Mumbai, Nairobi, Rio de Janeiro, Sao Paolo, and others, have huge slums, where many people or families are squeezed into small rooms. Additionally, congested public transport and teaming markets mean that social distancing will continue to be a big challenge. Hence, these will be hotspots of increasing positive cases of coronavirus.

5.4 Collaborate Internationally

COVID-9 is a new and virulent disease and as such, there is urgent need for collaboration among countries, especially in the medical fields. Fortunately, the existing *South-South Cooperation* framework can facilitate this. For example, Cuba has been helping many countries in Latin America, the Caribbean, and in Africa, with their doctors and clinical staff. More recently they sent their doctors to assist in Italy. India has very good facilities and many people from Africa go there for medical treatment. There should be collaboration among medical scientists in these countries, working together through *South-South Cooperation*, to come up with drugs against the new coronavirus or any other viruses. For example, a public university in Kenya recently reported that its faculties of engineering and medicine have manufactured a prototype ventilator that, once approved, could be used to treat COVID-19 patients. There should be collaboration in producing PPE within this region for local consumption and for any eventuality.

6. Conclusion

The new coronavirus pandemic exposed the poor state of preparedness of the world at large to deal with such an event. Even countries who had experienced previous pandemics were not prepared. As Macky Sall, the President of Senegal, noted, "*the level of unpreparedness due to the sudden onset of the pandemic, its rapid evolution and the enormous needs to be addressed, is a clear indication that national measures remain inadequate*" (Sall, 2020). Therefore, for countries located in the Tropics, the message is clear, they must prioritize public health. Neighbouring countries need to cooperate and enforce similar measures, such as lockdown, along their borders. This global pandemic has shown us that in the face of cross-cutting threats, big or small, rich or poor, we are all vulnerable. Given that this virus covers the entire world, there is a call for strong collaboration and partnership between the developing world and developed countries in research, innovation and international solidarity.

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