

GLOBAL PANDEMIC COVID-19: AN OBSERVATION ON PANDEMIC RESPONSES IN BANGLADESH AND OTHER COUNTRIES

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ABSTRACT

The world has experienced unprecedented challenges due to the COVID-19 pandemic. The present study is designed to explore the strategies taken by the Bangladesh government and other countries to manage this pandemic. The study observed that several factors like government initiatives, soundness of medical centers, capacity, and preparedness, past experiences, economy, technological support, demographic structure, culture, social sentiment, attitude towards safety measures, and sensitivity to obey instructions, etc. are responsible for the successfully prevent and mitigate pandemic in Bangladesh and other countries. It was revealed that different countries responded COVID-19 pandemic differently. Bangladesh's government did not strictly follow draconian policy as most of the people need to work for livelihood. Several national programs were postponed to avoid mass gatherings. But during the lockdown, people enjoyed it as a public holiday. Again, people's attitude toward using safety measures was not satisfactory. There had an inadequacy of dedicated hospitals, tracing facilities, and PPE but telemedicine programs played a significant role. Based on analyzing the current status of health, the economy, and people's attitudes, it is recommended that the government of Bangladesh should be proactive in taking preventive measures for managing pandemics. Again, pandemic management capabilities such as health- facilities, dedicated doctors and staff, related testing facilities, people's knowledge of the pandemic, and incentives need to be increased.

Key words: Pandemic, Covid-19, strategic management, experience, Bangladesh.

Introduction

Biological disasters have the potentiality to harm living biota in the world and about 13% of disasters are associated with biological origin (Gunasekera, 2010, Guha Sapir *et al.*, 2014). From the beginning of 21st century people all over the world have been fighting against different infectious disasters/pandemics. These are Chikungunia, Cholera, MERS-CoV, SARS, Avian Influenza, Plague, Nipah virus, Influenza, Ebola, Smallpox, Zika virus, Dengue, etc. These viral infections are very much contagious and can easily spread from animal to human or human to human. In the year 2020, there is no nation found on the earth that is not experiencing the challenges of COVID-19. On January 7, 2020, the World Health Organization (WHO) named this virus the 2019 novel coronavirus (2019-nCoV) (Tan *et al.*, 2020). Subsequently, the WHO declared COVID-19 as a pandemic on 11 March 2020 (WHO, 2020). The large-scale pandemic crisis caused by COVID-19 has already had a significant impact on economic sectors, social behavior, cultural practices, population dynamics, politics and governance, and important public health. Throughout the world, people have experienced unprecedented challenges due to this global pandemic. Having limitations (lack of antiviral drug or agent) some countries become successful and some were unsuccessful. It is important to know the exact story of a different country. Bangladesh is surrounded by India mostly in the East, West, and in South East by Myanmar. Bangladesh's government regularly struggles with its huge population density especially in its capital city Dhaka (4600/km²). A larger portion of Bangladeshi people are poor and they have faced different health-related problems due to socio-economic disparities. In past Bangladesh also faced several pandemics. Again, Bangladesh has taken several initiatives to combat COVID-19. The effectiveness and ineffectiveness of these strategies will help make policy to combat another new wave or another upcoming pandemic. Therefore, the objectives of this study are to provide an overview of the deadly epidemic's experiences of Bangladesh. This study also found the strategies taken by different countries and discussed critically their success and failure stories which will further identify the areas for improvement to combat future pandemics.

Literature review

A brief review of various studies related to various pandemics experienced in Bangladesh along with the management of recent pandemic COVID-19 of different countries is described. In a study, Flora *et al.* (2010) discussed detail the history of the H1N1 virus or swine flu virus, they also discuss its mode of exposure, transmission routes as well as epidemiology. Their findings provided a clear insight to prevent the outbreak, various control measures, and preparedness against the global pandemic H1N1 virus. Azad (2010) studied the outbreak of pandemic H1N1 in 2009 and the necessity of a future action plan for Bangladesh as a poor nation with limited resources. This study also reminds us that Bangladesh is a densely populated country with a lack of capacity to handle such kinds of issues. Muraduzzaman *et al.* (2018) investigated the MERS virus among travelers, especially the pilgrim returning from the countries of the Middle East to Bangladesh. This study suggests that continuous surveillances are very much important for the detection of MERS virus disease to prevent community transmission. In a research, Islam *et al.* (2018) found that MERS was present in the camels of Bangladesh and which had a potential risk for human outbreaks. During their research 55 camels were tested for the MERS virus whereas 17% were seropositive which a public health concern was. A review study was conducted by Rahman (2011) on the Nipah virus endemic in Bangladesh. He argued that bat's urine and saliva are the main sources of the Nipah virus and it can be transmitted to the human body by drinking raw date palm juices, beaten fruits, unwashed fruits, uncooked food, etc. This work also focuses on what protection measures should be taken by people and the community during an outbreak of the Nipah virus. Islam *et al.* (2016) also conducted a study on Nipah virus transmission to the human body through bats. Their study claimed that traditional drinking date palm liquor can easily be contaminated by bat saliva, urine, excreta, etc. Interestingly, they found bat excreta in the pots used in the juice collection. This study claimed that drinking Tari is the potential source of the Nipah virus and suggested preventing bat access to a palm tree. Alam *et al.* (2010) studied the experience of the avian influenza virus in Bangladesh. This study claimed that birds that migrate from another country during winter might have germs of influenza and they introduced this disease in our country. Due to the incursion of the influenza virus in Bangladesh in 2007-2008 poultry industry faced a terrific economic loss. This study suggested for the specific area should be marked as a sanctuary for migratory birds and do not let the indigenous birds mix with migratory birds. In a study, Mutsuddy *et al.* (2019) discussed the dengue situation of Bangladesh from 2000 to 2017. They found that in the May-August month 49.73% of the cases occurred whereas during September–December 49.22% of cases occurred. In the pre-monsoon season of 2015-2017 dengue cases were 7 times higher compared with the last fourteen years. This study claims that climate change has created some ecological imbalance in nature which is the main reason for the huge occurrences of dengue fever during the pre-monsoon period. A lot of research was conducted globally including Bangladesh on the COVID-19 pandemic. Research conducted by Tashiro A. and R. Shaw (2020) compared responses of Japan with other nations on global pandemic COVID-19. Anwar *et al.* (2020) found various challenges on non-therapeutic measures of COVID-19 management such as banning travels, online or remote office works, social or physical distancing, and lockdown in Bangladesh. It was suggested that there needed strong collaborations among the health experts, governments, general people and foreign support, etc. Shaw *et al.* (2020) assessed the responses of some countries namely China, Japan, South Korea, etc. with crucial matters. Again, behavior of community people and people solidarity is important along with the decision of the government. To make the response more effective it is essential to widespread use of modern technology along with medical treatment. The above reading materials provide significant knowledge about the past experiences of different pandemics that occurred in Bangladesh. Some articles also provide experiences and knowledge about different countries' COVID-19 pandemic management strategies. The above-mentioned scholastic articles did not completely reflect how the government of Bangladesh handles the COVID-19 situations. Outlining or incorporating the past pandemic management experiences are important in deciding similar crises. Again, the information of a successful country can be beneficial for further policy-making in Bangladesh. Considering these researches gape this paper assessed the covid-19 management strategies taken by the Government of Bangladesh and other countries. During any pandemic situation, a country may take preventive strategies and mitigating strategies. Preventive strategies put a stop to prevent the outburst of pandemic whereas mitigating strategies

are used to reduce the outspread of pandemic. When the preventive strategy is successful then this strategy is called effective. In case of ineffectiveness in a preventive measure, a government has to follow a mitigating strategy. Mitigating strategy can also be effective or ineffective. Ineffectiveness for both preventive and mitigating strategy intensify the impacts of pandemic disease in a society (Baniamin *et al.*, 2020).

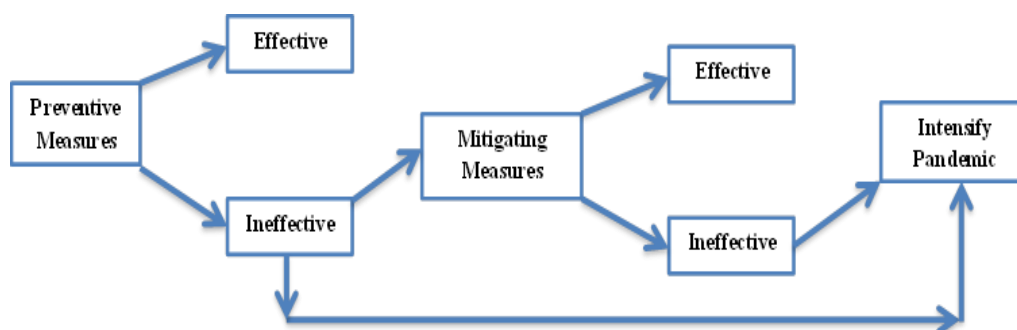


Fig. 1. Conceptual framework: Ideas taken from Baniamin *et al.* (2020)

Methodology

The present study follows a qualitative approach to understand the pandemic responses in Bangladesh. Data were collected from secondary sources like journal articles, books, websites, reputed online newspapers, etc. To ensure authenticity the collected data were cross-examined with different documents and sources. As most of the data are qualitative we applied descriptive methods for in-depth assessment.

Discussion

Nipah Virus: Nipah Virus is a bat bearing virus. *Pteropus* spp are one kind of bat species which act as a carrier of this virus or infection and these bats are also considered as natural or wild reservoir (Luby, 2013). This virus was first outbreak in Malaysia in the year of 1998. During this outbreak total of 283 people were affected and the number of death cases were 109 (Chua, 2003). Since 2001, nearly every year Nipah Virus outbreaks have occurred in Bangladesh (Luby, 2013). In the month of April-May about 13 Nipah Virus infected cases were reported in Meherpur District. Chronologically 13 cases (60% mortality) cases were reported in Naogaon in 2003, 42 cases with 33% mortality were reported in Rajbari and Manikganj in 2004. Another 36 cases were found in Faridpur in 2004 with 75% mortality. At Tangail infected cases were 12 (92% mortalities) in 2005 again at Thakurgaon infected cases were 7 (42% mortalities). There were found 9 infected cases with 88% mortality in 2008 at Rajbari and Manikgonj district. In 2011, at Hatibandha upazilla of Lalmonirhat and Dinajpur has reported 46 cases (Mortality rate 56.5%). Among these cases 21 children was died in 24 hours and the day was 4th February (ICDDR, 2004). During the outbreak of the Nipah Virus, health experts informed that this virus can transmit directly or indirectly by natural bats to the human body. Again, there is strong evidence of transmission from man to man (Hossain *et al.*, 2010; Gurley *et al.*, 2007).

Bird Flu: Bird Flu is a contagious disease of birds. Influenza A virus (H5N1) is responsible for this disease in birds and it is also known Avian Influenza. It is a highly contagious disease among birds. It is not only a devastating disease for birds but also for human beings. Fifteen countries around the world have experienced human casualties due to avian influenza from 2003 to 2010 (WHO, 2010). This pathogenic virus was detected in poultry, 2007 in Bangladesh. Until 2013 total outbreaks of avian influenza in poultry were 556 in 52 districts of Bangladesh (Loth, 2010). To combat avian influenza Bangladesh government adopted national preparedness and response plan. Since then different GOs and NGOs are continuing their surveillance activities and taking initiatives to detect and tract avian influenza (GoV, 2006).

Swine Flu: This influenza virus has a combination of genes from humans (H3N2), swine (H1N1), and avian influenza viruses (Trifonov, 2009). On 11th June 2009, WHO declared a pandemic alert and its level was six for this virus after first detection in USA. It spread in 208 countries globally (WHO, 2009). Between the year from 2009 to 2010 CDC estimated 60.8 million cases with 12469 death cases in USA (CDC, 2009). The first case this virus was recorded in 2009 (18th June) in Bangladesh. Approximately 6000 people died from pandemic influenza A (H1N1) in 2009 and the direct medicinal cost for Dhaka was 6.1 million USD to patients (Homaira, 2011). During this pandemic, the Bangladesh government has been taken a formulated preventive strategy. There was a health support desk for the air traveler in 15 different ports along with Sahajalal International Airport. To combat this emergency there were adequately trained staff and adequate storage of oseltamivir medicine (IEDCR, 2009). The World Health Organization did not have any proper guidelines on the closure of educational institutions such as schools. Rather local authority should decide regarding the whole matter (WHO, 2009)

MERS-CoV & SARS Virus: MERS-CoV or Middle East Respiratory Syndrome Coronavirus was first detected from a patient having acute pneumonia in the Kingdom of Saudi Arabia. MERS patients are badly infected by respiratory infection and have high mortality rates (Arabi *et al.*, 2015). SARS or Severe acute respiratory syndrome is also a severe respiratory disease and in 2003 it was first identified in China. SARS is considered an airborne disease and spreads through droplets like influenza or cold diseases. In the 21st century, it emerged as the first disease that can spread from one border to another (Chan and Xu, 2003).

COVID 19: On March 7, Bangladesh government confirmed that they have traced COVID-19 case in its territory. Although many specialists argued that COVID-19 may have entered here earlier before (Perera, 2020). As an effective preventive measure to control the speedy spread of COVID-19, the government of Bangladesh decided to postpone all kinds of public gathering function like rally, assemblages, group gathering, open meeting etc. As a result, 100 years birth celebration ceremony of Bangabandhu Sheikh Mujibur Rahman the founder leader of Bangladesh was postponed (Mahmud, 2020). From March 16 it was obligatory for all passengers coming from Europe to take a 14 days quarantine (Maswood, 2020). On March 26, 2020, Bangladesh started lockdown for 10 days by shutting down all government sectors, private sectors, and non-essential organizations. The emergency services such as pharmacies, groceries, and other unavoidable necessities were kept open during this lockdown (Daily Star, 25 March 2020). The classroom activities of different educational institutions of Bangladesh have been closed since March 17 due to the COVID-19 outbreak. But Government ordered to arrange online classes as well as broadcast classes on Sangsad TV. During this academic year, the government has postponed the primary education completion program, Junior School Certificate Program, and Higher Secondary Certificate (HSC) programs (New Age, 18 Dec 2020). In Bangladesh, there were only a few dedicated hospitals for COVID-19, insufficient testing kits and appropriate lab facilities, lack of trained persons, lack of PPEs, etc. Bangladesh has the lowest ratio of hospital beds and patients in Bangladesh are lowest and there is a shortage of ICU beds during the COVID-19 outbreak (BBC, 2020). Telemedicine was available and most of the patients having mild symptoms stayed at home. During this pandemic, people have faced economic crisis. To minimize Covid-19 pandemic shock in different sectors and the suffering of people government announced incentives of around \$ 11.90 billion. Again, Prime Minister of Bangladesh told that all the aiding programs will be continued throughout the pandemic (The Financial Express, 29 May 2020).

Strategies followed by different country: Different countries followed different strategies to combat this global pandemic. The people of China easily adapted to the instructions given by their government. They shared their traveling history without any hesitation and followed the quarantine rules, using masks and other protective equipment (Brueck *et al.*, 2020). Though there was some delay in the initial stage of China in responding to COVID-19, finally China combated COVID-19 by following strategies such as strong and effective governance, following hard regulations, community participation, effective big data analysis as well as uses of technology, etc. (Hua and Shaw, 2020). China also used SEIR (Susceptible-Exposed-Infectious-Removed) model and Artificial Intelligence to monitor the epidemic peak. They also created a QR-code screening process for people and it is also an achievement for monitoring by using mobile network technology and big data. Tencent Company created a website to tackle rumors and fake news of

goods, foods, corrective measures, etc. The volunteers or local communities at the village level worked hard to mitigate this pandemic (Future Earth, 2020). In the early past Hong Kong, South Korea, and Taiwan faced SARS and MARS epidemic and they successfully managed the COVID-19 pandemic by following previous experiences. Quickly they adopted various preventing measures such as banning all kinds of travel, maintaining quarantine and closing country borders, etc. (Mahtani and Denyer, 2020). In Asia, Japan practices exceptional greeting etiquette. Usually they do not do close physical touch during greeting with others. People having flu signs, cold signs or allergic symptoms use surgical masks to protect other people from contagious diseases (Takeda *et al.*, 2017). Compared with other countries, Japanese people are not reluctant to wear mask or other PPE (Furuya, 2018). Besides the health care system, Japan has National Health Insurance (NHI) that provides universal facilities to all citizens (Yano, 2020). Following the suggestion from medical experts, the Japanese Government requested the people to follow the 3C approach. 3C indicates, closed-space which has poor air circulation, crowded place having more public gathering, finally close contact during conversations. This means staying at home, avoiding the crowded area, and avoiding close contact (Dhaka Tribune, 2020). Different nations like Hong Kong, South Korea, Taiwan, Japan etc. were successful because they take effective preventive measures and through which the outbreak was under control.

Comparative responses of different countries to combat Covid-19

In comparison on pandemic responses it was found that people of Bangladesh hardly follow the safety measure. Whereas people of China strictly follow the safety measure such as wearing mask, keep distance etc. Again, 3C approach of Japan, followed by their people which reflect their obligatory behavior on government rules. Past pandemic experiences were also kept crucial role in compact Covid 19 in Hong Kong, South Korea, and Taiwan. Some countries having worldwide recognition for their universal health care facilities such as Thailand, Japan, Republic of Korea. Their investments in health care system make them resilient to case findings, surveillance etc. therefore they successfully avoided the major outbreaks of COVID-19. Overall, a variety of factors have affected how different nations have responded to fighting COVID-19. While other nations have adopted a more liberal approach, some have imposed rigorous lockdowns and aggressive testing and tracing regimes. The effectiveness of these controls on the virus's spread has also varied, with some nations managing to end community transmission while others still contending with significant numbers of cases and fatalities.

Lesson learned from past responses

Every country having different demographics, fiscal size and health care facilities, has fought against this global pandemic. Considering efforts and success in different fields following lessons can be offered. We have to invest more in preventative and health sectors. This investment will protect our people and our economy. More funds should be allocated in the surveillance system, improving testing facilities as well as increasing number of professionals. Real-time data monitoring is important tool to tack the spreading of pandemic. So, different types of data driven activities, such as data mapping, alert systems, dashboards etc. are crucial for managing outbreak of disease.

Direction for further preparedness

Further preparedness for Bangladesh involves strengthening healthcare infrastructure, improving disease surveillance, increasing vaccine coverage, strengthening public health measures, investing in research and development, and addressing social and economic impacts. Only the public health officials cannot manage pandemic. There need well-coordinated efforts from all stakeholders. Alone with coordination and collaboration country should follow the rules that better preparedness and prevention is less costly and effective than response. Furthermore, prevent community transmission the national task force must be stricter. Again, for future preparedness it is urgent to introduce modern technology to our physicians or health responsible. By making investments in these sectors, Bangladesh can lessen the burden of infectious diseases on its populace and better prepare for upcoming pandemics and outbreaks.

Conclusion

The success or failure story of Bangladesh will be useful for making future planning. On this basis, strategies should be corrected, modified, or changed. People should change their minds about accepting new rules. Again, government should give more concentration on health facilities. The capacity of the health system, testing facilities, cost-free testing should be increased. For upcoming pandemics or even for other waves governments and people should follow the state-centric strategies as well as the rules regulations of pandemic management.

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