

Compliant strategies to contain coronaviruses amidst the inconveniency of social distancing

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Abstract

Social distance is the most promising technique for containing respiratory disorders such as coronaviruses. However, social separation is impractical in some situations where physical proximity is unavoidable. This research proposes alternative and complementary preventive and suppressive social distancing measures. This study explored the literature, produced critical ideas, and synthesized personal insights to develop realistic respiratory syndrome containment measures. Client-initiated congestion is common in enterprises and institutions that supply critical goods and services, according to experience. When overcrowding is unavoidable, containment methods such as using face masks, practicing proper cleanliness, improving the health of living and working environments, expanding access to critical supplies and services, and boosting social wellness must be implemented. Additionally, using (locally available) antiseptics, avoiding risky behaviors such as aggression, loneliness, smoking, drug abuse, and excessive alcohol consumption, eating greens, getting enough rest, receiving psychological treatment, and forming social ties could all help to reduce the negative effects of respiratory syndromes. Snipping hot liquids, preferably with honey, providing special attention to the elderly and individuals with comorbid diseases, seeing on-time healthcare workers and following their advise, and decreasing stress-inducing lifestyle factors all help to regulate respiratory syndromes. To control the transmission of contagions that cause respiratory syndromes, cost-effective and simple-to-implement measures should be used. Ignoring impoverished and marginalized communities in pandemic cases allows contagions to flourish unchecked, increasing the recurrence and circulation of pathologically important respiratory disorders.

Introduction

Respiratory syndromes like the Spanish flu and various lineages of coronaviruses that we have encountered recently have created unprecedented challenges for the global population and unparalleled challenges for the global healthcare system.¹ Especially following the devastating impact of the Spanish flu and severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), millions of people across the world have lost their lives. As the name implies, contagions that cause respiratory syndromes infect the respiratory tracts of patients. People with upper respiratory tract infections can transmit contagions to healthy people that are in close contact through sneezing or coughing infectious droplets and aerosols, especially when their nose and mouth remain uncovered.^{2,3} Moreover, contagions that can infect the respiratory tract can be spread while breathing, talking, and through respiratory secretions like mucus and saliva.⁴ Although potent vaccination has been made possible against coronaviruses,⁵ no effective treatment methods have been invented to treat coronavirus disease 2019 (COVID-19);⁶ consequently, the virus keeps circulating.⁷ Still, the most reliable containment strategy is behavioral change.⁸ Behavioral change among others, practically refers to social distancing or social isolation. Social distancing is among the widely used mitigating strategies that halt the spread of coronaviruses. According to the U.S. Centers for Disease Control and Prevention,⁹ close contact is defined as being within an approximately 2-meter distance among individuals for a reasonably long period and/or being exposed to the infectious secretions of coronavirus patients. In some guidelines, physical distancing is, however, dragged down to 1.5 meters.¹⁰ However, coronavirus carriers may not be identified, for example, in the case of asymptomatic individuals, which crumbles the containment practices.

Close physical contact is inevitable under some circumstances and cultural settings, especially in developing countries. For example, when the frontier of physical space is limited, as in the case of companies producing and delivering essential products and services, refugee camps, overcrowded urban settings like shantytowns, congested marketing places, retail outlets, and prisons, social isolation is unbearable. Likewise, in elderly care homes, among homeless individuals, on public transport, at airports, when several individuals are sharing a common living or working room, and in multi-generational homes¹¹⁻¹³ most likely, it is dreadful to bear the guidelines of social dis-

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tancing. Moreover, people with disabilities and mental health problems likely face difficulties practicing social distancing.¹³ Healthcare workers who spend a significant part of their time with coronavirus patients or carriers would not have a chance to maintain the recommended physical distance. Children are less susceptible to coronaviruses compared to adults,¹⁴ however, they can serve as carriers of the contagion. During the coronavirus pandemic, parents and daycare workers were unable to keep their children at a safe distance.

Working from home through virtual platforms, distance learning, and online shopping is less practical in the less developed world where internet service is weak and unreliable,^{15,16} which then forces most people to communicate in person. Large proportions of the residents of the less developed world use communal bathrooms

and water taps; both lifestyles make them contact each other frequently. A significant proportion of the inhabitants in less developed nations earn their livings as street vendors and rely on a daily wage or work in the informal employment sector,¹⁷ all of which make them come into physical contact daily. People most likely do not abstain from sex where physical proximity is indispensable, perhaps the sex industry has subsisted on prostitution even during the worldwide lockdown. The incidence of sexual harassment has escalated across the globe following the coronavirus-induced lockdown.¹⁸ It might also be possible that people disproportionately capitalize on sex during the lockdown because the landscape of physical entertainment is virtually limited to the home. Therefore, when social distancing is impractical, alternatives and/or complementary preventive or suppressive strategies should have to be devised. This study reports various strategies that can be adopted to contain respiratory syndromes when social isolation is impossible.

Materials and Methods

The study used a mixed approach to compile the report. Accordingly, it consulted literature, elicited critical thoughts, and synthesized personal insights and experiences. A literature search was made using the general search engine of Google and the keywords coronavirus and prevention and suppression methods. Based on this information, the study proposed prevention and suppression strategies against coronaviruses in such a way that they especially addressed the context of the less developed world. It also highlighted plausible medication options.

Results and Discussions

The result and discussion section mainly deals with plausible preventive and suppressive strategies against coronaviruses and COVID-19.

Prevention and suppression of contagions

Much has been learned about how to prevent and contain emerging contagions of respiratory syndromes like coronaviruses. Indeed, much has been left to understand about the etiology of highly infectious contagions and the driving factors behind their outbreak and fatality. Expansion and refinement of prevention, suppression, and treatment methods could save lives and resources and enhance and elaborate the

efficacy of mitigation strategies. The central dogmas for major areas of intervention to mitigate the adverse impact of respiratory syndromes like coronaviruses are presented in Figure 1 according to their decreasing order of importance but increasing level of complexity. Regardless of this, all three strategies are intended to achieve a similar goal. Although they may not represent an exhaustive list, core prevention, suppression, and treatment methods are summarized in Figure 2. The lists show that the types of interventions decrease as we move from prevention to suppression and then treatment. It is worthwhile to opt for long-lasting and affordable interventions like prevention and suppression to enhance the efficacy of containment strategies. However, the three main containment strategies are complementary to each other and interrelated (Figure 3). The adoption of the proposed containment methods, however, needs to be context-dependent.

Prevention strategies

When social distancing is impractical, wearing face masks and other personal pro-

TECTIVE equipment, frequent hand washing, disinfecting with antiseptics,¹⁰ and practicing proper hygiene¹⁹ have been recommended to reduce the spread of the coronavirus. However, in less developed countries, and at least in some areas of these nations, it is impractical to abide by the very basic preventive guidelines because the communities have limited access to even basic provisions such as water (especially in the case of dryland regions) and antiseptics.²⁰ Moreover, there is a tradition of communal living and the sharing of limited resources, and overcrowding is frequent in service-delivery centers and public spaces. Under these circumstances, there is a sense of urgency to devise alternative and complementary preventive strategies for social distancing. Otherwise, it takes a long time to eradicate respiratory syndromes once they have a foothold in the community. The following plausible alternative and complementary preventive strategies have been proposed to be implemented in line with the local context. The suggested strategies are grouped into clusters based on their practical application.



Figure 1. The linkage among the three core containment strategies of respiratory syndromes.

Prevention	Suppression	Treatment
<ul style="list-style-type: none"> • Lockdown • Contact tracing • Social distancing • Behavioral change • Vaccination • Awareness creation • Dealing with conspiracies and pseudoscience • Recruiting Artificial Intelligence to care for patients • Thinking ahead about potential pandemics • Enhancing reporting capacities • Virtual communication • Networking 	<ul style="list-style-type: none"> • Herbal medicines • Hot drinks and snips • Elevating room temperature • Fumigating using traditional herbs • Avoiding fears and stigmatization • Hang around for physical exercise • Psychological treatment • Prayer, swearing, and courage 	<ul style="list-style-type: none"> • Treating comorbidities • Discovery of drugs • Researching and disseminating findings • Validating traditional medicines • Enhancing the efficacy of drugs

Figure 2. Prevention, suppression, and treatment methods of coronaviruses and sibling respiratory syndromes.

Personal protective equipment (PPE) and self-hygiene

The strategies concerning the personal protective equipment (PPE) and self-hygiene are the following: i) enforcing the consistent use of readily accessible, durable, and reusable protective coverings such as face masks and gloves; ii) the use of natural soapberry plants with antimicrobial/antiseptic properties like *Phytolacca dodecandra* and wood ash for cleaning clothes and handwashing; iii) avoiding garbage dumps — an excellent medium for the proliferation of pathogens.

Enhancing the condition of residential units and working quarters

The strategies concerning living spaces are: i) artificially boosting the temperature of the living and working rooms, for example, using burning charcoal to create an inauspicious environment for the coronaviruses, especially during cold seasons. The anecdotal report shows that a family member living in Addis Ababa and infected by coronavirus was fumigated with Kebericho (*Echinops kebericho* Mesfin) to the point of deadly sweating, which has made the coronavirus scramble. Moreover, in Ethiopia, there is a long-lasting tradition of smoking garbage in open spaces around homesteads on November 21st, *i.e.*, the day dedicated to St. Michael by the Ethiopian Orthodox Church, perhaps to symbolize the taking away of the Spanish flu that had severely affected Ethiopia in November 1918; ii) allowing the free circulation of fresh air; iii) constructing low-cost shelters for the homeless; iv) freeing some of the prisoners who committed pardonable crimes to reduce overcrowding in the prisons; v) the use of green classrooms, such as green areas and wide canopy trees, reduces overcrowding in conventional classrooms; vi) the adoption of multiple shifts, perhaps combined with virtual classes, reduces the number of students attending a session.

Enriching supply units, marketplaces, and transportation services

As far as infrastructure are concerned, the suggestions are: i) sustained provision of essential services and supplies; ii) restricting nonessential traffic among overcrowded settings and areas that have been infected by the coronaviruses; iii) shifting or splitting bus or taxi stations into wider and less congested, and in multiple places; iv) splitting big open-air markets into multiple locations to provide close access to the point within walking distance and to reduce overcrowding.

Moreover, cautions need to be made when disease outbreaks with the potential

of being pandemics are expected and to become safe from avoidable infections, as presented in Table 1.

Along with hygiene, healthcare management, and public awareness initiatives, efforts need to be made to enhance the well-being of the community. Enhancing wellness (Table 2) is vital to contain the spread of contagions and suppress their adverse impact.

In some instances, contagions could escape prevention efforts. When prevention methods do not contain contagions, they will have the chance to infect the community. Once infested, if the case is mild to moderate, suppression could work; if the case is severe, it likely requires treatment.

Suppressive strategies

If any kind of strict prevention strategy could have been implemented, they may not have completely avoided coronavirus infection, as the battle is against the invisible and highly infectious orphan virus. Infection by the coronavirus broadly produces asymptomatic, mild, moderate, and critically ill cases. In the latter three cases, effective treatment is required in line with their level of fatality. In this report, suggestions are made to treat mild to moderate cases of coronavirus infection: i) sipping hot drinks such as tea and coffee, preferably with honey, could suppress the multiplication of coronaviruses; ii) under normal or mild conditions, adopting the commonly used guidelines or using home-brewed cures and spicy foods that have been at least traditionally proven effective to treat the common cold and influenza; iii) feeding leafy green vegetables and citrus fruits may boost the immune response;²³ iv) at any cost, avoiding dehydration. Moistening the nasal cavi-

ty boosts the body's defense mechanisms; v) regular sex may improve health conditions by activating the innate immune system;²⁴ however, sex (especially unprotected) could expose them to sexually transmitted diseases; vi) avoid anxiety and frustration once you contract the coronavirus while taking all possible care; vii) confidence can be built using psychological treatments that have been commonly practiced by the communities of the less developed world, such as prayer, and swearing;²⁵ viii) using and working with herbal medicines with robust antiviral activity. For example, Bergner (1996)²⁶ recommended the use of garlic in the form of a nose drop to suppress the common cold. Moreover, Desta *et al.*²⁷ reviewed an extensive list of studies conducted on edible medicinal plants as potential remedies to treat coronaviruses; ix) limited and healthier intake of alcoholic drinks may suppress the negative impact of coronaviruses.²⁸ For example, in Ethiopia, a local drink made up of fractional distillation called katikela had high market demand during the coronavirus-induced lockdown period.

Trained phenotype

Even under worldwide coronavirus pandemics, immunity has been developed by a significantly large proportion of the world population through natural infection,²⁹ which can be evidenced by the low fatality rate of SARS-CoV-2 cases in Africa surviving with an underdeveloped healthcare system. This might be intriguing; however, the reality is that Africans have experienced repeated exposure to circulating sibling viruses causing various types of respiratory syndromes; hence, they have developed a robustly trained phenotype with a broad

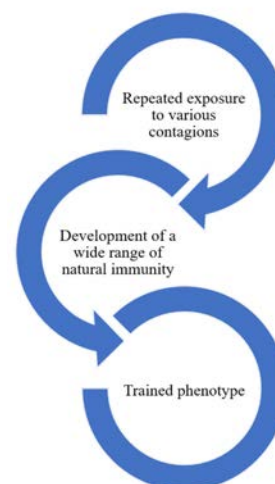


Figure 3. The cause and effect of repeated exposure to natural infections.

spectrum of fighting capacity. Moreover, a large proportion of the African population lives scattered in rural areas, which reduces the spread of contagions. Africans are also known to possess high genetic diversity³⁰ and live in ecologically highly diverse tropics. This diversity creates an ideal environment for exposure to various contagions and enables them to develop high genetic polymorphism and diverse environmental conditions that induce expansive immune responses. Repeated exposure to contagions makes the immune system develop robust immunity against various types of infections.^{31,32}

Treatments

Most conventional medicines are made from plants. Enhancing the consumption of medicinal herbs, vegetables, fruits, and

healthy diets could, to some extent, help treat non-critical cases. If there is no effective treatment for respiratory syndrome, the most plausible alternative is treating comorbidities and tirelessly working through international connections and the prevailing state-of-the-art technology and expertise for the discovery of at least partially effective drugs.

Conclusions

Unless locally tailored alternative and complementary preventive strategies are developed and enforced as quickly as possible when an epidemic emerges, the international effort that has been made to contain contagions could fall apart. Interventions that have been developed to combat the coronavirus pandemic need to be extensive-

ly documented and researched for their efficacy. Traditional knowledge and wisdom need to be verified and form part of containment strategies. Overlooking marginalized communities and disadvantaged groups amidst epidemiological crises could enable the contagion to circulate unchecked, which in turn serves as a recipe for the resurgence of the devastating contagion.

Table 1. Suggested preventive strategies for respiratory syndromes.

Category	Measures need to be taken
Hygienic measures	Avoid sharing personal belongings Cover your mouth and nose while coughing or sneezing Avoid touching the nose, mouth, hair, or eye with grubby hands Safely dispose of and avoid direct contact with discarded materials Wash hands frequently or use a sanitizer Handle and prepare food safely Clean and disinfect commonly used surfaces Cough and sneeze into a tissue or a sleeve Make the equipment and facilities of the healthcare system tidy Safe disposal of body fluids and wastes Cautiously approach pets and other domestic and wild animals
Health management	Stay home when feeling ill Enhance wellness Consistently and correctly wear a high-quality mask Keep a physical distance and reduce the incidence of close contact Contact tracing ²¹ Health risk assessment Developing healthy eating and drinking habits Immunize on time ²² Practice safe sex
Publicizing	Earnestly follow news developments Mass education and training Devising conspiracies and pseudo-science mitigating strategies

Table 2. Enhancing wellness to contain the spread of respiratory syndromes.

Category	Itemized practices
Equity	Equitable access to (scarce) resources Providing support for the elderly, low-earning people, and people with comorbidities Reducing the normal working time but enhancing skillset and efficiency Treating individuals with pre-existing health problems
Enforcement	Enforcing a rapid and decisive reaction against coronaviruses Promoting solidarity among communities Promoting mental well-being and having adequate rest Engaging in regular physical exercise in safe places Regular screening for temperature and general health status Invent robot-assisted care for severely affected patients Abiding by the advice of healthcare staff Refrain from the politicization of coronaviruses

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