

Controlling Covid-19 Needs More Than Just A Vaccine; It Requires An Integrated Control Strategy

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COMMENTARY

The ongoing worldwide pandemic of Coronavirus Disease 2019 (COVID-19), which outbreak in December 2019 in China (Wuhan) and quickly spread around the world, is the most widespread and devastating infection in the present time [1]. This virus produces a severe lower respiratory tract infection, with viral pneumonia occurring in roughly 75% of COVID-19 hospitalized patients. Despite the fact that the mortality rate associated with COVID-19 is only 2%, much less than the earlier zoonotic coronavirus epidemics such as 10 % for Severe acute respiratory syndrome (SARS) and 30% for Middle East Respiratory Syndrome (MERS) [2], and 50% for Ebola. Accordingly, COVID-19 is not the deadliest viral disease. However, COVID-19 is more contagious than SARS and MERS and its high spread rate is fraught with hazards, requiring stringent policies and plans [3]. Interestingly, the wide range of animal species vulnerable to COVID-19 clearly implies that these viruses have the potential to overcome the species barriers, especially given the frequent interactions between predators and other small mammals that might aid interspecies transmission [4]. The scientific community has put forth a lot of efforts to combat this pandemic, and as a result, a range of vaccines have been developed. COVID-19 variants are constantly emerging, which is unfortunate. Without intervention, vaccination against COVID-19 alone could lead to continued dissemination and the generation of new variants [5], necessitating the continuous use of booster doses. In addition to continuing to develop more effective vaccinations, new integrated strategies must be established. Accordingly, the suggested integrative strategy should include:

- a. Applying smart-lockdown to the affected areas: Quarantine duration times (whether they are long quarantines, double quarantines, smart quarantines, or combined quarantines) should be carefully considered because they have the potential to shift the epidemiological curve over time and generate a spike with a delay time when using Systems Dynamics Modeling (SDM) [6].
- b. Adopting preventive measures: Preventive measures such

as hand hygiene, alcohol gel use, cough etiquette, cleaning surfaces,

wearing masks in crowded areas, avoiding agglomerations, and social distancing, according to the World Health Organization, have a significant impact on lowering the epidemiological curve of the number of covid-19 cases [7].

c. Exploring the potential roles of medicinal plants: Several studies have found that medicinal herbs including *Nigella sativa*, *Vernonia amygdalina*, *Azadirachta indica*, and *Eurycoma longifolia* can help prevent against and speed recovery from Covid-19 disease. These plants have been shown to be effective as antiviral, anti-inflammatory, and immunomodulatory agents, and their consumption in affected regions should be encouraged [8].

d. Resolving the pandemic's socio-psychological effects in society: Many socio-psychological factors, including tranquility, adequate nutrition, intermittent fasting or calorie restriction, vitamin D deficiency, sleep pattern, exercise, and other psychodynamic features, have been shown to have a critical influence on the immune system and human health [9].

e. Supporting innovative contributions to anti-COVID-19 scientific research: it is recommended for pharmaceutical companies to collaborate in producing highly effective drugs and vaccines that curb the spread and development of the virus. Moreover, research centers across the globe should exert concerted efforts to innovate new effective antiviral drugs.

CONCLUSION

COVID-19's battle is far from done. As a result, it's critical that we plan for the future COVID-19 outbreaks. The complete lockdown and blind vaccination are intended to flatten the infection curve rather than completely eliminate the virus, as the virus continues to generate new variants at a rapid rate. We should refine our strategies and an innovated strategy, or an integrated model is desperately needed considering the five points raised in this brief commentary.

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