

India Seemingly Scores Better Than Other Countries in Containment of the COVID-19 Pandemic

Anita Garg Mangla, Neeru Dhamija

Abstract:

The world is currently facing a coronavirus pandemic, COVID-19 (formerly known as SARS-CoV-2). It was declared as a pandemic by WHO on 11th March 2020 (1). Coronaviruses (CoV) are named so because of the 20 nm spikes on the envelope that resembles the corona of the sun when viewed under electron microscope. As of 21st June 2020 it has spread to 215 countries with more than 8.92 million positive cases globally. Worst top 5 affected nations include USA, Brazil, Russia, India and UK. The number of positive coronavirus cases is increasing day by day globally. This virus like other respiratory viruses is considered to spread mainly via respiratory secretions or droplets.

A study has shown that virus can remain viable up to several hours on various surfaces such as up to 4 hours on copper, 24 hours on cardboard, 48 hours on stainless steel and 72 hours on plastic. Thus they can be spread by direct contact with infected persons or by coming in contact with surfaces that have been touched by an infected person (indirect contact). The virus is also spread by asymptomatic individuals. Even if they are not sneezing or coughing, they may expel viral particles during normal talking, breathing or touching various surfaces. A study conducted in China showed that five family members became symptomatic after coming in contact with an asymptomatic member.

Researchers have also shown that viral loads in an asymptomatic subject were comparable to those of symptomatic subjects. A high concentration of viral shedding from nasal cavity, by pre-symptomatic patients also, in the upper respiratory tract, is responsible for its high transmissibility (2). India being the second most populous nation with 17.7% global population of 1.37 billion people has so far contained the spread of virus better than other worst hit nations. As of today India is the fourth worst affected country with about 0.41 million people infected. The first positive case in India was reported in the Thrissur district of state Kerala on 30th January 2020 of a student of Wuhan university who has returned back.

During the initial period there weren't substantial increase in number of cases in India. On 15th March number of cases crossed 100 in India. India being a densely populated country with patchy health care system and high rate of migration is at high risk. In India because of high density of population about 420 people live on each square kilometer as compared with 148 per square kilometer in China. Therefore maintaining a social distancing is an uphill task. Maharashtra is the current hotspot of infections in India amounting to about 33% of total cases. Places such as Mumbai's Dharavi slum or even a characteristic Indian household having stretched families can easily expedite droplets emitted by talking, breathing, coughing or sneezing. India also has a high rate of internal migration.

As per 2011 census about 450 million people moved from one area to another in search of opportunities. Also, there is a huge population which commute on an everyday basis from their village to cities for work (3). Additionally, the country's healthcare spending is among the lowest in the world-just 3.7% of gross domestic product. So far India has successfully contained spread of the pandemic and various measures taken well in time helped the government

to achieve this. As of 21st June, total number of Covid-19 positive cases in India is about 0.41 million which is about 298 cases per million population and number of deaths per million population is about 10 and both are the least amongst the worst hit 20 nations (4).

Many countries like US and India started screening people in February (for symptoms of cough or cold and temperature) travelling from China and later those travelling from other countries too and asked them to home quarantine for 14 days. Indian government imposed strict lockdown from 24th March onwards for the longest period of time any nation has done globally, which also helped the nation to improve medical infrastructure to fight the pandemic. Awareness was spread amongst people through advertisements on social distancing, usage of masks and hand-washing to avoid the contact of virus. Also, ArogyaSetu app was launched on 2nd of April in India which is promoted by the Ministry of Electronics and Information

Technology and provides its users a self-assessment survey on their health condition and their locations to be tracked by device Bluetooth or GPS till they test positive for the disease and their positive status for the disease is uploaded on the government servers (5). Also other reasons can be attributed to lower spread of pandemic in India. The usage of BCG vaccine for tuberculosis has been reported to have a protective effect against COVID-19. Both, COVID-19 and tuberculosis affect lungs which must be the reason for its protective effect for COVID-19.

Also, the health care system in India have expertise in fighting against diseases given the prevalence of malaria, dengue and tuberculosis. The lower share of elders in the Indian population may also be a protective characteristic against COVID-19 since elders are more susceptible to this disease. Another reason can be difference in temperature of different geographical zones of the world. As has been documented increase in temperature and humidity reduces the stability of the virus, both in air and on different surfaces. This can also be a reason why India and other countries of the temperate zone have not seen as many number of cases as in USA or UK. Its yet to be seen that in coming months whether India will be able to contain further spread of the virus.

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Name: Anita Garg Mangla, Neeru Dhamija

Affiliation: Department of Biochemistry, Daulat Ram College, University of Delhi, India, Email: anitamangla@yahoo.com