

All Kinds of Impact Analysis of Prolonged Lockdown or Quarantine by Taking Bangladesh as an Example

Ishtiak Ahammed Tanvir

Department of Microbiology, Henry Institute of Bioscience and Technology,
University of Rajshahi, Rajshahi, Bangladesh

ABSTRACT

Covid-19 infection around the world is a huge challenge. The quarantine we are experiencing because of covid-19 has forced people from many parts of the globe to lead unexpected lives. Nowadays, quarantine has become a major public health intervention and is being used repeatedly whenever new emerging infectious diseases threaten to spread across the entire population. The consequence of implementing early and prolonged quarantine during this pandemic can be measured as lost productivity. This literature aimed to determine whether information about the effects of quarantine could change an individual's concern about covid-19. It investigated the associations between long period of quarantine and the problems created by it. The study provides an overview of the observed and the possible effects that may show up in the coming days.

KEYWORDS: Quarantine, Impact, Germophobe, opportunistic pathogens

How to cite this paper: Ishtiak Ahammed Tanvir "All Kinds of Impact Analysis of Prolonged Lockdown or Quarantine by Taking Bangladesh as an Example"

Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-4 | Issue-4, June 2020, pp.1555-1561, URL: www.ijtsrd.com/papers/ijtsrd31417.pdf



Copyright © 2020 by author(s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (<http://creativecommons.org/licenses/by/4.0>)



INTRODUCTION

On December 31, 2019, China made the World Health Organization aware of a group of unordinary instances of pneumonia that were analyzed in Wuhan, in Hubei area, China (Na Zhu, 2020) (Wang C, 2020) (Hongzhou Lu, 2020). In spite of the fact that the reason around then was obscure, the patients' symptoms and clinical highlights were generally reminiscent of a viral etiology. On January 7, 2020, authorities revealed that they had secluded the causative specialist behind the cases—a novel coronavirus (David S Hui 1, 2020) (WHO.int). The name 'novel coronavirus' has rapidly changed to what is now 'Severe Acute Respiratory Syndrome Corona Virus (SARS-CoV-2)', and the disease caused by it has become known as 'Coronavirus disease 2019 (Covid-19)' (Lisheng Wang, 2020) (WHO.int) (NMA, 2020). The World Health Organization announced the covid-19 outbreak a Public Health Emergency of International Concern (PHEIC) on 30 January, 2020 (Thirumalaisamy P Velavan, 2020) and a pandemic on 11 March, 2020 (WHO 2020). As of June 8, 2020, the virus has infected at least 7,007,948 people and has resulted in at least 402,708 deaths globally (Johns Hopkins Coronavirus Resource Center, 2020). A series of errors in addition with misfortune made an unexpected event of super spreading which led to this outbreak of covid-19 in Bangladesh. The Institute of Epidemiology, Disease Control and Research (IEDCR) confirmed the first covid-19 case in Bangladesh on March 8, 2020 and since then, a total of 65,769 people are officially

reported as covid-19 infected with 888 deaths (IEDCR, 2020). The Government of Bangladesh first declared the lockdown on 22 March which had been in force since March 26 and extended till May 30. So, people were quarantined for more than two months which is progressively shown to be affecting millions of poor people with a high impact on economy. In the reviewed literatures, the economic loss due to quarantine made serious socioeconomic distress and was seen as a risk factor for signs of psychological disorders (Mutsuko Mihashi, 2009) as well as each anger and anxiety several months after quarantine (Hyunsuk Jeong, Mental Health Status of People Isolated Due to Middle East Respiratory Syndrome, 2016) (Samantha K Brooks, 2020)

Many people referred to poor information from public health officials as a stressor, detailing inadequate clear guidelines about moves to make and confusion about the purpose of quarantine (Hyunsuk Jeong, Mental Health Status of People Isolated Due to Middle East Respiratory Syndrome, 2016) (Grazia Caleo, 2018) (Maureen A Cava, The Experience of Quarantine for Individuals Affected by SARS in Toronto, 2005) (Caleo G, 2018) (Clete DiGiovanni, 2004) (Umberto Pellicchia 1, 2015) (Emma Robertson, 2004). Absence of precision about the various levels of risk, specifically prompted public fearing the worst (Desclaux A, 2017). So, it is not enough for everyone to be in quarantine but to have a clear concept about it. Quarantine is the separation and

limitation of movement of individuals who've probably been exposed to a infectious disease to check if they turn out to be unwell, so bringing down the threat of them infecting others (Quarantine And Isolation, 2020)

The definition varies from isolation which is the separation of individuals who have been diagnosed with a infectious disease from individuals who are not sick; Anyway the two terms are utilized conversely many times, particularly in communication with the public (Alice Desclaux, Accepted Monitoring or Endured Quarantine? Ebola Contacts' Perceptions in Senegal, 2017) (Samantha K Brooks, 2020). The history of implementing quarantine measure is stigmatized by threats, common fears, lack of understanding, inequality, economic problems and rebellion (Risse, 1992) (CDC, 2003) (Mandavilli, 2003) (J Barbera, 2001) (Markel, 1993) (1, 1995). The practice of quarantine dates back to the mid 14th century when officials in Venice, Italy forced ships to take seat anchored for 40 days in order to prevent plague (Mitka, 2003). Nowadays, we've to follow some conditions because there are some basis for taking any preventive measures. If the quarantine experience is negative then there can be long-term consequences which not only affect the quarantined people but also the health care system that regulated the quarantine and the government officials as well as public health officials who ordered it. In any case, depriving people of their freedom for the wider public welfare is usually controversial and should be handled carefully. If the quarantine becomes so much necessary, at that point authorities need to take every essential steps to make this experience as tolerable to the public as possible. Imposing a cordon uncertainly on entire cities with no definite time limit can be more harmful than properly implemented quarantine processes limited to the period of incubation (Samantha K Brooks, 2020). For successful and swift containment of an outbreak quarantine must be combined with other intervention measures that include many studies revealing hospital-wide case isolation is more important than the quarantine (Troy Day, 2006) (Abba B Gumel, 2004) (James O Lloyd-Smith, 2003) (Glenn F Webb, 204) (Ying-Hen Hsieh, 2007).

Materials and methods

This study is based on the secondary data. The secondary analysis of existing data is a popular mainstream technique for improving the general productivity of the public health research sector. In this moment of data crisis, this review will greatly benefit all the researchers as it gathers all the important informations. It will also help policymakers to better understand the current condition as well as take some great initiatives.

Results and Discussion

A negative impact on public morale can be caused by prolonged quarantine. Based on the SARS experience in Toronto, a survey (Laura Hawryluck, 2004) and empirical research (Maureen A Cava, The Experience of Quarantine for Individuals Affected by SARS in Toronto, 2005) expressing that emotional problems can be developed by people during and after the quarantine (Ali Ekici, 2013). In a study (YaMei Bai, 2004), quarantined people were found to report more likely exhaustion, anxiety while coping with febrile patients, irritation, poor concentration and hesitance declining work performance, and impassivity to work or thought of resignation. Other studies reported on emotional

disturbance (Mi-Kyung Yoon, System Effectiveness of Detection, Brief Intervention and Refer to Treatment for the People With Post-Traumatic Emotional Distress by MERS: A Case Report of Community-Based Proactive Intervention in South Korea, 2016), depression (Mi-Kyung Yoon, System Effectiveness of Detection, Brief Intervention and Refer to Treatment for the People With Post-Traumatic Emotional Distress by MERS: A Case Report of Community-Based Proactive Intervention in South Korea, 2016), stress (Clete DiGiovanni, 2004), low mood (Sing Lee, The Experience of SARS-related Stigma at Amoy Gardens, 2005) and post-traumatic stress symptoms (D L Reynolds, 2008). Avoidance behaviours are noticeable among many people after quarantine. In the case of health care workers (Zdravko Marjanovic, 2007), being quarantined was notably and positively connected to avoidance behaviours which include minimizing direct contact with patients and not reporting to work. Several health care workers associated with the Ebola outbreak in Senegal revealed that quarantine had driven their families to believe their jobs to be excessively hazardous by making intra-household tension (Alice Desclaux, Accepted Monitoring or Endured Quarantine? Ebola Contacts' Perceptions in Senegal, 2017). In the same study, three participants reported being not able to continue their jobs after observation finished in light of the fact that their employers expressed fear of infection. Quarantined health care workers were found to face more stigma and rejection in a comparison (YaMei Bai, 2004) than those not quarantined. Participants in several studies reported that others were treating them in some unexpected ways as like treating them with fear and suspicion, avoiding them, withdrawing social invitations and making critical comments (Maureen A Cava, The Experience of Quarantine for Individuals Affected by SARS in Toronto, 2005) (Alice Desclaux, Accepted Monitoring or Endured Quarantine? Ebola Contacts' Perceptions in Senegal, 2017) (Clete DiGiovanni, 2004) (Laura Hawryluck, 2004) (Sing Lee, The Experience of SARS-related Stigma at Amoy Gardens, 2005) (Umberto Pellecchia, 2015) (D L Reynolds, 2008) (Emma Robertson, 2004) (Wester M, 2018) (Jason A Wilken, 2017) (Pan, 2006). Those who were quarantined during the Ebola outbreak in Liberia informed that stigma could prompt disenfranchisement of minority groups in the community as quarantined family were often said to belong to various ethnic groups, tribes, or religions and were perceived as dangerous because they were different (Umberto Pellecchia, 2015). Its known through few studies that poorer psychological outcomes of quarantine can be noticed months or years later (Hyunsuk Jeong, Mental Health Status of People Isolated Due to Middle East Respiratory Syndrome, 2016) (Xinhua Liu, 2012). In a study (Ping Wu, 2009), the impact of being quarantined was an indicator of post-traumatic stress symptoms in hospital staffs even after three years. Longer quarantine is related with more unfortunate mental health results, perhaps undoubtedly, as it makes sense that the stressors detailed by the sufferers could have a greater amount of an impact the more they were experienced for. Being not able to get regular medical care and remedies likewise gave off an impression of being an issue for certain people (Ping Wu, 2009). Having insufficient basic needs (egg, food, water, clothes, or accommodation) during quarantine was a source of frustration (Robert J Blendon, 2004) (Jason A Wilken, 2017). Confinement, loss of regular routine and reduced social as well as physical contact with others were as often as possible appeared to

cause boredom, frustration and a feeling of separation from the remainder of the world which was distressing to public (Robert J Blendon, 2004) (Annette Braunack-Mayer, 2013) (Maureen A Cava, The Experience of Quarantine for Individuals Affected by SARS in Toronto, 2005) (Alice Desclaux, Accepted Monitoring or Endured Quarantine? Ebola Contacts' Perceptions in Senegal, 2017) (Clete DiGiovanni, 2004) (Laura Hawryluck, 2004) (D L Reynolds, 2008) (Emma Robertson, 2004) (Jason A Wilken, 2017). This frustration increased by the inability to participate in common everyday activities, like as buying basic necessities (Laura Hawryluck, 2004). Detachment from friends and family, the loss of freedom, uncertainty over disease status and psychological impact like boredom can make dramatic effects. Suicide has been recorded (Is There a Case for Quarantine? Perspectives From SARS to Ebola, 2015), considerable anger produced, and lawsuits brought (SH, 2014) following the placement of quarantine in preceding outbreaks. Psychiatric history is associated with mental distress after encountering any disaster-related trauma (Jennifer Alvarez, 2005) (Judith Cukor, 2011). So, public with pre-existing poor psychological health would require additional help during quarantine (Samantha K Brooks, 2020). People confirmed fears about their own wellbeing or fears of infecting others in 8 studies (YaMei Bai, 2004) (Maureen A Cava, The Experience of Quarantine for Individuals Affected by SARS in Toronto, 2005) (Alice Desclaux, Accepted Monitoring or Endured Quarantine? Ebola Contacts' Perceptions in Senegal, 2017) (Laura Hawryluck, 2004) (Hyunsuk Jeong, Mental Health Status of People Isolated Due to Middle East Respiratory Syndrome, 2016) (Robert Maunder, 2003) (D L Reynolds, 2008) (Emma Robertson, 2004) and were more likely to fear infecting family members than those who were not in quarantine (YaMei Bai, 2004). They likewise turned out to be especially stressed on the off chance that they encountered any physical symptoms potentially related to the infection (Alice Desclaux, Accepted Monitoring or Endured Quarantine? Ebola Contacts' Perceptions in Senegal, 2017) and fear that the symptoms could reflect having the infection proceeded to be associated with mental health results awhile afterward (Hyunsuk Jeong, Mental Health Status of People Isolated Due to Middle East Respiratory Syndrome, 2016). The unfortunate fact is some people are trapped with their abusers in this quarantine. The stress of quarantine may also provoke these abusers to be even more erratic or violent. The Improvements in reduction of psychological distress as well as compliance can be achieved by minimizing the duration of quarantine, revising requirements and providing enhanced knowledge and support (D L Reynolds, 2008). Many people are getting stressed after having various gossips staying at home. Its very difficult to verify informations while being in quarantine. Lack of accurate informations have Psychological impacts (A. K. M. Israfil Bhuiyan, 2020) (Rajkumar, 2020) (Sahoo, 2020) (Tandon, 202). Social panic waved in the society during the SARS outbreak in 2003 in china because of the absence of reliable official data and spread of rumours (Wuqi Qiu, 2018). Already a Bangladeshi woman had died of heart attack on rumours associated with coronavirus (Bangladesh woman dies of heart attack on rumours son has coronavirus infection, 2020). The psychological effects of prolonged quarantine are likely to be long lasting but with awareness and support we can transform trauma into strength. The symptoms become far less severe when traumatised people

get group of people who share their experiences. A trauma sufferer can reintegrate into post-trauma life much more successfully with good support system. When traumatised people achieve perfection in their recovery, they become stronger in post-trauma phase than previous life and emerge anew with new skills as well as new sense of perspective.

Reacting to the SARS outbreak utilizing quarantine as a public health intervention resulted in a remarkable cost to scarce public health resources (Tomislav Svoboda, 2004) (Schabas, 2004). By staying indoors for a long time, the immune system of kids will decrease because they are not exposed to the viruses and bacteria on a day to day basis while they need exposure to many pathogens to build immunity. Staying in close quarters for a prolonged period of time disrupts the daily exercise. Moving around moves lymph. Stagnant lymph weakens the immune system. Also, the immunity decreases because of poor diet which stress our bodies. Insomnia, the inability to get to sleep or sleep well at night, can be caused by stress and lack of sleep isn't good for immune system. Many people are countered with an inordinate fear of covid-19 and practicing much ritual like hand washing frequently as they believe they can be infected staying in home also. There are also some people who are neat freak or also can be addressed as germophobe are likely to increase their activities of staying clean in quarantine. If this continues for a long time in quarantine, these people will be affected from secondary infections caused by opportunistic pathogens. The majority of deaths resulted from the dreadful Spanish Influenza pandemic of 1918-1919 were not only caused by the Influenza virus but also the bacterial pneumonia was responsible as a secondary bacterial infection (David M Morens, 2008) (Hunter, 2020). If everyone weaken their immune system by being stuck in a house for a long time then life-threatening opportunistic infections will thrive which are more severe in people with weakened immune system. People associated with weak immunity are more vulnerable to death if covid-19 infects. Recently, it has been come to knowledge through a study that SARS-CoV-2 attacks T cells with its receptor-dependent, spike protein-mediated membrane fusion (Xinling Wang, 2020). So, it becomes easy for the virus to lead the people to death through damaging the immune system if they already have a weak immune system. Moreover, vitamin D level deteriorates due to decreased sun exposure (Silvano Adami, 2009) and in a study, Petre et al. have described that vitamin D status has relation with the number of covid-19 cases and particularly the mortality caused by this disease. Further, vitamin D deficiency weakens the capacity of macrophages to develop to produce macrophage-specific surface antigens to create the lysosomal enzyme acid phosphatase and to emit H₂O₂, a capacity necessary to their antimicrobial function (Y Abu-Amer, 1993) (Petre Cristian Ilie, 2020). As a result, the physical condition is getting complicated by being infected with many other diseases before being infected with the covid-19. In such cases, the situation of these who are infected with the covid-19 is becoming more complicated and taking treatment in severely infected condition. That is to say, whether people are coming in open sunlight or in the air is related to the gruesomeness of the covid-19. Sunlight is germicidal which can inactivate germs like flu virus as well as kills bacteria that cause other complications (Michael Schuit, 2020) (Hobday RA, 2013). Fresh air is a natural disinfectant and this fact was proved by the scientists from Ministry of Defence during the 1960s (KR May, 1968). While

dealing with spanish flu during the 1918 pandemic, medics found that critically ill flu patients nursed outdoors recovered much better than those treated indoors. A blend of fresh air and sunlight appears to have prevented deaths among patients and infections among medical personnel (Richard A. Hobday, 2009).

As the covid-19 outbreak spreads globally with destroying consequences for human wellbeing, pets are moreover turning out to be pointless casualties in the midst of the pandemic frenzy (Dhar, 2020). Many have been hesitantly ventured out from home alone by proprietors who have been compelled to briefly empty their homes. Many people believe that they can be infected with SARS-CoV-2 from pets while staying in quarantine and fear born of this belief has resulted in pets being abandoned or even murdered. Few owners are being constrained by guardians or neighbours to abandon their pets (Dhar, 2020). When a dog in Hong Kong tested positive for the covid-19 in late February 2020, concerns started to emerge rapidly among the pet owners (NMA, 2020). Then many countries and their people started to show abusive behaviour to animals which is one of the main reasons for the increase in the number of stray animals and these animals are now living a cruel life by starving, adapting etc

The covid-19 pandemic and the enhanced lockdown implemented in response to it has brought Bangladesh economy to a standstill. Bangladesh has lost 33 billion Tk every day due to lockdown (Bangladesh loses Tk 33b a day during lockdown: study, 2020). The price of the essential commodities has raised abnormally in lockdown. The lockdown has led to the crisis of the commodities in excess of the immediate stockpile. People whose livelihoods have been affected because of the lockdowns happening in numerous countries around the globe including Bangladesh are facing financial problems (Banna, 2020) (Parry, 2020). Prolonged lockdown will absolutely have detrimental effects on the economic system of Bangladesh. The economy status of the countries like Bangladesh have already started to take a big hit. Long time lockdown period has already postponed almost all economic activities. Thousands of employments are at risk. In the textile sector alone, 15,000 workers have lost their jobs (Corraya, 2020). There are a huge percentage of working loss during this pandemic because of the fear of infection. The reduced active workforce level in critical services may led to secondary consequences causing greater impact than the covid-19 pandemic itself. Low-income people and people without fixed income normally face their worst time in this kinds of lockdown. There's no limit to the struggles of those who lose their livelihood or cannot go out of the house for it due to lockdown and if the lockdown lasts longer, then its harder to keep these people at home. In rural areas, an estimated 35 percent of the population lives below the poverty line which is 21 percent in urban areas. In a lockdown these people suffer from certain food insecurity. Moderate poor people don't store food and suddenly become helpless due to food crisis in lockdown. Adequate food availability, production and supply have been disrupted because of lockdown. This has brought about rising food costs making it tough for unprivileged people to survive) (Parry, COVID-19 and pets: When pandemic meets panic, 2020). If the lockdown exacerbated further, it will completely deplete the country's food reserves. Then Bangladesh will have to face extreme crisis which will be more terrible than

the virus itself. In the agricultural sector, farmers are in arrears with crop collection and marketing, including production shutdown. At present, Boro rice cultivating season is going on in Bangladesh but the shortage of labourers is being observed due to lockdown. It could become a disaster that might make Bangladesh suffer from food crisis. Economic downturn, unemployment and poverty are directly connected with serious mental health comorbidities like suicidal behaviours (Mayowa Oyesanya, 2015) (Goldman-Mellor SJ, 2010) (Rafi M, 2019). There have already been eight suicides in Bangladesh for lockdown, and all of them were unable to eat due to scarcity (A. K. M. Israfil Bhuiyan, 2020). Therefore, some alternatives to lockdown should be considered, otherwise many suicide marches cannot be stopped.

The effect of Bangladesh's long time lockdown is starting to hit hard. There's no medication that can improve this current situation. Many people get stuck in different places in the lockdown and their life become difficult as a result of it (Ganai, 2020). Many Bangladeshi workers are experiencing a loss income as they are barred from working because of a possible exposure to covid-19. Bangladeshi officials are struggling to control this mysterious disease but its urgent to control the outbreak as quickly as possible because of its appearance to spread rapidly.

Conclusion

Research on lockdown and its effect on public health has been limited. In country like Bangladesh, long time lockdown or quarantine will become an enormous public health problem. It can led to panic attacks with the fear and anxiety that it may be fatal in us or someone from the family. Social media and rumours that spread around have also a huge role in the context of this anxiety and fear. Quarantined people should be cared of nicely for normalizing the impact. The government should create a committee of worthy officials and experienced experts in the fields of public health, vaccine and drug research, emergency management, law enforcement, business continuity and economics. It's beyond the realm of imagination to expect to lighten the effects of a prolonged quarantine individually yet the joint effort from the state authority and concern individuals of all sectors need to come forward. The World Health Organization (WHO) has said that this virus can be a chronic problem (Coronavirus: WHO says 'this virus may never go away', 2020). So, this study suggests to find alternate ways to survive other than quarantine or a new lockdown.

References

- [1] (CDC), C. f. (2003). Use of Quarantine to Prevent Transmission of Severe Acute Respiratory syndrome--Taiwan, 2003. *MMWR Morb Mortal Wkly Rep*, 680-3.
- [2] (2020, June 08). Retrieved from Johns Hopkins Coronavirus Resource Center: <https://coronavirus.jhu.edu/>
- [3] A. K. M. Israfil Bhuiyan, N. S. (2020). COVID-19-Related Suicides in Bangladesh Due to Lockdown and Economic Factors: Case Study Evidence from Media Reports. *International Journal of Mental Health and Addiction*. doi:10.1007/s11469-020-00307-y
- [4] Abba B Gumel, S. R. (2004). Modelling Strategies for Controlling SARS Outbreaks. *Proc Biol Sci*, 2223-32. doi:10.1098/rspb.2004.2800

- [5] Ali Ekici, P. K. (2013). Modeling Influenza Pandemic and Planning Food Distribution. *Manufacturing & Service Operations Management*. doi:doi.org/10.1287/msom.2013.0460
- [6] Alice Desclaux, D. B. (2017). Accepted Monitoring or Endured Quarantine? Ebola Contacts' Perceptions in Senegal. *Soc Sci Med*, 38-45. doi:10.1016/j.socscimed.2017.02.009
- [7] Annette Braunack-Mayer, R. T. (2013). Understanding the School Community's Response to School Closures During the H1N1 2009 Influenza Pandemic. *BMC Public Health*. doi:10.1186/1471-2458-13-344
- [8] (2020). *Bangladesh loses Tk 33b a day during lockdown: study*. bdnews24.com. Retrieved from <https://bdnews24.com/economy/2020/04/21/bangladesh-loses-tk-33b-a-day-during-lockdown-study>
- [9] (2020). *Bangladesh woman dies of heart attack on rumours son has coronavirus infection*. bdnews24.com. Retrieved from <https://bdnews24.com/bangladesh/2020/02/13/bangladesh-woman-dies-of-heart-attack-on-rumours-son-has-coronavirus-infection>
- [10] Banna, D. H. (2020). *Minimising the economic impact of Coronavirus in Bangladesh*.
- [11] Caleo G, D. J. (2018). The factors affecting household transmission dynamics and community compliance with Ebola control measures: a mixed-methods study in a rural village in Sierra Leone. *BMC Public Health*, 248. doi:10.1186/s12889-018-5158-6
- [12] Cleto DiGiovanni, J. C. (2004). Factors Influencing Compliance With Quarantine in Toronto During the 2003 SARS Outbreak. *Biosecur Bioterror*, 265-72. doi:10.1089/bsp.2004.2.265.
- [13] (2020). *Coronavirus: WHO says 'this virus may never go away'*. ALJAZEERA. Retrieved from <https://www.aljazeera.com/news/2020/05/virus-200513190939371.html>
- [14] Corraya, S. (2020). *Dhaka, 15 thousand textile workers lose their jobs in coronavirus crisis*. AsiaNews.it. Retrieved from <http://www.asianews.it/news-en/Dhaka-15-thousand-textile-workers-lose-their-jobs-in-coronavirus-crisis-49846.html>
- [15] D L Reynolds, J. R. (2008). Understanding, Compliance and Psychological Impact of the SARS Quarantine Experience. *Epidemiol Infect*, 997-1007. doi:10.1017/S0950268807009156.
- [16] David M Morens, J. K. (2008). Predominant Role of Bacterial Pneumonia as a Cause of Death in Pandemic Influenza: Implications for Pandemic Influenza Preparedness. *J Infect Dis*, 962-70. doi:10.1086/591708
- [17] David S Hui, E. I. (2020). The Continuing 2019-nCoV Epidemic Threat of Novel Coronaviruses to Global Health - The Latest 2019 Novel Coronavirus Outbreak in Wuhan, China. *Int J Infect Dis*, 264-266. doi:10.1016/j.ijid.2020.01.009
- [18] Desclaux A, B. D. (2017). Accepted monitoring or endured quarantine? Ebola contacts' perceptions in Senegal. *Social Science & Medicine (1982)*, 38-45. doi:10.1016/j.socscimed.2017.02.009
- [19] Dhar, R. (2020). *Your pets won't spread coronavirus*. Dhaka Tribune. Retrieved from <https://www.dhakatribune.com/bangladesh/2020/03/13/your-pets-are-unlikely-to-spread-coronavirus>
- [20] Emma Robertson, K. H. (2004). The Psychosocial Effects of Being Quarantined Following Exposure to SARS: A Qualitative Study of Toronto Health Care Workers. *Can J Psychiatry*, 403-7. doi:10.1177/070674370404900612.
- [21] Ganai, N. (2020). *Just Want To Go Home': Stuck in Bangladesh, Kashmiri Students Seek Evacuation Amid Covid-19 Fears*. Outlookindia. Retrieved from <https://www.outlookindia.com/website/story/india-news-stuck-in-bangladesh-kashmiri-students-see-evacuation-amid-coronavirus-fears/349546>
- [22] Glenn F Webb, M. J. (2004). Critical Role of Nosocomial Transmission in the Toronto Sars Outbreak. *Math Biosci Eng*, 1-13. doi:10.3934/mbe.2004.1.1
- [23] Goldman-Mellor SJ, S. K. (2010). Economic contraction and mental health: a review of the evidence. *International Journal of Mental Health*, 6-31. doi:10.2753/IMH0020-7411390201
- [24] Grazia Caleo, J. D. (2018). The Factors Affecting Household Transmission Dynamics and Community Compliance With Ebola Control Measures: A Mixed-Methods Study in a Rural Village in Sierra Leone. *BMC Public Health*, 248. doi:10.1186/s12889-018-5158-6
- [25] Hobday RA, D. S. (2013). Roles of sunlight and natural ventilation for controlling infection: historical and current perspectives. *The Journal of Hospital Infection*, 271-282. doi:10.1016/j.jhin.2013.04.011
- [26] Hongzhou Lu, C. W.-W. (2020). Outbreak of Pneumonia of Unknown Etiology in Wuhan, China: The Mystery and the Miracle. *J Med Virol*, 401-402. doi:10.1002/jmv.25678
- [27] Hunter, P. (2020). The Spread of the COVID-19 Coronavirus: Health Agencies Worldwide Prepare for the Seemingly Inevitability of the COVID-19 Coronavirus Becoming Endemic. *EMBO Rep*, e50334. doi:10.15252/embr.202050334
- [28] Hyunsuk Jeong, H. W.-J.-A.-H. (2016). Mental Health Status of People Isolated Due to Middle East Respiratory Syndrome. *Epidemiol Health*, e2016048. doi:10.4178/epih.e2016048
- [29] IEDCR. (2020, June 08). Retrieved from [iedcr.gov.bd: https://www.iedcr.gov.bd/index.php/component/content/article/73-ncov-2019](https://www.iedcr.gov.bd/index.php/component/content/article/73-ncov-2019)
- [30] Is There a Case for Quarantine? Perspectives From SARS to Ebola. (2015). *Donna Barbisch, Kristi L Koenig, Fuh-Yuan Shih*, 547-53. doi:10.1017/dmp.2015.38.
- [31] J Barbera, A. M. (2001). Large-scale Quarantine Following Biological Terrorism in the United States: Scientific Examination, Logistic and Legal Limits, and Possible Consequences. *JAMA*, 2711-7. doi:10.1001/jama.286.21.2711.
- [32] James O Lloyd-Smith, A. P. (2003). Curtailing Transmission of Severe Acute Respiratory Syndrome Within a Community and Its Hospital. *Proc Biol Sci*, 1979-89. doi:10.1098/rspb.2003.2481

- [33] Jason A Wilken, P. P. (2017). Knowledge, Attitudes, and Practices Among Members of Households Actively Monitored or Quarantined to Prevent Transmission of Ebola Virus Disease - Margibi County, Liberia: February-March 2015. *Prehosp Disaster Med*, 673-678. doi:10.1017/S1049023X17006720
- [34] Jennifer Alvarez, M. H. (2005). Risk and Resilience in Canine Search and Rescue Handlers After 9/11. *J Trauma Stress*, 497-505. doi:10.1002/jts.20058
- [35] Judith Cukor, K. W. (2011). Prevalence and Predictors of Posttraumatic Stress Symptoms in Utility Workers Deployed to the World Trade Center Following the Attacks of September 11, 2001. *Depress Anxiety*, 210-7. doi:10.1002/da.20776
- [36] K R May, H. A. (1968). A Microthread Technique for Studying the Viability of Microbes in a Simulated Airborne State. *J Gen Microbiol*, 353-66. doi:10.1099/00221287-51-3-353
- [37] Laura Hawryluck, W. L. (2004). SARS Control and Psychological Effects of Quarantine, Toronto, Canada. *Emerg Infect Dis*, 1206-12. doi:10.3201/eid1007.030703.
- [38] Lisheng Wang, Y. W. (2020). Review of the 2019 Novel Coronavirus (SARS-CoV-2) Based on Current Evidence. *Int J Antimicrob Agents*, 105948. doi:10.1016/j.ijantimicag.2020
- [39] Mandavilli, A. (2003). SARS Epidemic Unmasks Age-Old Quarantine Conundrum. *Nat Med*, 487. doi:10.1038/nm0503-487.
- [40] Markel, H. (1993). Cholera, Quarantines, and Immigration Restriction: The View From Johns Hopkins, 1892. *Bull Hist Med*, 691-702.
- [41] Maureen A Cava, K. E. (2005). The Experience of Quarantine for Individuals Affected by SARS in Toronto. *Public Health Nurs*, 398-406. doi:10.1111/j.0737-1209.2005.220504.x
- [42] Mayowa Oyesanya, J. L.-M. (2015). Systematic Review of Suicide in Economic Recession. *World J Psychiatry*, 243-54. doi:10.5498/wjp.v5.i2.243
- [43] Michael Schuit, S. G. (2020). The Influence of Simulated Sunlight on the Inactivation of Influenza Virus in Aerosols. *J Infect Dis*, 372-378. doi:10.1093/infdis/jiz582
- [44] Mi-Kyung Yoon, S.-Y. K.-S.-S. (2016). System Effectiveness of Detection, Brief Intervention and Refer to Treatment for the People With Post-Traumatic Emotional Distress by MERS: A Case Report of Community-Based Proactive Intervention in South Korea. *Int J Ment Health Syst*. doi:10.1186/s13033-016-0083-5
- [45] Mitka, M. (2003). SARS Thrusts Quarantine Into the Limelight. *JAMA*, 1696-8. doi:10.1001/jama.290.13.1696.
- [46] Mutsuko Mihashi, Y. O. (2009). Predictive Factors of Psychological Disorder Development During Recovery Following SARS Outbreak. *Health Psychol*, 91-100. doi:10.1037/a0013674
- [47] Na Zhu, D. Z. (2020). A Novel Coronavirus From Patients With Pneumonia in China, 2019. *N Engl J Med*, 727-733. doi:10.1056/NEJMoa2001017
- [48] NMA, P. (2020). COVID-19 and pets: When pandemic meets panic. *Forensic Science International: Reports*, 100090-100090. doi:10.1016/j.fsir.2020.100090
- [49] Pan, P. J. (2006). A Support Group for Home-Quarantined College Students Exposed to SARS: Learning from Practice. *The Journal for Specialists in Group Work*, 363-374. doi:doi.org/10.1080/01933920500186951
- [50] Parry, N. M. (2020). COVID-19 and pets: When pandemic meets panic. *Forensic Science International: Reports*, 100090. doi:10.1016/j.fsir.2020.100090
- [51] Petre Cristian Ilie, S. S. (2020). The Role of Vitamin D in the Prevention of Coronavirus Disease 2019 Infection and Mortality. *Aging Clin Exp Res*, 1-4. doi:10.1007/s40520-020-01570-8
- [52] Ping Wu, Y. F. (2009). The Psychological Impact of the SARS Epidemic on Hospital Employees in China: Exposure, Risk Perception, and Altruistic Acceptance of Risk. *Can J Psychiatry*, 302-11. doi:10.1177/070674370905400504
- [53] *Quarantine And Isolation*. (2020). Retrieved from Cdc.gov: <https://www.cdc.gov/quarantine/index.html>
- [54] Rafi M, M. M. (2019). Psychological implications of unemployment among Bangladesh Civil Service job seekers: a pilot study. *Frontiers in Psychiatry*. , e578. doi:10.3389/fpsy.2019.00578.
- [55] Rajkumar, R. (2020). COVID-19 and mental health: a review of the existing literature., *Asian Journal of Psychiatry*, e102066 .
- [56] Richard A. Hobday, P. a. (2009). The Open-Air Treatment of PANDEMIC INFLUENZA. *Am J Public Health*, S236-S242. doi:10.2105/AJPH.2008.134627
- [57] Risse, G. B. (1992). "A Long Pull, a Strong Pull, and All Together": San Francisco and Bubonic Plague, 1907-1908. *Bull Hist Med*, 260-86.
- [58] Robert J Blendon, J. M.-C. (2004). The Public's Response to Severe Acute Respiratory Syndrome in Toronto and the United States. *Clin Infect Dis*, 925-31. doi:10.1086/382355
- [59] Robert Maunder, J. H. (2003). The Immediate Psychological and Occupational Impact of the 2003 SARS Outbreak in a Teaching Hospital. *CMAJ*, 1245-51.
- [60] Sahoo, S. B. (2020). Self-harm and COVID-19 pandemic: an emerging concern a report of 2 cases from India. *Asian Journal of Psychiatry*, 102104.
- [61] Samantha K Brooks, P. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet Journal*. doi:doi.org/10.1016/S0140-6736(20)30460-8
- [62] Schabas, R. (2004). Severe Acute Respiratory Syndrome: Did Quarantine Help? *Can J Infect Dis Med Microbiol*. doi:10.1155/2004/521892
- [63] SH, M. (2014). *Kaci Hickox: Public health and the politics of fear*. Retrieved from

- <http://www.bioethics.net/2014/11/kaci-hickox-public-health-and-the-politics-of-fear/>
- [64] Silvano Adami, F. B. (2009, 423-6). 25-hydroxy Vitamin D Levels in Healthy Premenopausal Women: Association With Bone Turnover Markers and Bone Mineral Density. *Bone*. doi:10.1016/j.bone.2009.05.012
- [65] Sing Lee, L. Y. (2005). The Experience of SARS-related Stigma at Amoy Gardens. *Soc Sci Med*, 2038-46. doi:10.1016/j.socscimed.2005.04.010
- [66] Tandon, R. (202). The COVID-19 pandemic personal reflections on editorial responsibility. *Asian Journal of Psychiatry*, e102100.
- [67] Thirumalaisamy P Velavan, C. G. (2020). The COVID-19 Epidemic. *Trop Med Int Health*, 278-280. doi:10.1111/tmi.13383
- [68] Tomislav Svoboda, B. H. (2004). Public Health Measures to Control the Spread of the Severe Acute Respiratory Syndrome During the Outbreak in Toronto. *N Engl J Med*, 2352-61. doi:10.1056/NEJMoa032111
- [69] Troy Day, A. P. (2006). When Is Quarantine a Useful Control Strategy for Emerging Infectious Diseases? *Am J Epidemiol*, 479-85. doi:10.1093/aje/kwj056
- [70] Umberto Pellicchia, R. C.-K. (2015). Social Consequences of Ebola Containment Measures in Liberia. *PLoS One*, e0143036. doi:10.1371/journal.pone.0143036
- [71] Wang C, H. P. (2020). A novel coronavirus outbreak of global health concern. *Lancet (London, England)*, 470-473. doi:10.1016/s0140-6736(20)30185-9
- [72] Wester M, G. J. (2018). Ebola and healthcare worker stigma. *Scandinavian Journal of Public Health*, 99-104. doi:10.1177/1403494817753450
- [73] (n.d.). *WHO.int*. Retrieved from <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>
- [74] Wuqi Qiu, C. C. (2018). The Impacts on Health, Society, and Economy of SARS and H7N9 Outbreaks in China: A Case Comparison Study. *J Environ Public Health*. doi:10.1155/2018/2710185
- [75] Xinhua Liu, M. K. (2012). Depression After Exposure to Stressful Events: Lessons Learned From the Severe Acute Respiratory Syndrome Epidemic. *Compr Psychiatry*, 15-23. doi:10.1016/j.comppsy.2011.02.003
- [76] Xinling Wang, W. X. (2020). SARS-CoV-2 infects T lymphocytes through its spike protein-mediated membrane fusion. *Cellular & Molecular Immunology (2020)*.
- [77] Y Abu-Amer, Z. B.-S. (1993). Impaired Bone Marrow-Derived Macrophage Differentiation in Vitamin D Deficiency. *Cell Immunol*, 356-68. doi:10.1006/cimm.1993.1245
- [78] YaMei Bai, C.-C. L.-Y.-Y.-M. (2004). Survey of Stress Reactions Among Health Care Workers Involved With the SARS Outbreak. *Psychiatr Serv*, 1055-7. doi:10.1176/appi.ps.55.9.1055.
- [79] Ying-Hen Hsieh, C.-C. K.-S.-B.-C. (2007). Impact of Quarantine on the 2003 SARS Outbreak: A Retrospective Modeling Study. *J Theor Biol*, 729-36. doi:10.1016/j.jtbi.2006.09.015
- [80] Zdravko Marjanovic, E. R. (2007). The Relevance of Psychosocial Variables and Working Conditions in Predicting Nurses' Coping Strategies During the SARS Crisis: An Online Questionnaire Survey. *Int J Nurs Stud*, 991-8. doi:10.1016/j.ijnurstu.2006.02.012