

Public Perception on Quarantine During the COVID-19 Outbreak in Bangladesh: A Community Survey-Based Study

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ABSTRACT

Backgrounds: The usage of quarantine emphasizes the complex interaction between the human rights of the citizen and the collective rights of the community. Therefore, the public's views and expectations about quarantine to prevent the transmission of COVID-19 were explored in this report.

Results: The findings of this study show widespread public support for the use of quarantine and legal sanctions for those who do not comply with the regulations. However, this assistance is conditional on applying regulatory provisions to prevent improper usage and the offering of psychosocial support to those impacted.

Conclusions: When quarantine cannot be implemented, public health policymakers and government leaders can introduce a robust service scheme. They can implement a comprehensive infrastructure of psychosocial care to protect, instruct, and educate frontline public health staff. The public can also be invited to participate in an open discussion about the ethical efficacy of restrictive principles during this COVID-19 pandemic.

Keywords: COVID-19, public perception, quarantine

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INTRODUCTION

Quarantine is one of the oldest methods of controlling the outbreak of any infectious diseases, especially those for which vaccines or other therapeutics are not available. Different countries have faced several quarantine events in the 21st century to prevent the transmission of various infectious diseases, including the mass quarantine event for the most recent severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) outbreak in most of the countries of the world from 2020 [1,2]. This restrictive measure was successful in terminating the outbreaks and reducing the death rate of a range of infectious diseases, including the dated Spanish flu pandemic (1918) and recent SARS-CoV (2001) outbreak in the past [3,4]. However, although the isolation, which is the restrictive measure of an asymptomatic individual, is more palpable, quarantining

the individuals at high risks of being infected is more controversial regarding ethics and legality [5-7]. A high degree of compliance to the response of quarantine enforcement during different viral disease outbreaks was reported among the people of high-income countries, i.e., the USA and Canada [8,9]. Nevertheless, the public perception varies from one ethnic group and even one nation to another as evidenced by the response of people of South Korea during the middle east respiratory syndrome coronavirus (MERS-CoV) outbreak in 2015 [10,11]. People from low and middle-income countries like Bangladesh, a country with a dense population of more than 164 million people, might have different perspectives on quarantine enforcement to control the spread of coronavirus disease 2019 (COVID-19).

Bangladesh recorded the first death from COVID-19 on March 18, 2020, after

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confirming the first infected case on March 08, 2020 [12,13]. However, people's maintenance depends on different factors, i.e., knowledge, financial stability, willingness, etc. For example, maintaining the quarantine is akin to economic suicide for people like farmers, rickshaw pullers, tea stallers, and slum dwellers who need to struggle for bread and butter every day. Again, the lack of knowledge of people about quarantine imposes a further challenge to maintain it appropriately, as evident by different families who were found to utilize the quarantine opportunity as family vacation [14,15]. On the contrary, financially stable people and have proper knowledge are more likely to maintain the quarantine order. Thus, the perception of quarantine varies from one group of people to another. Consequently, because of both potential adverse effects and the necessity of quarantine, it is essential to comprehend how it is viewed among different groups of people to recommend further necessary steps.

In this study, observation is tried to explore the public perception of the use of quarantine to prevent the spread of COVID-19. The scientific findings of this study will help to understand the necessity of quarantine use following the further steps, which might be required for its proper maintenance.

MATERIALS AND METHODS

Participants and Setting

The study was conducted in multiple regions of different districts in Bangladesh. Bangladesh is a densely populated country of South Asia with more than 164 million people and a population density of 1,115.62 people per square kilometer. The surface area in Bangladesh is currently at 147,570 square kilometers (or 56,977 square miles). The country has 64 districts, and among these, the capital city Dhaka is the largest and most populated city with almost 14.4 million people and a density of 19,447 people per square kilometer [1].

All the participants provided consent before the survey. Age or sex stratification was not applied in this study. The approval of research ethics was obtained from the institutional ethical committee, Shahjalal University of Science and Technology, Sylhet, Bangladesh.

Survey Utensil

The survey questionnaire was taken and adapted from a prior study carried out by Shawn et al. in 2005 after the SARS-CoV outbreak in Canada. The questionnaire contained 14 items designed precisely to measure the public perceptions of the enforced quarantine to prevent COVID-19 in Bangladesh. The items were selected to cover various topics, including the legitimacy of quarantine, the supposed efficacy of the restrictive policy, and the assistance offered to those affected by quarantine compliance. The participants were asked to indicate their degree of agreement or disagreement with each questionnaire item. The response format was a 5-point Like-art style template, with options

like (1) strongly agree, (2) somewhat agree, (3) neutral, (4) somewhat disagree, and (5) strongly disagree, and so on.

At first, the participants were asked to provide demographic information such as age, location, marital status, residence, ethnicity, education, occupation, and religion. Then, all participants were informed that the inquiry would be used for academic/research purposes and, after that, introduced with the standard definition of quarantine

“Quarantine is the prohibition of normal movement of people to avoid the transmission of an infectious disease.”

and infectious disease

“Infectious diseases are the diseases which transmit from one person to another or animal to person through airborne bacteria, viruses or any bodily fluid of infected person.”

Data Collection and Analysis

A total of 50 interviewers collected data from different regions of Bangladesh between January 04, 2021, and February 18, 2021, with the aid of project supervisors. The data were collected using an online survey strategy by providing the respondent with the link to a formulated Google form containing the questionnaire. Few data were also collected using the online computer-assisted telephone interviewing (CATI) strategy from the interviewers' friends, neighbors, and relatives.

Inclusion criteria included a minimum of 18 years or more of the age of the participants and eligibility to provide consent for the survey. All the participants confirmed their eligibility (18 years of age or more) to consent before participating in the survey.

Ethical Statement

The study methodology was approved by SUST internal ethical committee (Reference ID: IEC-101(1)/003). For participating in this study, no monetary compensation was offered.

RESULTS

The interviewers invited 1,758 adults, both male, and female, to participate in the interview, and 1,526 responded. Questionnaires from 48 participants were omitted because they were incomplete. Therefore, the final review of the study included data from 1,748 adult male and female participants, with an overall response rate of 86.8%. The personal and demographic information of the participants is shown in (Table 1 and Table 2). About half of the participants (46.9%) were between 18 and 25, with just 0.59% being over 60. The sample pool included people from all lifestyles and came from all eight divisions of Bangladesh.

Table 1. Personal characteristics and quarantine status

	Gender		Total
	Female	Male	
Personal Characteristics			
Age Group			
18-25	235	458	693
26-40	223	413	636
41-60	50	91	141
Above 60	0	8	8
Total	508	970	1,478
Location			
Dhaka	252	477	729
Chittagong	81	172	253
Rajshahi	29	68	97
Sylhet	59	78	137
Barisal	22	44	66
Khulna	18	50	68
Rangpur	24	45	69
Mymensingh	24	45	69
Total	508	970	1,478
Quarantine Status			
Is/Was anyone in your family home quarantined?			
No	370	733	1,103
Yes, myself but nobody else in my home	32	39	71
Yes, myself and someone else in my home	72	157	229
Yes, not myself but someone else in my home	34	41	75
Total	508	970	1,478

About 65% of the participants (67.7%) had completed high school or higher education, with 16.84% attending university. 41.6% were students, 20.8% were self-employed, and the remaining 37.6% were unemployed, homemakers, service holders, or involved in the business. Furthermore, 53% (52.97%) respondents were single (i.e., unmarried or divorced). In terms of religious affiliation, over 80% (82.68%) of participants were Muslims. Over 90% (93.84%) of participants were born Bangladeshi, and ~60% (59.20%) of the respondents were dwellers of urban areas.

The results of the 14 survey items (ranging from “strongly agree” to “strongly disagree”) are shown in Table 2. The majority of respondents said they “strongly agree” or “somewhat agree” to each item. According to the results, 88% of respondents believed that quarantine is an effective way to reduce the transmission of this outbreak and that the government should implement it. During outbreaks, authorities should be able to order people to be quarantined. Furthermore, 76% of respondents supported that the authority’s quarantine orders should be enforced at all costs.

Table 2. Sociodemographic characteristics of participants

Variables	Value (n=1,478)
Marital Status (%)	
Unmarried	50.47%
Married	47.02%
Divorced	2.51%
Residence (%)	
Rural	40.8%
Urban	59.2%
Ethnicity (%)	
By Born Bangladeshi	93.84%
Tribal	6.16%
Education (%)	
Uneducated	4.46%
Primary	8.79%
Secondary	19.01%
Higher Secondary	47.90%
University	16.85%
Others	2.99%
Occupation	
Unemployed	5.75%
Student	41.61%
Self-Employed	20.84%
Business	11.50%
Service Holder (Govt.)	5.95%
Service Holder (Private)	7.37%
Housewife	6.98%
Religion	
Islam	82.68%
Hindu	12.31%
Buddhist	3.32%
Christian	0.88%
Other	0.81%

In addition, the government can fund counselors and support groups to talk to anyone who is released from quarantine. According to the survey, 74% of respondents agreed that it is reasonable to take away some rights during an outbreak. Those who violate quarantine directives should face severe consequences such as fines or jail. 71% of respondents supported that the government should imprison them if they fail to obey quarantine orders. 82% of participants believed that going to quarantine would protect the community from becoming sick. More statistical findings from Table 3 revealed that 63% of participants agreed to use bracelets and home security cameras for people who disobey quarantine orders, 85% agreed to include a clarification of authority for quarantine, 83% agreed to pay nurses and counselors, 86% agreed to ensure food and shelter

Table 3. Public attitudes towards quarantine during the COVID-19 outbreak

	SA	SWA	N	SWD	SD
Government should have the power to order people into quarantine during outbreaks.	63%	25%	10%	2%	0%
Quarantine is a good way to stop the spread of COVID-19 outbreak.	63%	25%	10%	2%	0%
If someone is given a quarantine order by the authority, they should follow it no matter what else is going on in their life at work or home.	49%	27%	16%	6%	2%
If I go into quarantine, my family/friends/community will be protected from becoming sick.	58%	24%	13%	3%	1%
People who break quarantine orders on purpose should face legal penalties like a fine or jail.	46%	28%	17%	7%	2%
Government should be able to lock people up if they fail to obey quarantine orders.	43%	28%	16%	9%	4%
Government should use electronic bracelets and in-home surveillance cameras for people who disobey quarantine orders.	39%	24%	23%	9%	5%
The authority needs to explain to everyone why they should be allowed to use quarantine.	64%	21%	10%	4%	1%
Government should pay for nurses and counselors to help people who are in quarantine.	59%	24%	12%	4%	1%
Government should ensure that people have food and shelter while in quarantine, and pay for it with public money if need be.	70%	16%	8%	4%	1%
Government should pay for counselors and support groups so that people coming out of quarantine have someone to talk to about it.	46%	30%	18%	4%	2%
People in quarantine should get money from the government to pay for missed time at work.	48%	25%	21%	4%	2%
Government should ensure that there is no discrimination in the use of quarantine.	59%	22%	13%	5%	1%
It is reasonable for some rights to be taken away during an infectious disease outbreak.	48%	26%	17%	7%	2%

for people in quarantine, 73% accepted that citizens should get money from the government to compensate for lost work, and 81% responded that government should ensure that quarantine is not used discriminatorily.

It is observed that significantly different mean knowledge scores exist between age groups ($p < 0.01$). The age groups between 26 and 60 had considerably higher scores than those younger and those older than them. The difference in mean knowledge scores between people living in urban areas and rural areas is very little (25.78 ± 7.14 and 26.83 ± 7.11 , respectively). It is also observed that those with higher education levels scored less than those with lower (24.06 ± 6.21 and 30.73 ± 6.68 , respectively). It is also observed that people who are currently earning and homemakers, retired or unemployed scored higher than students (29.13 ± 7.02 , 27.57 ± 7.18 , and 22.59 ± 5.47 , respectively).

DISCUSSION

Quarantine is the separation and restriction of activities for ensuring safety during a pandemic [16]. This study has found that among all the participants, a significant number of participants have agreed that quarantine is a key method for combating the COVID-19. Among them, many participants acknowledged the implementation of sanctions on people who violate quarantine laws. According to the following statistical findings, 95% in Taiwan, 76% in the USA, and 89% in Singapore, quarantine is preferable to people [17]. These results are close to the findings of this survey, which showed that 88% of the participants believed quarantine is a good way to stop the spread of the COVID-19 outbreak. Furthermore, 82% accepted that quarantine will protect their family/friends/community from becoming sick.

According to the findings of this survey, 74% of respondents supported that people who violated quarantine laws should face legal penalties like fines or jail.

On a global scale, public health appears to be in a state of indecision concerning the application of quarantine and other human rights-related consequences of the outbreak. Some people think of quarantine as a sagacious health policy during epidemics [18], while others think of it as an unnecessary violation of human rights [19]. As a result, public health officials must rely on persuasion to include appropriate and explicit guidance about the intent of quarantine [20-22]. Nevertheless, quarantine plays a vital role in decreasing the transmission of contagious diseases during the COVID-19 epidemic. This survey has indicated that quarantine is a public health duty that describes both the restraint of human rights and the obligation of the public health policy within the framework of the COVID-19 outbreak.

During this survey, we faced some limitations. We only could survey eight divisions. But prospective surveys should be conducted in all 64 districts. In this survey, a major portion of the respondents was a young adult, and the number of aged participants was low. Therefore, senior participants should be provided the same priority as young participants in future research.

CONCLUSIONS

Authorities could not handle the outbreak of COVID-19 due to a lack of knowledge about this contagious disease. When a new viral disease evolves, its mode of transmission, incubation period, the causative agent remains obscured. Therefore, quarantine is the best option for protection by

prohibiting contact between infected people and non-infected people. The current results suggest broad public support for the use of quarantine to manage COVID-19 and severe penalties for irresponsible people who violate quarantine. Our findings also indicate that individuals who the outbreak has negatively impacted should have access to psychological supports. Infectious disease has become a threat because it creates a conflict between human rights for the common benefit of society and public health ethics. Authorities and public health policymakers should introduce a comprehensive and robust support system of services and protections, inform frontline public health personnel about restrictive values' ethical usefulness, and involve the public in an open discussion to generate broad public support for the mandatory quarantine and other restrictive steps.

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