



Review Article

Prevalence of COVID-19 Pandemic Threat; Implications of Social Quarantine as Preventive Public Health Intervention

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ABSTRACT

The emergence of coronavirus back in 2019 posed an epidemic threat to global public health security even after the execution of precautionary and control measures. The infectious disease was first identified in Wuhan, China and spread rapidly to multiple countries. Gradually, it caused casualties of people with a large number of coronavirus cases. Different countries implemented several interventions to mitigate the human-to-human transmission of this disease including travel restrictions, setting up isolation centers, lockdowns, and social quarantine. A systematic search was implemented through five electronic databases (PubMed, WHO, NIH, Scopus and Google Scholar). Research studies that were published until 30th May 2021 were included in this study, and eligibility criteria were selected for this review. The study shed light on the critical aspects of the implications of social quarantine preventive intervention to avoid the spread of COVID-19. The lessons learned from the pandemic can help the future preparedness and response plan to combat the progression of this disease. Yet limited studies have been conducted about the socio-economic impact of these social-distancing measures for most vulnerable populations. In this study, various research studies that have reported the positive and negative impact of physical distancing on the population were evaluated. In this situation, the Pakistani government must combat the coronavirus disease and take steps to improve the economic condition of the country. Special attention must be paid to the most disadvantaged and vulnerable populations such as the disabled, older population, homeless and poor populations to lessen the risks of coronavirus disease. Policymakers must ensure transparency in communication and provide evidence-based interventions to tackle the worse situation. The countries must coordinate their efforts to develop antivirals and vaccines for the treatment of infectious fatal diseases. Government must support the community through access to the use of technology, and home care to older residents, deliver health counseling services, and deliver home-based learning. All countries must use print, electronic and social media wisely and they must be coordinated, and provide education and social awareness among the citizenry regarding how to avoid being infected.

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INTRODUCTION

The cascading outbreak of coronavirus (COVID-19) had led to a life-threatening epidemic that caused a serious threat to public health. The coronavirus outbreak emerged from Wuhan, city of Hubei province in China since December 2019 (Wilder-Smith and Freedman 2020; Zhou et al., 2020). Gradually, the virus spread to different regions of China and other countries as well. World Health Organization (WHO) declared the coronavirus outbreak a pandemic and issued public health emergency to countries that were at risk of getting COVID-19 (Kandel et al., 2020; Rodriguez-Morales et al., 2020).

On 6th March 2020, the epidemic was exported to more than 113 countries and the number of confirmed cases exceeded 98,182 and the number of deaths reached 3380 outside China (Pung et al., 2020). Subsequent reports found that COVID-19 expanded rapidly to North America, Europe regions, Middle East and Asia countries through community transmission (Bedford et al., 2020). According to the WHO situation report, the number of cases reached 823,626 that were found confirmed positive cases and 40,598 deaths due to coronavirus all over the globe (World Health Organization, 2020).

Coronavirus reportedly infected the population with moderate to severe respiratory illnesses among infected patients such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) that caused severe fatalities earlier (Kandel et al., 2020; Rodriguez-Morales et al., 2020). Infected patients showed clinical symptoms of nasal congestion, fever, dry coughing, runny nose and diarrhea in 2-8% of patients (Wu and McGoogan, 2020). A few patients had difficulty in breathing and became seriously ill after an incubation period of 14 days. In severe cases, it can lead to

pneumonia, organ failure, respiratory paralysis and death (Zhou et al., 2020). Patients with a medical history of cancer, respiratory disorder, liver infection and cardiovascular illness were more vulnerable to (COVID-19) infection. Older people and young patients were at greater risk to confront serious illnesses from coronavirus disease. In China, the government paid significant attention to public health and traditional prevention measures to prevent the spread of this disease and imposed lockdowns through the confinement of the community, isolation and quarantine (Wilder-Smith and Freedman, 2020).

They took strict action to stop social interaction and avoid general public gatherings to isolate the patient with positive COVID-19 from others (Lewnard and Lo, 2020). China immediately built new hospitals and imported new medical equipment and protective gear for health care purposes. The common public was home quarantined and socially disconnected through the cancellation of all public gatherings. In this way, strong precautionary measures helped to constrain the community of 60 million Chinese people and reduce the devastating effects of COVID-19 (Wu and McGoogan, 2020).

Pakistan on the edge of potential disaster with COVID-19

Pakistan's neighboring countries i.e. China and Iran became the epicenter for the coronavirus epidemic that had a higher number of fatalities attributed to Covid-19. On 26 February 2020, Pakistan Federal Minister announced the first two cases in Islamabad and Karachi. Till 12 March 2020, the number of confirmed cases was 471 (4.25%), who were found to be positive (Saqlain et al., 2020). On 18th March 2020, the first death was reported due to COVID-19. Recently, on

2nd April 2020, the number of confirmed cases rises to 3505 and the number of casualties reaching 51 as given in Table 1 (Geo News, 2020). National Health Institute provided complete information regarding suspected cases, the number of confirmed cases along with the fatality rate in Pakistan given in Table I. Pakistan's government implemented various strategies to cope with the zoonotic illness including screening every passenger with a travel history of the last few months directly or indirectly to China or any other affected countries such as Iran, Europe region, Thailand, and Japan. They started close surveillance and active screening of all the pilgrims traveling from Iran and temporarily closed Pak-Iran and the country's western borders (Saqlain et al., 2020).

The research study found that effective drug therapy has also been used in China including chloroquine phosphate, interferon alpha-2b and anti-viral therapy lopinavir (500mg twice daily) for the prevention of lungs infection and shortness of breath (Gao et al., 2020). WHO declared that the coronavirus disease is easily transmitted to others through saliva droplets and discharge of the nose from the infected person during cough and sneezing (Rodriguez-Morales et al., 2020; Wilder-Smith and Freedman, 2020). Several reports suggested that ongoing trials have been performed to identify the potential vaccine and treatment for COVID-19.

However, they were unable to develop any approved vaccine for the prevention of deadly viral infection at this point. In the absence of antivirals and approved vaccines, the solution was only possible through intense care and traditional public health measures to curb the epidemic (Wilder-Smith and Freedman, 2020). Based on risk assessment, Pakistan prepared its population to tackle the pandemic and increased its response actions against COVID-19 (Bedford et al., 2020). The

Pakistani National Institute of Health (NIH) played a vital role in the mitigation and containment of the COVID-19 epidemic through public awareness campaigns (Saqlain et al., 2020). NIH also took unprecedented measures through the provision of protective medical equipment, the use of facemasks and sanitizers and personal hygiene awareness among the general public.

The Pakistani government provided support to all infected patients and develops provincial surveillance units to control this epidemic by applying local restrictions. They converted business setups and hotels into quarantine centers to assist the masses of the population in the fight against coronavirus. The army troops were also sent across the country to help the provincial government in controlling the spread of the virus (Saqlain et al., 2020). In the condition of social distancing with major restrictions, the role of media was important to provide awareness regarding diagnosis, transmission, and preventive measures and avoid false information to spread. It required the close collaboration of law enforcement and other authorities to ensure compliance and provided legal punishment to the violators of the lockdown (Taeihagh, & Tan, 2023)

Amid the COVID-19 through Social Quarantine

Given the major fatalities worldwide, the government of Pakistan also imposed lockdowns all over the provinces and used quarantine as an emergency public health intervention (Taeihagh, & Tan, 2023). The studies represented the effectiveness of social quarantine in the form of social containment, isolation and physical or social distancing helped the masses of the population all over the countries to interfere with the human-to-human transmission of the virus (Bedford et al., 2020). According to research findings,

social quarantine was considered the oldest technique of controlling outbreaks which directly reduces the social interaction of persons in the broader community (Wilder-Smith and Freedman, 2020). Quarantine refers to the restriction of a person who has been exposed to an infected disease to further reduce the transmission of the virus. Effective isolation rooms have been developed in hospitals to protect the non-infected person from ill patients. All the patients quarantined in designated centers have been monitored for the occurrence of COVID-19 symptoms (Saqlain et al., 2020).

Effective isolation and quarantine include the closure of educational institutes, workplaces, and transit systems and cancellation of public gatherings and a slowdown of the transmission (Lewnard and Lo, 2020). All the countries focused on various responses to public health including social containment and isolation of infected patients (Wu and McGoogan, 2020b). Some effective guidelines regarding quarantine are also provided by World Health Organization (WHO) for the diagnosis, prevention and treatment of infection caused by COVID-19.

Most studies suggested that the most effective strategy to combat the disease is social distancing and adopting quarantine measures to reduce the social contact of the common public. For this purpose, Pakistan's government takes immediate action for the closing of workplaces, schools/universities, malls, and common gatherings. Research findings of various authors revealed that the potential effects of social distancing have been successfully preventing the community spread of the pandemic and interrupting social interaction (Taeihagh, & Tan, 2023). In the United Kingdom, the study revealed that social isolation policy measures reduce the number of fatalities between 78 to 99% from coronavirus (Long, 2020).

Is Social Distancing a helpful intervention or disastrous?

Social distancing as public health imperative becomes a major challenge that rapidly fuelled the concerns about global economic damages that they would wreck (Long, 2020). All the drastic coronavirus preventive measures avoid the further spread of contagious disease; on the other hand, it directly affects the socioeconomic condition of Pakistan. If the drastic post covid situation prevails, then the world economy would crash due to the coronavirus (Lewnard and Lo, 2020). This epidemic threatens the health condition of more than 571,678 confirmed cases and 26,494 deaths all over the world. The study investigates the influence of physical and social distancing on the progression of the COVID epidemic. Pakistan is the fifth most densely populous country that has been badly affected by the coronavirus. They lacked expensive diagnostic test kits, modern isolation centers with protective equipment and effective medical drugs which contribute directly to the complexity of the situation.

They also deal with poor health literacy, a fragile medical care system and a lack of required technology-equipped hospitals (Saqlain et al., 2020). Due to increasing demand, facemasks and sanitizers become scarce in public markets. Pakistani government faces severe challenges to provide ventilator support and intensive care to infected patients, as their number is increasing rapidly. They have to bear the additional cost of intensive care units and isolation facilities with very low health budgets. Although the scientific basis of social distancing might be effective and robust, however, the implementation of social quarantine results in several repercussions (Rodriguez-Morales et al., 2020).

In Pakistan, coronavirus became a serious concern for public health that shut down the workplace or any business activity. The closure of the workplace and physical distancing intervention strike a risk of unemployment and job loss that affects the income of daily wagers in a developing country, Pakistan (Lewnard and Lo, 2020). This situation shatters the livelihoods of the the non-vulnerable population who may require hospitalization in near future. It put a great burden on the government health care system. Social quarantine and ongoing isolation led to considerable societal disruption, anxiety, depression, and conflicts in the older population (Rubin and Wessely, 2020).

Staying home and avoiding social contact with family result in depriving the multiple benefits that come from co-presence and social interaction. The residence of people in close confinement strained many relationships and reduced self-worth among individuals. However, nuclear family households continue

to enjoy social interaction with family (Long, 2020). Working from home was difficult for family members as reflected their job priority rather than caring for the children, whose school has been closed. For the younger population, COVID brings several challenges in educational learning and the closure of schools/universities harmed their development educational institutes started remote learning to facilitate students in this period (Taeihagh, & Tan, 2023).

The societal effects of the quarantine and social distancing includes restricting the freedom of humanity and putting relationships and social interactions at stake (Rubin and Wessely, 2020). In short, physical distancing negatively impact vulnerable groups in society, through job loss, remote learning, mental health effects, reduced income, and the socioeconomic gap between affluents and poor community (Taeihagh, & Tan, 2023).

Table I: Daily Situation Report (COVID-19) of Pakistan

Provinces	Suspected cases at Hospitals		Hospital Update			Quarantine
	New (last 24 hours)	Cumulative	Still admitted	Discharged/recovered	Expired	Home / Facility
Punjab	1708	1997	15	03	15	44
Sindh	881	5086	384	06	15	444
KPK	405	6926	387	58	16	289
Baluchistan	290	1814	84	19	02	165
AJK	115	2049	125	17	01	26
Isb	82	249	09	00	01	00
GB	75	894	12	04	01	169
Total	3505	19015	1016	107	51	1137

*Source: National Institute of Health (NIH), Islamabad (<http://covid.gov.pk/stats/pakistan>)

CONCLUSION

In this situation, the Pakistani government must combat the coronavirus disease and take steps to improve the economic condition of the country. Special attention must be paid to the most disadvantaged and vulnerable populations such as the disabled, older population, homeless and poor populations to lessen the risks of coronavirus disease. Policymakers must ensure transparency in communication and provide evidence-based interventions to tackle the worse situation. In this hour of need, countries must coordinate their efforts to develop antivirals and vaccines for the treatment of infectious fatal diseases.

Government must support the community through access to the use of technology, and home care for older residents, deliver health counseling services and deliver home-based learning. All countries must use print, electronic and social media wisely and they must be coordinated, and provide education and social awareness among the citizenry regarding how to avoid being infected. In this way, we find a way against this contagious disease, coronavirus. This study has a few limitations, we have missed out on the empirical and systematic evidence of the search process, that future studies might conceptualize and synthesize. Our findings might help policymakers and practitioners address human needs and the welfare of the population.

DECLARATIONS

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