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Seeking an ethical theory for the COVID-19 pandemic outbreak with special reference to Bangladesh's law and policy

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Abstract

Globally, a traditional management model has generally been used to manage disaster situations, including in Bangladesh. In Bangladesh, the government mostly uses the preparedness policy for pandemic outbreak case management. With regard to the limitations arising from the pandemic outbreak the current research will investigate the following questions: when facing a devastating situation, what exactly is the nature of the pandemic outbreak management model incorporated at the governmental level? Keeping these questions in mind, the intention of the existing model is to provide smooth and appropriate assistance to recover from a pandemic outbreak, and to implement effective governance of the situation. This research will identify deficiencies in the current epidemic management policy in Bangladesh, and will assist in forming a new model and developing a systematic procedure for managing future pandemic outbreak situations. The main deficiency in Bangladesh's pandemic management is that the policy paper has failed to identify all hazardous events that may occur in a pandemic outbreak. In most cases, it has underestimated the issues of bioethical responsibility toward the different stakeholders affected during the devastating situation of a pandemic outbreak. The policy does not emphasize the bioethical model; therefore, it fails to encourage support for either public protection or an ethically friendly management system. The model proposed in this article demonstrates an appropriate way to reduce or, if possible, avoid potential damages and losses from a pandemic outbreak. The model aims to prioritize the problems that need assistance to recover from the outbreak.

KEYWORDS

bioethics, COVID-19, disaster ethics, infectious law, pandemic outbreak, stigma, triage ethics

1 | INTRODUCTION

The history of the human struggle against infectious diseases is nothing new. Infectious diseases, especially viruses, have been spreading on a global scale for the last five decades. Infections from the Ebola virus, SARS, NEPA virus, and avian influenza have killed millions of people globally. Decades ago, swine flu became a threat to the poultry trade in East Asia as well as Europe.[1] The prevalence and experience of infectious diseases is not similar in different parts of the world. Due to advances in medical science, it has been possible to take some remedial measures against infectious diseases. The success of vaccinations against small-pox, cholera, bubonic plague, and other diseases does not escape our attention. The COVID-19 virus, however, has appeared among us with a different nature and severity compared to any other virus we have experienced in the past. One of the features of COVID-19 is that it is easily transmissible from one person to another through touch and communication. In this regard, community transmission is a common phenomenon in infectious disease. Considering the various dimensions and effects of COVID-19, the Government of

[1]Walsh, B. (2020, March 25). Covid-19 : The History of Pandemics, BBC Future. Retrieved May 20, 2020, from https://www.bbc.com/future/article/20200325-covid-19-the-history-of-pandemics; See also: Saunders-Hastings, P.R., & Krewski, D. (2016). Reviewing the History of Pandemic Influenza: Understanding Patterns of Emergence and Transmission. *Pathogens*. 5(4): 66.

Bangladesh recently introduced two policy papers[2] in addition to the existing *Infectious Diseases Act*. By assessing the two policy guidelines, we get the impression that lock-down, social distancing, and quarantine are given most importance. It begs the question, however: are these few factors enough to control pandemic outbreaks? It is necessary to consider how these steps have caused a confrontation with people's everyday ability to choose and their moral rights needs from a socio-ethical perspective. On reflection, there are many other issues that need to be addressed in accordance with the requirements of hygiene, fairness, and discretion. Because of the importance of these issues, this research article proposes a model that will help provide guidelines for managing future pandemic outbreaks, and incorporates responses to additional issues that arise. How can we incorporate these various problems into our proposed model? What sorts of relevant ingredients and notions should be included in the model to justify our actions in a pandemic outbreak situation? In a pandemic, what are the significant issues that require enhancement to motivate people to act? In addition to these questions, this article will examine several other issues. First, it will explore the genesis, constraints, limitations, and implications of the current ongoing pandemic management policy in Bangladesh. In developing a clearer understanding, this article justifies some of the challenges regarding pandemic outbreak management policy in Bangladesh, and then proposes a model for handling the pandemic outbreak situation.

2 | URGENCY OF MODELING IN AN EPIDEMIC OUTBREAK

In the pandemic management policy papers[3] adopted by the Bangladesh Government's health sector in March 2020, it could be said that there was not any specific criterion applied to determine the strength of the implementation strategies. The policy paper failed to incorporate bioethical strategies to handle the various aspects of people's lives, which is required in a policy paper. In particular, it involves the issue of fair distribution of emergency medicine and medical equipment during disasters (such as the pandemic outbreak disaster), as well as decisions which would be, to some extent, responsible for citizens' rights and deprivation. These resource distribution processes are painful for the government and administration in any disaster. For example, the scarcity of resources highlights the issue of determining who gets priority. It is often the case that the infected community receives special benefits but, sometimes, those who are members of remote, marginalized and socially less important areas are deprived of these benefits. Proper distribution of disaster relief assistance creates good prospects. Otherwise, the aid has a poor effect. Here, it is important to consider how the opportunity-cost policy will work, and how the value of life will be considered. The urgency of incorporating ethics in the distribution of disaster relief assistance has been highlighted in various international agency and scholarly works.[4]

What kind of policy and modeling should be incorporated to meet the challenges of an epidemic emergency? Various policy models have been proposed as part of an academic solution to this problem. The World Health Organization (WHO)[5] proposed a Mathematical Model regarding issues arising from a pandemic influenza outbreak in 2009, and further research focusing on the 2009 influenza outbreak proposed an Epidemic and Intervention Model.[6] Garske and colleagues developed a model to assess the severity of epidemics.[7] Shaman and Lipsitch emphasized the importance of using a Model of Seasonality Testing[8]. Halder and colleagues[9] developed another model that looked at the potential impact of interventions associated with pandemics. In North American, European, and East Asian countries, the emphasis in these models is planning and exploring mitigation options for epidemics and pandemics. These models are used not only to help with outbreak analysis, but also help in working out what the public response to infectious disease outbreaks should be. Policies and decision-making can also be made quickly through modeling by analyzing the risks and impact of new infectious organisms on public health, from the beginning of the epidemic. All of these models help in assessing the viability of specific control measures for the infection, and are only a few of countless more models.

All of these models, however, are essentially statistical and mathematical models, which use epidemiological, clinical, virological, genetic, and socio-demographic data to measure the pattern of disease transmission. Mathematical models are not enough to fill these bioethical gaps for two reasons: first, modeling only assesses the effectiveness of interventions, which may not always provide accurate information. In the influenza pandemic outbreak of 2009, some of the problems encountered by using these models for the mitigation of the influenza epidemic pointed out their ultimate failure.[10] Often, there are difficulties accu-

[2]Report on COVID-19 (2020). National Preparedness and Response Plan for COVID-19. Directorate General of Health Services, Health Service Division, Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh, Bangladesh: Version March 5, 2020; NG COVID-19 (2020). National Guidelines on Clinical Management of Corona Virus Disease 2019 (COVID-19). Disease Control Division Directorate General of Health Services, Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh.

[3]Ibid.

[4]Brody, B. A. (1990). The Role of Philosophy in Public Policy and Bioethics. Special issue of *Journal of Philosophy and Medicine*. 15 (4):345-6; Hanna, K.E., Cook-Deegan, R.M. & Nishimi, R.Y. (1993). Finding a Forum for Bioethics in U.S. Public Policy. *Politics & Life Sciences*. 12 (2), 205-19.; Smith II, G.P. (2012). *Law and Bioethics: Intersections Along the Mortal Coil*. New York: Rutledge.

[5]WHO. (2009). Pandemic Influenza Preparedness and Response: A WHO Guidance Document. World Health Organization. Retrieved July 12, 2020, from https://www.who.int/influenza/resources/documents/pandemic_guidance_04_2009/en/.

[6]Van Kerkhove, M.D., & Ferguson, N.M. (2012). Epidemic and Intervention Modelling – A Scientific Rationale for Policy Decisions? Lessons from the 2009 Influenza Pandemic. *Bulletin of the World Health Organization*. 90: 306-310.

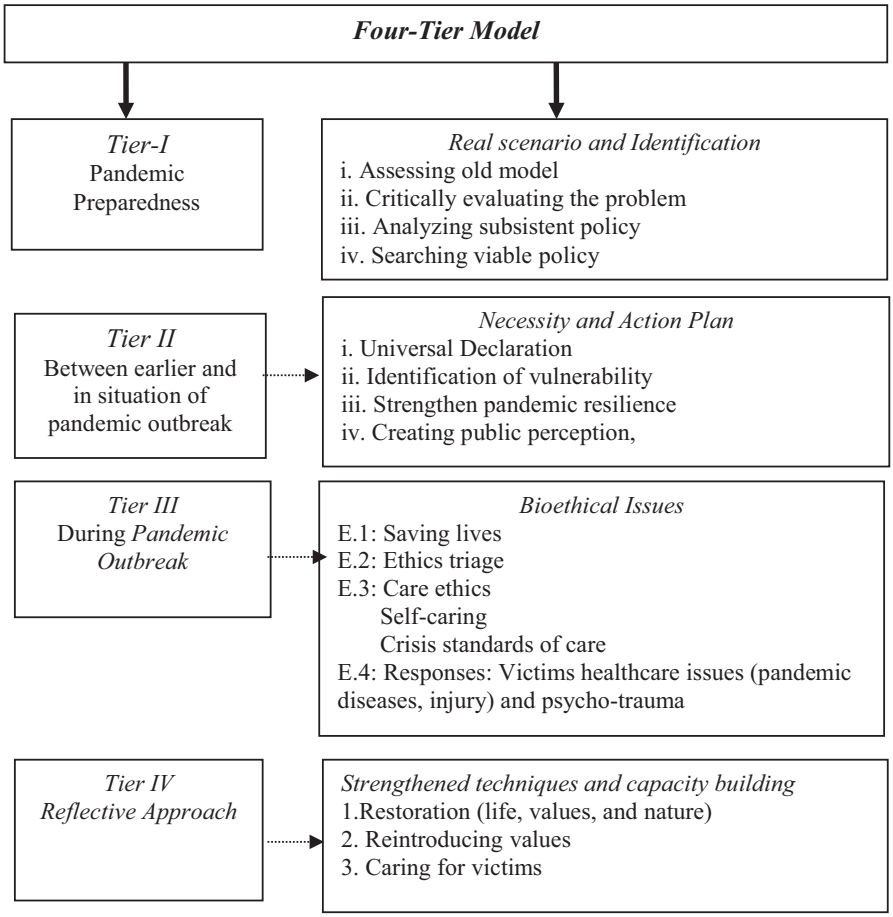
[7]Garske, T., Legrand, J., Donnelly, C.A., et.al. (2009). Assessing the Severity of the Novel Influenza A/H1N1 *Pandemic*. *BMJ*. 339:b2 840.

[8]Shaman, J., Goldstein, E., Lipsitch, M. (2011). Absolute Humidity and Pandemic versus Epidemic Influenza. *Am J Epidemiol*. 173: 127-35; Lipsitch, M., Viboud, C. (2009). Influenza Seasonality: Lifting the Fog. *Proc Natl Acad Sci*.106: 3645-6.

[9]Halder, N., Kelso, J.K., & Milne, G.J. (2010). Developing Guidelines for School Closure Interventions to be Used during a Future Influenza Pandemic. *BMC Infectious Diseases*.10: 221.

[10]Kamigaki, T., & Oshitani, H. (2010). Influenza Pandemic Preparedness and Severity Assessment of Pandemic (H1N1) 2009 in Southeast Asia. *Public Health*. 124(1):5-9.

FIGURE 1 Four-Tier Model[11]



rately compiling the data to determine how many people are infected. Because of this limitation, it becomes more difficult to determine the number of infected people in a real sense. Policymakers often disagree with what the modeling expert wants, and the complexity created by this process seriously disrupts the overall process. Second, beyond mathematical calculations, every pandemic has some aspects of sociology, psychology, economics, and behavior. There are essentially three groups associated with a pandemic: the authorities, the infected victims, and the uninfected public, as well as the allocation of resources and services. In a pandemic situation, what should the role of the authorities be? Conversely, what role should be expected from the public, for those who are infected or uninfected? Every pandemic also has an existing psychological factor; that is, stigma. How to manage this stigma needs to be taken into account. The public interest should also be considered, especially regarding their existing values, civil rights, and needs. The policy paper must clearly state the obligation of the patient to be in quarantine, as well as the duty of the state. Related to these issues, what is the authority's role in determining the need and allocation process of the limited equipment and medicine involved with an epidemic outbreak? Based on these factors, we are proposing a model that will be known as the *Four-Tier Model* to formulate policy in any disaster situation.

The current research will focus on the ongoing COVID-19 pandemic outbreak as a case, applying the *Four-Tier Model* in order to formulate a policy paper. Therefore, the structure of this article is to describe a new model of the management system, which should primarily contribute to the security of humans. Through this model, a bioethical framework will be developed, which will be composed of (i) ethical standards, (ii) monitoring, and (iii) resilience.

3 | CONCEPTUAL FRAMEWORK OF FOUR-TIER MODEL

Using the context of Bangladesh, this article proposes a bioethical model for managing the *Pandemic Outbreak Disaster Management* (*PoDM*). There are at least two reasons for constructing the *Four-Tier Model*: (i) Since its independence, Bangladesh has not yet launched any policy to regulate the adverse effects of disaster, such as a pandemic outbreak, in a complete sense; (ii) The current policy for managing the pandemic outbreak in Bangladesh ignores a number of social, psychological, and bioethical issues, which requires serious attention.

There is thus a need to develop a model that can help to deal with disasters, such as the pandemic outbreak situation. To formulate a viable model, issues concerning life, living beings, interests of victims, food safety, necessary medical equipment, and medicine, among many other things, should be incorporated. The model can be schematized as below (Figure 1). In this proposed model, Tier-III is very important, which will be enacted in a disaster situation.

[11]In Figure 1, E (E1, E2, E3 & E4) is set for ethical values.

Tier I: Real Scenario and Identification. To construct the model, the first tier is used to critique the traditional policy and model. This tier comprises of three components: The first component will be critical and deliberative. This tier also comprises of three techniques: (i) *assess* the problems of the disaster situation; (ii) develop a *planning framework* to solve the assessed problems; and (iii) undertake a critical *evaluation* of the problem. Under the first component of critically evaluating the problem, the model will focus on important points that work in two ways. The first aspect is critical assessment, which is how the study will critically respond to Bangladesh's pandemic disaster management model. A successful inquiry through this critical assessment will establish a new path by which to accommodate the large number of people from Bangladesh by considering their cultural backgrounds.

Tier II: Necessity and action plan. COVID-19 has spread worldwide, and its negative social, political, and economic impacts have created an intense situation globally. It is also important to be perceptive of public opinion, and understanding the various bitter experiences that the public have already faced. Some other essential understandings should also be included in the policy paper, including state initiatives to protect vulnerable populations and attempts to improve their resilience.

Tier III: Bioethical concern. The third tier will identify the core *PoDM* of Bangladesh with the aim of helping people recognize how they should interact with the consequences of a pandemic situation. A number of bioethical principles are also needed to handle the whole situation while the Pandemic Outbreak is underway. Discussions will be held on how the infected population can be kept alive, and their care, treatment and other issues related to ethics triage can play a role as components of Tier III of this model.

Tier IV: Strengthened techniques and capacity building. After the current pandemic situation returns to normal, it will be necessary to restart daily life. *Tier IV* will thus focus on the following considerations: (1) How has our way of life and social relationships have changed. Reviving traditional core values can be helpful to prevent adverse social impacts from this pathogen; (2) What kind of support and assistance, be it mental or financial or both, will the victims of the disease need to cope with their new lives. Therefore, in order to innovate and make use of existing medical care, it is imperative to restore our prevailing humanitarian values in and sense of solidarity with our medical services, as well as the public sphere. Considering this view, the fourth tier will comprise of: (i) the lead for victims and the facilitation of ways to address problems arising from the aftermath of the pandemic outbreak; (ii) techniques to strengthen the pandemic disaster management model; and (iii) ways to develop a reintegration program for people of different mindsets and cultural backgrounds.

4 | IMPLICATION OF THE PODM MODEL

This model will work as a *Seeger*. Each of the different tiers of the *Four-Tier Model* play a significant role in handling the situation. The model encompasses efficient management issues such as rescue, relief, rehabilitation, and reconstruction (the 4Rs) as well as a critical evaluation of the situation. A deliberative process and pandemic outbreak governance will provide outlines of preventive measures, with the intention that they will remedy the possible risks and hazards. In addition, the model will provide a remedial technique to be used during a pandemic outbreak. The combination of the deliberative process and good governance will effectively minimize the negative effects of the pandemic disaster. The model's reflective approach will assess whether achievements and lessons are available, before moving on to evaluate ongoing disaster management. Thus, the model will help to address the whole situation by both undertaking a new plan and implementing planning for future actions.

4.1 | Implication of the First Tier

The traditional policy paper currently used in Bangladesh does not focus on achieving the interests of all groups and situations. The main purpose of this research work is to study the genesis and limitations (and their implications) of disaster management in Bangladesh. By exploring the constraints and limitations of the existing management model, we can better understand the best way to formulate a competent and consistent policy. In pursuing these goals, the following issues will be investigated:

(i) Develop a clear understanding of some of the bioethical challenges of disaster management in Bangladesh.
(ii) Identify the relevant practices of disaster management policy in neighboring countries. This could be useful as a benchmarking process — weighing international best practice with current policy in Bangladesh.
(iii) Show the appropriate way to reduce or, if possible, avoid potential damages and losses from a disaster.

4.1.1 | Some Implications of Laws and Policy

To provide an impression about Bangladesh's existing policy action plan, first, I will explore some points of the 'Pandemic Act' that play an effective role in our laws and policy. In the 1973 amendment of *The Epidemic Disease Act, 1897*, it was affirmed that the government should be responsible for everyone. Government should take action to prevent any contagious epidemic and they have responsibility for measuring the scale of an epidemic. If the officers responsible for enforcing the legislation think it reasonable, in this regard, they can prevent anyone suspected of contracting the disease from boarding the railway or public transport, or they can even set them aside in a hospital or any defined specific place.[12] In 2018, the Bangladesh Government launched the

[12]*Communicable Diseases Prevention, Control and Elimination Bill, 2018*. Law of Bangladesh. People's Republic of Bangladesh, Penal Code 1880, Act No. 45.

Communicable Diseases Prevention, Control and Elimination Bill, 2018. Article 3(k) of the act clearly states "keep or quarantine any suspected person infected with an infectious disease, at a specific hospital, temporary hospital, establishment or home."[13] This bill has been formulated with two goals and objectives: The first is to take necessary measures to protect the public from infectious communicable diseases; and the second is to create awareness among the population about infectious diseases caused by germs. In particular, the bill proposed creating special awareness about *Kala Jor* (Black fever), HIV, Nipah, Ebola, typhoid, etc. Article 26 also includes an alert about the falsification of information regarding the consequences of the outbreak. It states that, if someone gives false and misleading information about the infection, or gives misleading information while knowing the correct evidence about it, then it will be treated as a crime, which is a punishable offense. Again, if any part of the country is severely affected, then the area should be separated from everywhere else, even though this will interfere with transportation and living a normal everyday life. An expert will visit the area and, following the inspection, victims will be allowed to maintain home-quarantine in their respective areas.

It is the moral and legal duty of a citizen to abide by the instructions and responsibilities declared by the government to protect non-infected people from being infected with COVID-19. The implications of the act and guidelines concerned with this infectious disease include some significant indications, which are obliged to be followed by all people concerned. They are: (1) Safety and hygiene precautions must be followed; (2) All those who are healthy [non-infected], as well as those who are already infected, have been instructed to adhere to "social distancing" or "self-isolation"; and (3) Home-quarantine must be maintained. Each of the above precautions has been given important equivalent to a legal instruction, but are not considered equivalent to negligence, which is a tantamount to disobeying the Penal Code 1880.[14] Those who do not comply with the recommended restrictions will be treated as super-spreaders. Section 269 of 1860 panel code states that, when infectious diseases take the form of an epidemic, and someone's negligence makes the epidemic more critical at a given moment, which is dangerous for human life, he or she should be punished.

The steps taken by the Government of Bangladesh regarding COVID-19 are based mainly on the provisions of the *Communicable Diseases Prevention, Control and Elimination Bill, 2018*. An important aspect of the government's sincere efforts was to prepare a working paper on March 5, 2020 at the initiative of the Ministry of Health and Family Welfare. The prepared report title is: "National Preparedness and Response Plan for COVID-19, Bangladesh"; from the title of the working paper, we can understand aspects of the preparedness process taken by the government. The different articles of the act establishes two steps and the implications to the application of the law on infectious diseases: (i) Stopping the transmission of the contagious microorganism, and (ii) Strengthening the prevention of and imposing restrictions on, as well as protecting individuals and people from infection. To do so, the government needs to identify those who have been affected and place them under quarantine. The second step is to maintain social-distancing or self-isolation for those who are still healthy and non-infected.

This raises an important question: What is the problem with the policy paper launched by the Government of Bangladesh Health Ministry and Family Welfare? First, it is quite difficult to regard this paper as a policy paper; rather, it is a working paper with several drawbacks. In general, it can be termed a *so-called interim working paper* for recovery from an emergency situation. Witnessing the spread and dynamic nature of COVID-19, however, there is also a need to address future procrastination. If we do not keep in mind the adverse effect of the COVID-19 in terms of health impacts, economic impacts and social impacts all these efforts would become ineffective in many ways. These issues are overlooked in this policy paper, resulting in some serious flaws and limitations.

First, reading through the policy paper, we find that there is a lack of accommodation made for the affected person's interests and willingness to face the situation; second, what would be the role and duty of the healthcare agency, which has been assigned responsibility by the state; and third, when necessary, how will opportunities and essential medicines be allocated among pandemic victims? Along with infectious disease remedial strategies, there is also the issue of the impartial distribution of scarce medical support, including medicines and equipment, irrespective of tribe, religion, color, and social status. This last issue concerns the proposed committee called the "The National Committee for Prevention and Control of COVID-19",which was formulated in Index-3 of the policy paper. The committee will play a specific role by measuring the realities and risks of the pandemic disaster. Examining the various sections and announcements of the report, however, it appears that this committee intends to solve the problem posed by COVID-19 only by examining the victims of COVID-19, and quarantining them. To make a policy workable, it is necessary to form a committee consisting of competent experts. The role of UNESCO, the international organization in which we have placed our trust, is to look after the ethical, legal, scientific, and social issues of this problem.[15] Additionally, as policy experts Weimer and Vining[16] point out, all policies must contain the core values of a particular region. In many cases, ethical dilemmas or value conflicts need to be addressed. To solve the legal, core value, and ethical problems arising in the decision-making process, competent moral judges are required.

[13] *Communicable Diseases Prevention, Control and Elimination Bill, 2018*. Article 3(k).

[14] *Communicable Diseases Prevention, Control and Elimination Bill, 2018*. *op.cit*. note 12.

[15] UNESCO. (2017). Declaration of Bioethics, Human Genome and Rights, Article 19: (a), (b). Retrieved March 20, 2020, from https://en.unesco.org/themes/ethics-science-and-technology/human-genome-and-human-rights.

[16] Weimer, D., & Vining, A.R. (2011). *Policy Analysis: Concepts and Practice*. Upper Saddle River. NJ: Prentice Hall.

Policy expert and thinker John Rawls[17] claims that judges bear some of these required traits, which include normal intelligence, capacity to "reason", reasonable knowledge of world affairs, etc. At the same time, judges must have an imaginative appreciation of the predicaments of other individuals. In a collective sense, all these things imply establishing a committee that will incorporate these traits and play the role of a competent judge. According to the working paper, the committee is made up of 26 members, including the heads of various organizations and high-ranking government officials. The committee formed by the Ministry of Health and Family Welfare did not follow any specific procedures and norms, but adopted those of any well-established internationally recognized committee. Public policy procedures are formulated in different countries globally following these rules. For example, the Nolan Committee of the United Kingdom is one of the most important examples of a government advisory committee,yet it does not include any ethics experts, culture and religious experts, or legal and judiciary experts co-opted in the committee. Mind this in mind, the makeup and effectiveness of the COVID-19 committee of Bangladesh is questionable.

Second, the current policy paper lacks two elements: (1) the opportunity to learn about strategies and lessons from how the most infected countries (such as China, Italy, France and the USA)[18] have responded to the pandemic outbreak; and (2) the inclusion of global preparedness responses which can play an important role in mitigating the pandemic situation.[19] At least three important issues need to be considered to formulate a viable pandemic policy,[20] but the policy paper emphasizes only a single component, which is maintaining accurate statistics of the number of local areas infected and their subsequent recovery. It also proposes to identify the affected people at the local level, providing them with necessary assistance, and keeping them in quarantine. However, the policy paper places less importance on the following two issues: first, identify foci of infection, and determine strategies to control them at a local level; and second, take immediate action to prevent a continuous chain of local transmission, as well as provide strategies to increase the active participation of the administration, healthcare workers, and local government to prevent the infection spreading from one place to another.

4.1.2 | Viable Pandemic Outbreak Policy

Education, exchange of information, and data creation are the foremost essence of a policy paper.[21] As we have found, there are no preparedness plans in Bangladesh's emergency policy paper. It also fails to emphasize several other important issues; in particular, the duration of pandemic outbreaks, and their dimensional fluctuations, intensity, and peak and fall. There are no guidelines for when local service workers, healthcare providers, and the administration should take action. It is important to include prior knowledge and research in a pandemic outbreak and its technique of remedy. Therefore, this tier will demonstrate how to form guidelines by including the following elements in the policy model:

Coordination. During a pandemic outbreak, the World Health Organization (WHO) recommends that coordination and communication[22] with local people and different local organizations can play a fruitful role to control the outbreak. Coordination arrangements need to be simple and affordable, limited to local healthcare, social interaction and daily life necessities.

Structural development. Both non-pharmaceutical and pharmaceutical structural skills can play roles in dealing with pandemic outbreaks. These two skills are associated with effective local government healthcare structures. In the case of non-pharmaceutical remedies, it is important to motivate people and raise awareness among them. To activate non-pharmaceutical activities, local government authorities require smooth and easy communication with the public. In the light of the experiences of several countries to disease outbreaks, WHO proposes five essential practices at the administrative level for effective outbreak communication: (1) build trust, (2) announce early, (3) be transparent, (4) respect public concerns, and (5) plan in advance.[23] People should be informed as early as possible about the whole situation of a pandemic outbreak. In addition, authorities need to gain the people's confidence and maintain transparency in their ongoing work. In formulating an accurate action plan, people's opinion and knowledge must be included. Conversely, authorities need to keep a close eye on the pharmaceutical options. Because an effective vaccine or medication has yet to be discovered for COVID-19, a "search committee" consisting of tactical and skilled virologists, physicians, and biologists should be set up to continue the investigation.

Remedies and containment. Remedies and containment measures should be included in the policy. To implement this goal effectively, local-level administration and care facilities in different hospitals and healthcare services need improved management and governance. Compared with the experiences of the developed world, Bangladesh's COVID-19 policy needs to focus on three important issues: (1) pandemic web-reporting systems, (2) rapid test technology, and (3) Integrated Disease Surveillance and Response (IDSR).

4.2 | Implication of the Tier II

The novel pathogen COVID-19 has the ability to infect easily, with high rates of morbidity, mortality, and hospitalization. Because it is

[17]Rawls, J. (2005). *Political Liberalism*. New York: Columbia University Press.

[18]It should be noted that Brazil and Russia now are second and third, respectively, to the USA in terms of COVID-19 case numbers.

[19]Fineberg, H.V. (2014). Pandemic Preparedness and Response—Lessons from the H1N1 Influenza of 2009. *N Engl J Med*. 370:1335–1342.

[20]USA Pandemic Response Plan (2020, March). United States Department of Energy Headquarters Pandemic Response Plan. Retrieved April 25, 2020, from https://www.energy.gov/sites/prod/files/2020/03/f72/EXEC-2020-001086%20Approved%20Pandemic%20Response%20Plan.pdf.

[21]Suk, J. (2007). Sound Science and The New International Health Regulations. *Global Health Governance*. Vol. 1, No. 2. Retrieved April 20, 2020, from http://www.ghgj.org.

[22]WHO. (2005). WHO Guidelines for Communicating with the Public During an Outbreak, WHO: Geneva. Retrieved March 30, 2020 from http://www.who.int/csr/resources/publications/WHO_CDS_2005_32web.pdf.

[23]Ibid.

not possible for any one state to deal with the situation arising from this infection alone, international knowledge and remedial strategies must be shared. This is the reason why Tier II concerns itself with how to deal with a pandemic outbreak situation. Because the disease has spread internationally, this tier deals with the COVID-19 outbreak in terms of the cooperation and understanding of the international community. It is therefore necessary to formulate a policy in coordination with the universal declaration.

We know that any policy goes through at least three stages. The first stage is to provide adequate knowledge about the actual infected people and the source of the vector. In addition to providing information about the severity of the disease, it is also imperative to make people aware of the disease's devastating consequences. At the same time, the committee should issue a clear and concise clarification about the epidemic situation—how harmful and frightening this disease is for both infectious and non-infectious people. The work of the first stage will end here. The second stage of the policy procedure is to introduce mass self-awareness, public awareness, and responsibility toward others. In this stage, the responsibility is not only just to provide information about infectious diseases, but also to create the opportunity to provide adequate medication for the infected person. The third stage requires maintaining techniques that: (i) identifying vulnerability, (ii) determining a way to strengthen pandemic resilience, and (iii) harnessing public perception for treating the situation in a participatory way.

First, the extent of intensity to which vulnerable people and places are harmed by pandemic outbreak should be determined. Before considering this, however, the policymaker should consider "vulnerability" as multidimensional. There are numerous issues associated with vulnerability in any disaster, including a pandemic outbreak. We can consider these issues from two aspects: one is to determine the vulnerability indicator; the other is to identify vulnerable groups. By being aware of the issues associated with vulnerability, we understand how to deal with the emerging adversity of an outbreak, how to resist it, and how to overcome it. The issues associated with vulnerability in a pandemic disaster include social, political, economic, health, and psychological issues. When formulating a policy, all these aspects deserve consideration, along with the priority tasks. In fact, virtually everyone affected by the pandemic outbreak is vulnerable and thus deserves to receive priority attention. According to healthcare professionals, the term "vulnerable" populations is understood as those who are "physiologically vulnerable because of their age and/or physical and mental health conditions, such as children, the elderly, pregnant women, and people with disabilities."[24] Due to physiological disability, a person's capacity has been disrupted for either a long or short period of time; they may fail to meet their needs such as food and shelter, and they are unable to access healthcare. Therefore, they deserve to receive special priority. However, it is also important to consider those who are treated as vulnerable (least-advantaged) when formulating policy.

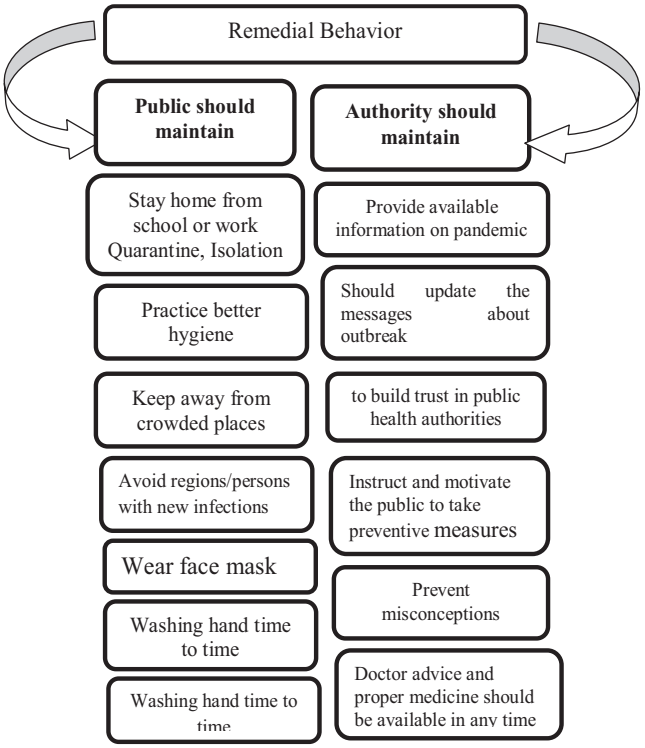


FIGURE 2 Remedial behavior

In any action plan, "vulnerability" is the measure of one's potential loss from a (pandemic) hazard.[25]A core strategy of a pandemic policy should be identifying vulnerabilities as part of the action plan. Most policy exponents[26] hold the view that identifying vulnerability as part of the policy should determine who will get more opportunities in such a situation. Yet, the COVID-19 policy of Bangladesh does not include a clear statement about identifying vulnerabilities; it also does not suggest any initiative or plan for the vulnerable. Thus, the action plan proposed by Government of Bangladesh Ministry of Health & Family Welfare has failed to address two important issues. The first is to identify vulnerable populations and determine what they need. The number of members in this community is less than the total population. There also exists more risk of infection due to their disability and type of livelihood. The second is to establish fair considerations on the basis of which to provide aid and healthcare services to them. Rawls' difference principle[27] is a compatible moral justification for considering vulnerability within the overall pandemic situation. This principle states that, in a society where there is economic inequality, the least-advantaged communities will have an opportunity to receive special benefits for economic development. Here, we consider the vulnerable community as the least-advantaged population

[24]Koenig, K.L., & Schultz, C.H. (2010). *Disaster Medicine: Comprehensive Principles and Practices*. Cambridge: Cambridge University Press. p.13.

[25]Cannon, T., Twigg, J., & Rowell, J. (2003): Social Vulnerability, Sustainable Livelihoods and Disasters" Report to *DFID*; Chambers, R. (1989). Editorial Introduction: Vulnerability, Coping and Policy. In: *Vulnerability: How the Poor Cope*. *IDS Bulletin*. 20 (2).

[26]Koenig, & Schultz, *op. cit*. note 24.

[27]Rawls, J. (1972). *A Theory of Justice*. London: Oxford University Press.

TABLE 1 Objective of Resilience

Risk and panic	Back to normal [normalcy]
Move towards →	
The whole situation is at risk	To keep the people safe and secure
Chaos and mental turmoil in the minds of the people	To bring back the feeling of peace and comfort in the minds of the people
Fear of loss and damage [death of a loved one as a result of infection]	Prosperity and connectivity
Helplessness and dubious mentality in people	To make ourselves capable and prosperous
Despair	hopefulness

proposed by Rawls. By receiving this special benefit, the vulnerable population (and also those people recovering from the infection) can live like those people who are better-off in the society. During a forced lockdown, members of this community suffer the most and their lives are severely threatened by non-pharmaceutical actions such as lockdown, quarantine, or isolation. Useful plans for this population should be included in the pandemic policy, which is not a focus of the current policy paper.

Second, values and remedial behaviors need to be considered. To achieve the aforesaid objective, some precautionary attempts should be maintained in the time of a pandemic outbreak. If everybody upholds good intentions to comply with the preventive measures, the effects of the pandemic should turn out to be mild in the course of time. Some researchers[28] have also shown that, in fact, it is expedient to enforce an index list to follow in order to bring the pandemic situation under control.

Remedial behavior will serve as the first step in tackling the challenges of the pandemic outbreak. However, we can use the widely discussed "Disaster Resilience" as "Community Resilience" to deal with the pandemic outbreak.

Third, strengthening community resilience is the key to seek in the pandemic situation. Here, resilience means community resilience in the time of a pandemic disaster. The pandemic outbreak situation can be tackled through a concerted effort by representatives of all levels of society and the state. Community resilience should incorporate managing and controlling the pandemic outbreak, because it is only possible for a resilient community to deal with so many challenges at once in the event of a pandemic outbreak. Two important goals are achieved through resilience[29]:

(i) to reduce the risk with ease;
(ii) The intention of this component of second tier is to improve community resilience, mutual connectedness, cooperation and friendship.

If resilience can be implemented at the public level, the outbreak does not turn into a catastrophe. In the model, we use the term pandemic resilience as a complement to disaster resilience. For the reasons stated above, in a pandemic situation, it is important to have a pandemic resilience strategy among other intermediate policies. Because of this, the national committee requires various experts from different fields. This committee, as a representative of the Government, will make all urgent decisions and take steps that will serve as a kind of national collaboration. Above all, we should incorporate some imperative notions for strengthening resilience: (1) enhance resilient communities; (2) encourage dependency at the individual and social levels; (3) increase self-reliance and social–reliance; and (4) develop a support system at all levels of society, in terms of encouraging and creating incentives for health and community security. This underlines some important issues, including the need to encourage visualizing social cohesion through the practices of mutual interest groups, mutual self-help groups, and mutual neighborhoods.

This tier also requires ensuring people's moral values, psychological knowledge, and understanding the pandemic containment zones as the means to activate the legal system and implementation strategy. It is the state's responsibility to address the stigma and unreasonable fears of people, as well as to meet their mental and other ancillary needs. If these three phases are fully accomplished, the policy as a whole will be able to play an effective role. With this in mind, if we look at the report issued by the Government of Bangladesh Department of Health and Family Welfare, it would seem that the entire policy paper is exhausted by the end of the first phase. As narrated in the executive summary:

> "In case of quarantine specially during community quarantine, measures will be taken to ensure basic needs of the people and security of property of people in general and the care givers through active involvement of the law enforcing agency. Sufficient budget allocation along with political commitment from the highest level will be of paramount importance for successful implementation of the plan".[30]

[28]European Centre for Disease Prevention and Control. (2009). Daily Update 2009 influenza A (H1N1) pandemic. Retrieved January 12, 2020, from https://www.ecdc.europa.eu/en/seasonal-influenza/2009-influenza-h1n1/threat-reports; Raude, J. & Setbon, M. (2009). Lay Perceptions of the Pandemic Influenza Threat. *Eur Journal Epidemiology*. 24 (7):339-42.

[29]Cimellaro, G.P., Reinhorn, A.M., & Bruneau, M. (2010). Framework for Analytical Quantification of Disaster Resilience. *Engineering Structures*. 32, 3639-3649.

[30]NG COVID-19, *op.cit*. note 2.

While the whole report does emphasize the importance of biological damage resulting from the disease and the need to restrict infected people through quarantine, it fails to address three important issues.

First, infectious disease causes fear or stigma. Gray and Ropeik[31] claim that, without clear and reliable information, the unknown risks of infection can exacerbate stigmatization and create undue alarm. For example, a widespread fear of influenza does not exist in our society, because it can be cured with general medicine and by taking precautionary care. Like the rest of the world, Bangladesh is facing a new experience with the COVID-19 virus. So far, there are not enough kits available for testing people, and treatment is still a very distant hope. So, it is normal for such an infectious disease to carry a stigma. In February 2020, Adam Kucharski[32], a virologist, claimed that, like other parts of the globe, the situation of COVID-19 in Bangladesh has also become a frightening condition among the people because of this stigma. This stigma is manifesting itself in different ways. Infectious diseases have a variety of psychological effects. If we are not aware of these effects, then its consequences will inevitably result in chaos in the public sphere that are readily noticeable.

a. Due to stigma, healthcare does not work well. It can be said that stigma itself creates an obstacle to making this service smooth and dynamic. People who are stigmatized are always distrustful of the health authorities, and look at them with doubt and suspicion.
b. Many studies on stigma[33] have shown that, in the context of a pandemic, the community creates a confused public perception of the risks involved. This, in turn, creates mass panic among citizens. Therefore, in the case of pandemic management, it is important to deal with psychological fears and panic about the disease. However, the working paper did not provide any basic ideas or guidelines for the management of the public's fears and panic.

4.3 | Implication of the Tier III

In most cases, unless a critical approach is taken in our policy and decision-making processes, foreign thinking and culture tend to dominate because they are what is heard and seen first. Tier III enhances the decision-making process to incorporate localized values to deal with problems that arise in Bangladesh and other countries on the Indian subcontinent. But, the government's policy paper has no specific criteria that can be applied to determine the effectiveness of the strategies implemented. They have not even made accommodation to verify either the accepted procedure or implemented strategies. The policies do not emphasize the bioethical model for response and they completely fail to encourage support for public protection and an ethical pandemic management system. The policy paper thus fails to take these into account, along with various bioethical strategies. While pursuing these goals, Tier III will investigate two aspects; (1) to develop a clear understanding, this tier will justify some of the bioethical challenges that Bangladesh faces in disaster situations, by identifying the relevant practices of bioethical policy in Bangladesh,[34] and (2) how the contributions and consequences of these bioethical policy examples compare to other mainstream policies in Asia.

However, a debate exists among policy experts about the form and nature of the policy paper. We can divide them into two groups. There are three strong points made by the first group of experts: (1) Ethical considerations should be given maximum consideration when formulating pandemic policy papers;[35] (2) Some say that preparedness policies are rife with ethical challenges,[36] a claim that reflects[37] Lynn's observation, "Policy analysis is contextualized craft, fueled by intuition and argument and ethical promptings, clearly associated"; (3) Normative values should be exercised, such as "saving one's life", "feelings of societal accountability", and "equal sharing of pain, harm, and cooperation".[38] These values, representing as they do the values of preserving and revering life, can contribute significantly in the context of bioethical problems. When developing a bioethical model regarding *PoDM*, the core value can be determined in the light of people's existing core values.

The contents included by the second group of experts are in the mainly associated with the normative trend. Here, we propose a normative approach with two operational functions: (1) Ethical priority and moral codes should apply in the case of a conflict situation; and (2) the rule of restitutive justice will play a role in recovery, or in the specific care of other living beings. We should not act in a morally unacceptable way by ignoring the risk that the danger of the pandemic has for living organisms. The focus of this plan is that the distribution of opportunities among victims of a pandemic outbreak should be made in a fair and equitable way. As a result, the pandemic outbreak will help us to understand at least a few things concerning people's interests, their rights, ways of distributing essential

[31]Gray, G.M., & Ropeik, D.P. (2002). Dealing with the Dangers of Fear: The Role of Risk Communication. Journal of *Health Affairs*. 21:106–16.

[32]Kucharski, A. (2020). The Rules of Contagion: Why Things Spread and Why they Stop. USA: Profile Books RRP.

[33]Barrett, R., & Brown, P.J. (2008). Stigma in the Time of Influenza: Social and Institutional Responses to Pandemic Emergencies. *Journal of infectious Diseases*. 197 (1).

[34]Bhuiyan, A.S.M. (March, 2012). Bioethics and the Challenges to Its Development in Bangladesh. *Eubios Journal of Asian and International Bioethics*. 24 (2). pp. 38-48.

[35]Kotalik, J. (2005). Preparing for an Influenza Pandemic: Ethical Issues. *Bioethics*. 19 (4) :422-3; Gilbon, N., Tanabe, T., Travers, D., Rosenau, A.M. (2012). Emergency Severity Index (ESI): A Triage Tool for Emergency Department Care. Implementation Handbook. Version 4. Agency for Healthcare Research and Qulaity. Retrieved March 20, 2020, from https://www.ahrq.gov/sites/default/files/wysiwyg/professionals/systems/hospital/esi/esihandbk.pdf; Upshur, R. E. (2002). Principles for the Justification of Public Health Intervention. *Can J Public Health*. 93:101-103.

[36]Gostin, L. O., & Hodge, J. G. (2007). Global Health Law, Ethics, and Policy. *Journal of Law, Medicine and Ethics*. *35*(4), 519-525; Lakoff, A. (2010). "Two Regimes of Global Health Humanity: An International Journal of Human Rights". *Humanitarianism, and Development*. 1:1, pp. 59-79.

[37]Lynn Jr. L. E. (1999). A Place at the Table: Policy Analysis, Its Postpositive Critics, and the Future of Practice. *Journal of Policy Analysis and Management*. Vol. 18 (4) (Summer), pp. 411-425.

[38]Hanna, K.E., Cook-Deegan, R.M., & Nishimi, R.Y. (1993). Finding a Forum for Bioethics in U.S. Public Policy. *Politics & Life Sciences*. 12, 205-19.

and scarce medicines and equipment, and the ethical implications of people's roles and obligations.

With the support of WHO, the Bangladesh Government's Disease Control Division Directorate General of Health Services recently launched another guideline in response to the COVID-19 epidemic outbreak, which is also a matter of reconsideration. This guideline has several positive aspects for the management of COVID-19 in respect to Bangladesh. At the end of the executive summary, it states:

> "To handle the pandemic strategy is containment, delay the peak of epidemic curve by diagnosis & treatment, and mitigation through various processes including non-therapeutic interventions are crucial."[39]

This guideline has been formulated as a supplement to the *National Guidelines Report COVID-19, 2020* announced earlier in the year. Here are some points of the guideline:

1. Complete lockdown has been mentioned,
2. Self-isolation has been given priority here as it is considered seriously in other states. In this policy paper, nine specific considerations have been given importance for managing the outbreak. The guideline's introduction enumerates a number of issues that point to it being an ethical guideline:

> "Patients should be managed in a hospital setting when possible; however, home care may be suitable for selected patients with mild illness unless there is concern about rapid deterioration or an inability to promptly return to hospital if necessary. If self-isolation at home is not possible because of lack of care giver, overcrowding at home or any other cause, the patient should be brought to the hospital for institutional isolation in a designated area."[40]

As a whole, however, the guideline deviates from its moral premise as promised in the pretext of introduction. We note their statement, "This raises many ethical questions on how to best triage patients to save the most lives. Recommendations have been suggested, but there is no international guidance on this issue as yet".[41] Is this claim a good basis for denying the international practices of the Triage model? Gilbon's *Emergency Severity Index* includes a triage tool which is customary to adhere to during the period of an emergency.[42] In addition, the Terms of Reference (ToR) of this guideline is worth examining. Two of the conditions of ToR of any guideline in a pandemic situation are: (1) inclusion of the triage process, and (2) introduction of fair rationing to manage resource scarcity. The Western world also follows these rules and processes in a pandemic situation.

4.3.1 | Triage Ethics: Care and Priority?

The foremost problem with the policy paper proposed by the Bangladesh government is that they have not adopted any formal care strategy. In the new model strategy, there are two parties: caregiver and care receiver. Both parties' interests need to be considered fully. It is important to increase healthcare early in the epidemic. To redesign the policy, it requires incorporating some new conditions. First, the people involved in healthcare should be involved in this care strategy. As a part of this, the caregiver's family members should be brought under the protection of safety, in terms of health and economic security. If they are not given this protection by the state, caregivers will be more concerned with their own family and health security rather than focusing on the healthcare of others.

The second level of service should be forming adequate healthcare-units for identified patients. As we have shown, both laws and guidelines have been given importance regarding quarantine. This may be a good arrangement for governing the epidemic situation but, in the quarantine situation, there is no consideration of what decisions should be made regarding the existing rights of the infected patient. Should those who are infected, as well as close family members of the patient, be quarantined? How will citizens' rights play a role in a social lockdown? Quarantine does not mean punitive measures; it should mean separating people for two purposes:

(i) Keep infected patients isolated from other people, so they will not spread the infection on a large-scale.
(ii) Consider the services needed to adequately address the daily necessities, health services and economic empowerment of infected patients.

Among others who are conducting research on disaster, Hick and O'Laughlin[43] and Christian[44] have specifically suggested the formation of a Triage Review Board (TRB) to address issues arising during the disaster period. A TRB helps to (1) set standards of care and (2) allocate scarce resources. Complex moral dilemmas will emerge during the disaster period, and the TRB will play a special role in resolving these dilemmas immediately. When making decisions, the board examines existing experiences,

[39]NG COVID-19, op.cit. note 2, Executive Summary: 6.

[40]Ibid.: 14.

[41]Ibid.: 14.

[42]Gilbon, N., Tanabe, T., Travers, D., Rosenau, A.M. (2012). Emergency Severity Index (ESI): A Triage Tool for Emergency Department Care. *Implementation Handbook.(4).*

[43]Hick, J.L., & O'Laughlin, D.T. (2006). Concept of Operations for Triage of Mechanical Ventilation in an Epidemic. *Academic Emergency Medicine.* 13: 223-229.

[44]Christian, M.D., Hawryluck, L., Wax, R.S., et al. (2006). Development of a triage protocol for critical care during an influenza pandemic. *Canadian Medical Association Journal.* 175: 1377-1381.

FIGURE 3 Ethics in Triage and Care[46]

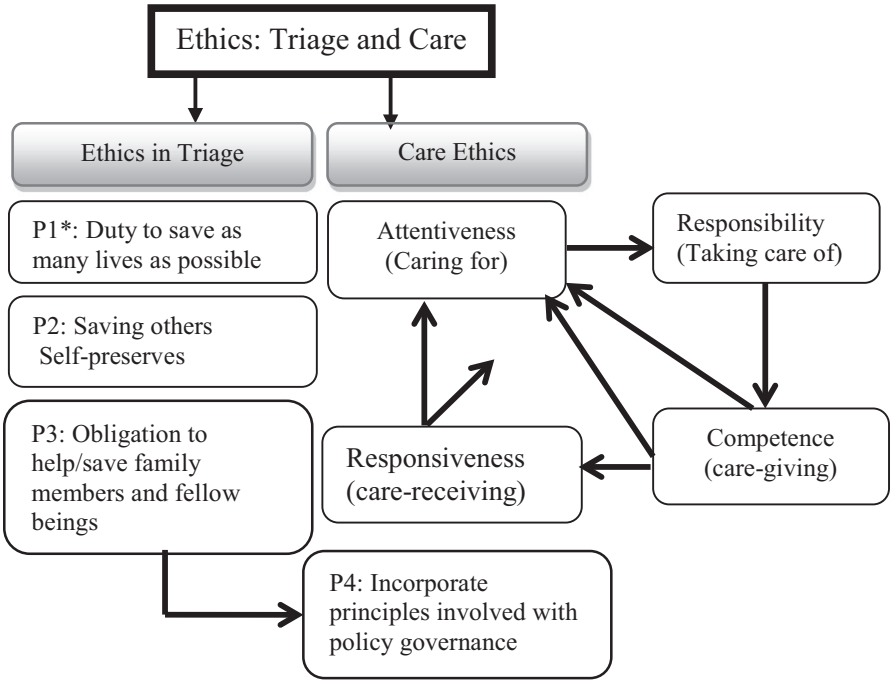
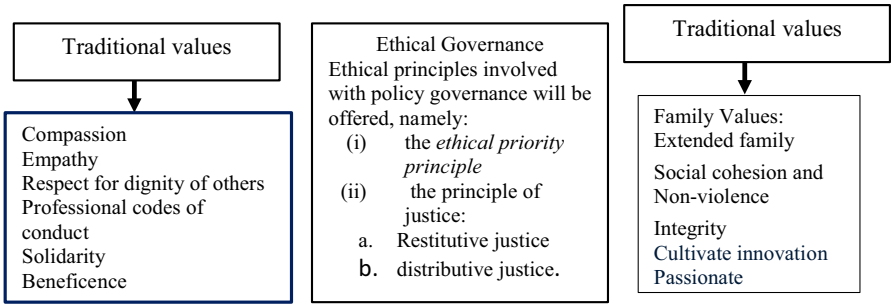


FIGURE 4 Core values of Bangladesh



situations, and complaints; corrects past errors; makes decisions in tandem with new situations; and considers community feedback as a source of information. During the disaster period, the TRB will take over as full-time supervisor and decision-making controller.

The ethics of the pandemic outbreak period, therefore, would be different from ethics in a normal situation. In fact, there will be a combination of two types of ethics: (1) Ethics in Triage, and (2) Moral Principles and Care Ethics (see Figure 3)[45].

Ethics in Triage will show how to protect one's own life, the lives of others, as well as how to follow the principles of equal distribution of medicines and necessary medical equipment. Simultaneously, this model incorporates the *Care Integrity Model*.[47] The four elements in this *Care Integrity Model* are attentiveness, responsibility, responsiveness, and competence. The middle ground is integrity: here, the term "integrity" means social solidarity, working together, and mutual cooperation. Only if the four elements come together and play their roles will social unity return. Integrity of care can play a very important role in the current pandemic outbreak. While we should be careful about the care of those who are infected with COVID-19, those who are infected should also be mindful of issues of social responsibility. The job of the state is to play a responsible role and provide care to citizens.

4.4 | Implication of the Tier IV

In this model, *Tier IV* can be considered as taking a reflective approach. This tier is influenced by the "Reflective Practitioner in Professional Education"[48], which has been applied to form a model for handling the pandemic outbreak situation. This tier will help to formulate our past knowledge with the experience gained from COVID-19. This experience can be acquired through applying shared knowledge in the cultural sphere at both the macro and micro levels. At the micro level, this tier seeks to combine self-reflection and

[45]In this flow chart, P is the short for 'Principle'.

[46]Here, in the Figure 4, care ethics is formulated according to Tronto's Care Integrity Model. See: Tronto, J. C. (1993). *Moral Boundaries: A Political Argument for an Ethic of Care*. Great Britain: Routledge; Tronto, J. C. (2013). *Caring Democracy: Markets, Equality, and Justice*. New York, USA: New York University Press.

[47]Tronto, *op.cit*. note 26.

[48]Lawrence-Wilkes, L., & Ashmore, L. (2014). *The Reflective Practitioner in Professional Education*. USA: Palgrave Macmillan. * In Figure 4, P is the short for 'principle'

collect reflective communications that should be effective at the macro level. The integration of the experience between the micro and macro levels can provide a technique for handling a future pandemic outbreak.

An effective policy should include details on the ways and means to restore our lives in the aftermath of the disease. This tier emphasizes how to apply the critical knowledge of contemporary biology, sociology, and pedagogy in conceptualizing a model. In addition, this tier provides instructions on how to rearrange society concerned with the pandemic outbreak, because the recovery process in the community will create complications. One of these complications is that the long-term persistence of a pandemic outbreak can raise doubts, suspicions, and psychological anxieties in people. It is not possible to maintain the harmony and solidarity of social and political institutions if there is such a mentality of suspicion. There is a moral duty in the family, society, and state spheres to restore mental and social well-being, taking all possible measures to avoid this circumstance.

Besides restoration, recovery is an important factor in *Tier IV* of the model. Recent studies have shown that we need to follow a number of restoration and recovery indicators to bring the post-disaster situation under the control of good governance. These indicators include measuring economic activity, creating employment opportunity in different sectors, and changing the spatial distribution of work activities at the local level. The type of recovery may also vary in different areas of the same state, depending on its location, cultural values, and geographical exposition.

Finally, the goal of *Tier IV* of the model is to show how the action plan can continue by adjusting and reintegrating the components of each tier. This tier is referred to as a reflective approach because it shows how much of the model has been implemented in accordance with the guidelines, or how it will be implemented in the future. In this tier, the term "reintegration" means that the pandemic plan measures will play an active role in bringing mobility to the post-pandemic state in the administrative, healthcare, social, and economic spheres, as well as to the service support system. Above all, the tier will help to adjust the proposed components in a revised reintegration of different tiers in the model.

Reintroducing Values. This section of *Tier IV* has shown that the core pandemic policy of Bangladesh does not include an option aimed at helping people to recognize how they should interact with the consequences of the aftermaths of disasters. In the light of the experience gained from the pandemic outbreak situation, our social and political values should be changed. For this purpose, *Tier IV* proposes reintroducing the common core values of Bangladesh. Our traditional values must be reawakened in our institutions, education system, and curriculum, by combining the existing values of our different religions and folk-life. This scheme can help to reintroduce the values of empathy, solidarity, and cooperation among people in dealing with any new calamity that may arise.

Forming part of the Indian subcontinent, the people of Bangladesh have a long history of values and norms that lie deep within our psyche, such as *do not harm others* (*ahimsa*, or non-violence), interdependence, interconnectedness, and passion. The emphasis of the action plan will be a *shared decision-making process*. Shared ethical values help us to come to moral understanding, and also helps in creating trends of good governance and social responsibility to the people.

Overall, the model aims for Bangladesh to follow a shared decision-making process in critical situations such as pandemic outbreaks, which will help to make the action plan a success. This model provides a more pragmatic tool for exercising normative values such as "saving one's life," "feelings of social accountability," and "sharing pain, harm, and cooperation equally." Because they represent the value of preserving and revering life, these values can contribute significantly in the context of disaster problems and bioethical problems. In developing a bioethical model regarding pandemic outbreak management, these core values can be examined in the light of existing religious values, as depicted in Figure 4 below. This provides a key tool in understanding the background of the model.

This tier has the goal of evaluating the steps taken in the previous tiers and, in addition, it requires the subtraction of the whole policy if necessary. We have to check thoroughly to see in which cases the whole policy has failed, and in which cases it has succeeded. We also have to work on those places where policy decisions have failed. This tier also suggests reviewing whether the policy would be a good plan to manage the situation with its remedial behavior. Therefore, strong objectives, surveillance procedures, community mitigations, maintenance of essential services, including pharmaceutical interventions, are essential to include here.

Figure 5 provides an overview of how *Tier-4* of the proposed model will work. The first step is to realize the previous experience from which to create new knowledge and techniques. This is achieved by building a self-reflection of what we have gained from past and present experiences. The second step requires understanding the following: (a) realizing the reality and (b) taking action to understand the context and problems of these circumstances. There are two notable ways to reconcile different relevant knowledge: reevaluation of prospective problems and restoration to adopt a policy or approach. At this stage, resilience in its full meaning should be activated in both the individual and collective spheres. Conversely, it is important to speed up the process for affected and at-risk people. Specially, rehabilitation needs to be provided, if necessary. The action plan should also enhance simultaneous services, such as economic, mental, and health services. The process of this tier, therefore, is to play a role at the following three levels:

Level 1: Understanding past and present experiences

Level 2: Using this understanding to build new knowledge, to deal with emerging situations more easily.

Level 3: Building a reflexive view of the entire problem.

There are several important things to consider before determining objectives for pandemic preparedness policy. First, it is necessary

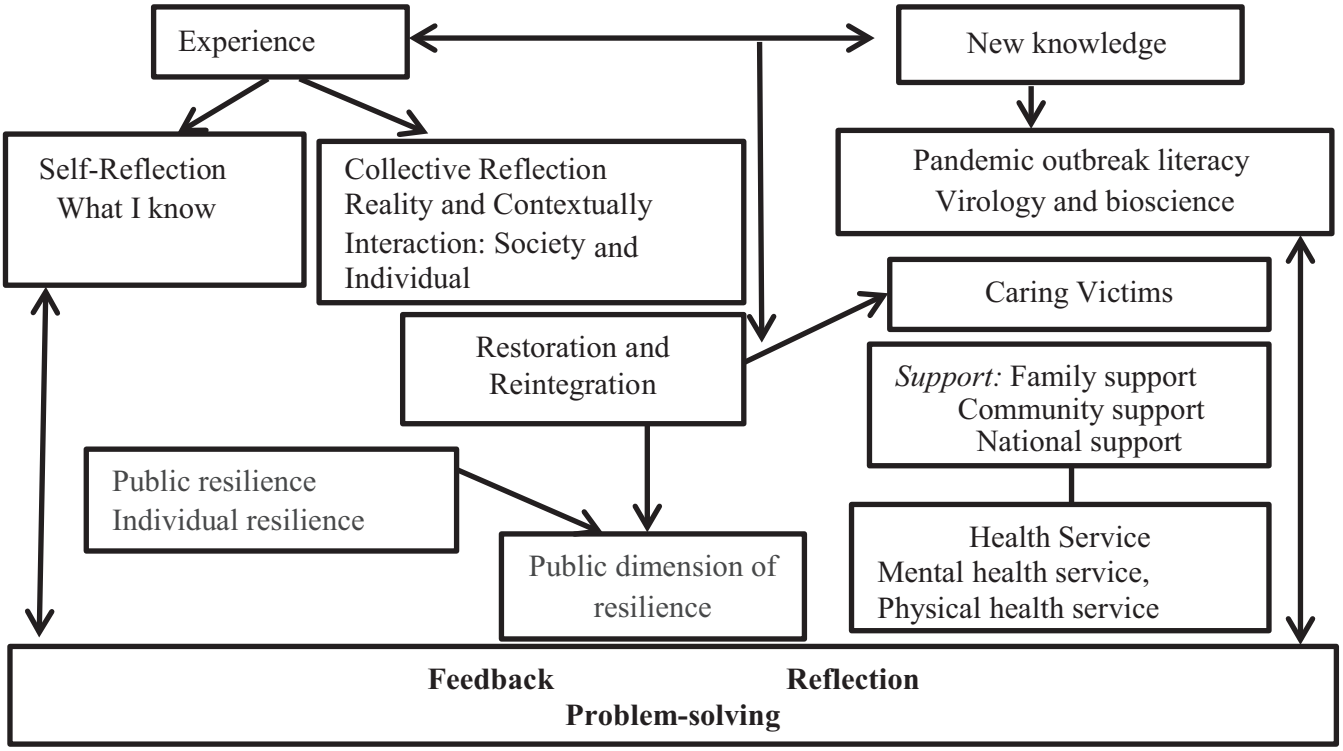
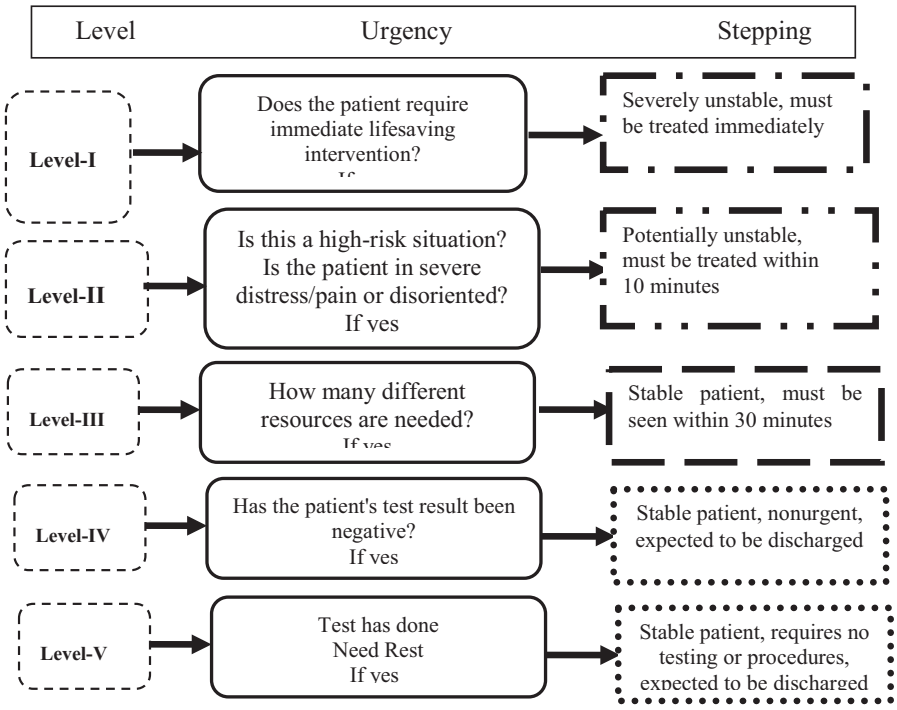


FIGURE 5 Reflective approach

FIGURE 6 Checklist and Action Plan



to identify the existing key knowledge gap for problems, and second, evaluate during inter-pandemic phases, and enact various protocols concerned with the pandemic outbreak.

There should be a checklist of the model. In the light of that checklist, it is possible to reconcile our whole agenda and action plan, as well as to be aware of what the future work will be regarding the issue. All in all, the checklist will act as a filter. It can be performed in the following manner (see Figure 6):

The proposed model is intended to provide seamless and appropriate assistance to recover from critical situations and to implement effective governance of pandemic outbreak situations. The purpose of this model is therefore to highlight the necessity

for a bioethical model to be offered at all levels of education and policy. It also incorporates local syncretistic values as an ethical toolkit. To achieve this goal, the proposed model will be able to direct us to adjust bioethical management in both Bangladesh and other countries using regulatory changes which stimulate the relevant technological changes.

5 | CONCLUSION

This discussion claims that Bangladesh has a long history of disease pandemics. Every year, Bangladesh faces many natural and human-made disasters, including pandemic outbreaks. It is a matter of frustration, however, that there are inadequate goods and preparation including a lack of expedient policy and strategy to tackle the pernicious consequences of the COVID-19 pandemic in Bangladesh. Bangladesh's adopted plan is not well designed. It does not even include mitigation techniques and measurements in line with the cultural context of Bangladesh. The suggested and adopted strategies, as incorporated in the policy paper, are incompatible with our existing facilities and available equipment.

Considering these problems, we propose taking a normative approach with its operational functions. Ethical priorities and moral codes should apply in the case of a conflict situation and include priority options. In particular, the rule of restitutive justice will play a role in recovery, or in the specific care of other living organisms. This requires that the plan follow bioethical principles, meaning we should not act in a morally unacceptable way by ignoring the risks that the danger poses for living organisms. Our plan stresses that opportunities should be distributed among victims of a pandemic disaster in a fair and equitable way. In terms of knowledge, mental models and personal experience will help to conceptualize the problems.

The proposed research work will be useful in various ways. It will assist Asian countries and academics to address problems in accordance with localized values and knowledge in facing the challenges arising from pandemic outbreak such as COVID-19, SARS, influenza and so on. It will also contribute to the achievement of adequate learning in relation to policy issues. It goes without saying that the learning and knowledge acquired through the proposed research will assist us to reach a new horizon of modern techniques appropriate to the scientific, social, and cultural issues that are related to policy formulation. Thus, the Four-Tier model will provide significant benefits in terms of knowledge and expertise which will provide opportunities to teach researchers, students, and policy experts. Hopefully, the model developed from this study will provide in-depth knowledge: at the same time, the research will be of value in developing academic capacity building within Bangladesh and other countries elsewhere.

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