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Analyzing The Restriction Of Mass Gatherings And School Closures/reopening In China And Iran During The Covid-19 Pandemic With A Public Health Ethics Framework

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Abstract:

The COVID-19 pandemic has undoubtedly elevated the status of public health. Concurrently, public health ethics has been brought to the forefront of the field and its practices in several ways. Over the past year, SARS-CoV-2 has affected nearly every country. In both high and low resource settings, policymakers turned to public health to ease the tension placed on health care systems by COVID-19. Governments implemented measures ranging from lockdown orders to mask mandates, all with the primary goal of curbing the spread of SARS-CoV-2. The effectiveness of these interventions has become a salient topic in public health research, and much epidemiological data has been published to inform ongoing responses to the pandemic. However, little attention has been given to the broader consequences of these policies. More specifically, ethics has rarely been considered in the development and evaluation of COVID-19 policies. Without the proper inclusion of ethics and human rights in public health responses, equitable outcomes cannot be guaranteed. This thesis aims to apply an ethical framework to analyze two types of COVID-19 policies: the restriction of mass gatherings and school closures/reopening. These measures were analyzed using a public health ethics framework to assess their effectiveness and outcomes as well as to facilitate comparisons between China and Iran, two countries with vastly different political structures and experiences during the pandemic. The analysis revealed that, while these policies were effective to some degree, neither policy was ethically justified in either China or Iran due to the unequal distribution of benefits and burdens across populations which has induced ramifications that extend beyond the current pandemic. These results demonstrate that public health officials and political leaders have an obligation to serve all populations and aspects of health especially during a public health crisis; controlling a pandemic itself does not ensure full health for all. Ethics should play an essential role in public health to avoid past mistakes and guarantee the right to health around the world.

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Contents:

Introduction:

In December of 2019, the world was introduced to the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that ultimately precipitated the COVID-19 pandemic. Soon, health care systems in many countries were overwhelmed by the rapidly increasing number of COVID-19 cases and deaths. With no viable treatment or vaccine available, governments turned to public health to restrain the virus's spread and preserve societal infrastructures and population health. Interventions ranged from quarantines to business closures, each with the purpose of reducing COVID-19 morbidity and mortality. However, despite the commonality of public health measures globally, the nuances of each policy differed.

As the world enters the second year of the COVID-19 pandemic, more research has been devoted to analyzing the responses to and effects of SARS-CoV-2 on communities. Over time, it has been understood that some policies have been more effective than others, and these results are essential in developing or modifying interventions to continue to combat the pandemic. At the same time, the exact effects of some policies remain elusive, emphasizing the need for further research and evaluative tools to guide successful pandemic responses in equitable ways.

Ethics can be a vital asset in public health and health policy. As described by the Global Network of WHO Collaborating Centres for Bioethics, ethics facilitates the study of tensions between conflicting choices and values in public health, amongst other disciplines, making it a powerful tool in policymaking and evaluation by strengthening the justification of certain policies (Global Network of WHO Collaborating Centres for Bioethics & World Health Organization, 2015). However, incorporating ethical considerations into policy requires a significant amount of time and effort, factors that are constrained during public health emergencies such as the COVID-19 pandemic. In these situations, decisions are often made quickly without the full consideration of their ethical and human rights implications, leading to

ineffective interventions and an inequitable distribution of harms (Barugahare et al., 2020). Applying ethics to retrospectively analyze COVID-19 policies can help countries to identify areas of success and failure within their responses to the pandemic and in other fields, such as social justice, to strengthen subsequent measures. However, the practice of ethical analysis has been sparse thus far. Although some literature has been published on the ethics of quarantine and lockdowns, there is little written on the ethics and human rights implications of other COVID-19 responses, especially on an international scale.

This thesis applies an ethical framework to analyze two types of COVID-19 policies: the restriction of mass gatherings and school closures/reopening. The selected framework will adopt a perspective based in public health to analyze the effectiveness and impact of these policies on communities in China and Iran. Comparing these two countries serves to deepen the understanding of how contextual factors, such as a country's political and cultural traditions, influence pandemic responses. Moreover, this paper will also act as an opportunity to assess the appropriateness of a public health framework in an ethical analysis of pandemic policies. Overall, the aim is to determine whether a policy was ethically justified and provide recommendations for future public health emergencies based on these findings. As the world continues to grapple with COVID-19, and will inevitably encounter other infectious diseases, it is necessary for ethics to take a central role in public health to produce beneficial and equitable health outcomes.

Review of the Current Literature:
The following section will summarize some of the prominent literature on the COVID-19 pandemic, its related policies, and the role of ethics in public health.

The infectious disease outbreaks in the past decades, such as the SARS epidemic in 2003 and the H1N1 influenza pandemic in 2009, have led to the publication of multiple documents

focusing on pandemic preparedness and responses. Some function as guidelines to inform decision-making in several areas, such as limiting individual rights, allocating scarce resources, and prioritizing vulnerable populations; by including ethics and human rights in these recommendations, it is hoped that responses to public health crises will be necessary, proportional, and equitable. For instance, the World Health Organization (WHO) created a document titled *Ethical considerations in developing a public health response to pandemic influenza* to equip nations in executing quarantines. Specific guidelines and key principles were described to ensure that quarantines would be implemented with the maximum amount of benefits plus minimal harms to those affected (*Ethical Considerations in Developing a Public Health Response to Pandemic Influenza*, 2007). Another notable document is *Stand on Guard for Thee*, a report written by the University of Toronto Joint Centre for Bioethics (R. E. G. Upshur et al., 2005). Using the SARS outbreak, the Pandemic Influenza Working Group composed an ethical guide for planning and decision-making prior to and/or during a pandemic with fifteen ethical values ranging from individual liberty to accountability to act as principles in pandemic responses within democratic societies (R. E. G. Upshur et al., 2005). The Siracusa Principles and the International Health Regulations (IHR) are also strong foundations upon which ethical documents and pandemic plans have been developed. Specifically, the Siracusa Principles detail the justification for governments to limit human rights and individual liberties to advance public health, continually emphasizing the relationship between public health and human rights (*The Siracusa Principles on the Limitation and Derogation Provisions in the International Covenant on Civil and Political Rights*, 1984). In contrast, the IHR is a legal framework that binds WHO member states to certain obligations while protecting human rights during public health crises (*International Health Regulations*, 2005). Together, these documents are the basis upon which

countries should structure their public health measures, particularly in times of emergencies, to sufficiently promote population health while upholding human rights.

The most common topic in ethics papers has been quarantine or lockdown orders. Multiple papers have been published well before the current pandemic on the justification of quarantines, their past usage, and important ethical considerations. Ross Upshur, for example, outlined two independent criteria to justify the use of quarantines during infectious disease outbreaks, stating that a quarantine must be both ethically justified and effective (R. Upshur, 2003). Additionally, the extent of a lockdown should be proportional to the present threat, while society, according to the principle of reciprocity, must provide for the needs of those sacrificing their individual freedoms to comply (R. Upshur, 2003). Along with human rights and legal considerations, these principles should be the criteria upon which to assess quarantines and other public health measures (Cetron & Landwirth, 2005). In the context of COVID-19, recent literature has focused on the tension between quarantines and individual liberties, analyzing whether broad lockdowns would be effective and just. As a result, much ethical analyses have studied the lockdown of Wuhan, China, to criticize and draw recommendations for other countries so that the value of individualism may be preserved (Raposo, 2020). However, the level of attention and depth to ethical tensions and its effects for public health within other COVID-19 policies has not been equivalent in the literature.

The restriction of mass gatherings has been frequently employed throughout the past year. Recent literature on this topic has emphasized the significance of mass gatherings in pandemic spread and control. For example, Ebrahim & Memish described the high risks that mass gatherings pose to viral transmission, underscoring the need to restrict such practices to contain COVID-19 (Ebrahim & Memish, 2020). Religious gatherings are particularly influential in

community transmission, as demonstrated by the outbreak in Qom, Iran, a region to which millions trekked to for pilgrimages at the start of the pandemic (Ebrahim & Memish, 2020). Additional papers thus underscore the dangers of continuing religious gatherings during the pandemic, and many public health departments have promptly called for suspensions of mass gatherings to reduce viral spread (Quadri, 2020). However, these measures have been problematic for some religious organizations, as physical gatherings are integral elements to their faiths (Quadri, 2020). Consequently, several religious leaders have chosen not to comply and even encouraged their followers to do the same, creating difficulties in pandemic control, a prevalent issue seen in many regions (Wildman et al., 2020). Although there have been many articles on these conflicts, few papers incorporate ethics into their discussions. One article, in an attempt to encourage compliance to public health mandates, has utilized religious ethics to highlight the principles of solidarity and the common good in the actions of religious groups (Alimi et al., 2020). However, a broader ethical analysis of the restriction of mass gatherings, using a framework, remains to be found.

School closures have also been a widespread public health measure during the COVID-19 pandemic. Approximately 1.2 billion students had their educations paused in response to SARS-CoV-2 at the start of the crisis (Silverman et al., 2020). Closing schools was an appropriate, precautionary measure then and was guided by past experiences and knowledge on other infectious diseases, such as influenza. However, as the year progressed, and studies began assessing the impact of school closures on COVID-19, results dissimilar from that of influenza were observed (Silverman et al., 2020). Interestingly, children younger than 18 years of age are less likely to be infected by the initial SARS-CoV-2 variant, and if a child is infected, then their symptoms are often absent or mild (Donohue & Miller, 2020). Likewise, increased transmission

or clusters of COVID-19 cases in a community are not usually linked to schools (Honein et al., 2021). Still, many schools remain hesitant to reopen, fearing the risk of infections among students and staff. To spur school reopening, researchers have begun to evaluate the effects of extended school closures on students' educations and well-beings. Overall, the absence of proper schooling carries broad and long-term consequences for a child's livelihood, including negative effects on future educational and employment opportunities as well as on mental and emotional health outcomes (Levinson et al., 2020). The lack of evidence-based guidelines in this area will only increase complacency and hesitancy in reopening schools, further harming students. Bringing ethics into analyses, a step that has not been widely taken, may identify essential factors that can improve future decisions regarding schools during infectious disease outbreaks.

Overall, the literature on the ethics of pandemic preparedness and COVID-19 is quite established and will certainly continue to expand. Nonetheless, ethical guidelines have not been commonly incorporated into countries' development and evaluation of COVID-19 policies, besides the assessment of quarantine and lockdown measures. The dearth in the application of ethics on other policies, such as the restriction of mass gatherings and school closures, demonstrates the need for this field to be further integrated into policy analysis to develop equitable and health-promoting responses in all areas of society.

Methodology:

The analysis for this thesis utilizes an ethical framework to evaluate two types of COVID-19 policies in China and Iran. Nancy Kass developed a public health framework in 2001 with the purpose of guiding public health professionals and decision-makers in considering the ethical implications of any public health program or policy (Kass, 2001). The process ultimately determines the effectiveness of a given public health intervention and identifies its related

consequences (i.e., the distribution of the benefits and burdens across a society). Six questions structure the framework and include:

1. *What are the public health goals of the proposed policy/program?*

    Kass states that for any public health intervention, the primary goal should be to reduce morbidity and mortality amongst a population. Thus, for the forthcoming analysis, the extent of the reduction in COVID-19 morbidity and mortality will be an indicator of a policy's effectiveness. Other types of outcomes can be included as well, such as social and economic results; however, the main goal must be related to health overall.

2. *How effective is the policy/program in achieving its stated goals?*

    To measure the effectiveness of a policy, available data should be assessed. Any assumptions upon which the policy was constructed should also be identified for a comprehensive evaluation. However, the presence of sound data and met assumptions are not sufficient in themselves to conclusively justify a policy

3. *What are the known or potential burdens of the policy/program?*

    Present or potential burdens must be identified, even if a policy or program is shown to be effective. These burdens can vary from infringements on individual liberties to targeting only certain groups with an intervention.

4. *Can burdens be minimized? Are there alternative approaches?*

    Steps should be taken to minimize the identified burdens as much as possible. This may require modifying the policy or program without compromising its effectiveness. Ultimately, based on available evidence and ethical recommendations, the least harmful intervention should be selected for use.

5. *Is the policy/program implemented fairly?*

   The principle of justice must be met in a public health program or policy, meaning the distribution of benefits and burdens from an intervention must be equal across all populations in a community. If one group is harmed to a greater degree, while another is benefited, then this can exacerbate existing inequities. Public health officials must ensure that inequalities are minimized in their actions.

6. *How can the benefits and burdens of a policy/program be fairly balanced?*

   In some situations, it is not possible to eliminate the identified burdens. It is important then to first determine whether the benefits of a program or policy outweigh its burdens. If they do not, then the net benefits should be maximized while acknowledging and communicating the potential of certain risks to the community. These decisions should be conducted among all members within a society to base the distribution of benefits and burdens on their own experiences and interpretations.

Policies in China and Iran surrounding the restriction of mass gatherings and school closures/reopening were analyzed using Kass's public health framework to determine whether they were ethically justified, based on their levels of effectiveness and outcomes. Specific policies were identified using the CoronaNet Public Data Dashboard. This database is a compendium of the policies enacted across 140 countries during the COVID-19 pandemic since January 1, 2020 (Cheng et al., 2020). Policies are provided with short descriptions and are further sorted into various categories such as the level of government response (e.g., national, regional, etc.), the targeted area or population, and the timing of each policy (Cheng et al., 2020). To facilitate the selection of policies, searches for scholarly reports and news articles were

conducted on PubMed, Google Scholar, and Google to grasp the extent of the available literature on a policy or region. Policies with a wide range of scholarly papers and news articles were chosen for analysis.

To start, the restriction of mass gatherings was evaluated for China and Iran following Kass's ethical framework, followed by an analysis of school closures and reopening for the two countries. Contextual information was gathered using news reports and academic articles to illustrate the surrounding circumstances. Additional reports and articles, such as epidemiological or ethical studies, were compiled to facilitate the analyses and comparisons. These documents were located through searches on Google, Google Scholar, and PubMed using a combination of key words such as "ethics," "mass gatherings," "school closures," "school reopening," "COVID-19," "China," and "Iran." Searches were refined to reflect certain themes that emerged in the literature, such as religious gatherings and the mental health of students. Additionally, official documents, of a national and international scope, were pulled from organizations and universities to understand past guidelines for pandemic preparedness and response, with some including ethical and human rights considerations; these served as a foundation for analyzing the selected policies and informing future recommendations. The results from each step in the framework ultimately led to the final conclusions at the end of this paper.

Analyses:
Restriction of Mass Gatherings
The restriction of mass gatherings was observed in both China and Iran at the start of the COVID-19 pandemic. Shenzhen, a city in the province of Guangdong, China, is one example of the orders seen in China targeting large gatherings. On January 24, 2020, a policy was enacted stating that "In the whole city, all crowd gathering activities must be stopped. The city's fairs, flower markets, assemblies, exhibitions, ceremonies, large-scale religious activities and other

mass cultural activities are cancelled" (Cheng et al., 2020). These cancellations also included celebrations for the Spring Festival holiday that occurred at the beginning of the year to minimize travel between regions (Cheng et al., 2020). As China resumed its normal operations later in the year, by gradually reopening businesses and schools, most mass gatherings remained restricted (Zanin et al., 2020). Similarly, Iran targeted its mass gatherings but with a larger focus on religious gatherings (Cheng et al., 2020). At first, authorities delayed the implementation of these restrictions due to political reasons and opposition from religious leaders ("Coronavirus," 2020b). Eventually, religious shrines, gatherings, and festivals were cancelled in mid-March of 2020 ("Coronavirus," 2020b). These cancellations were eased within a few months, allowing some religious gatherings to resume with several safety regulations in place, such as mask mandates (*Iran Struggles with COVID-19 in 2020*, 2020).

1. *What are the public health goals of the proposed policy/program?*
   Mass gatherings in general have a heightened risk of transmitting respiratory viruses, making them key targets for controlling outbreaks (Gostin et al., 2020; Rainey et al., 2016). When SARS-CoV-2 took hold of the world, many healthcare facilities became overwhelmed by the rapidly increasing number of patients and struggled to handle the crisis amid scarce resources and limited clinical knowledge. Thus, public health measures concentrated on social distancing to reduce human-to-human transmission, the primary mode of spread for SARS-CoV-2, and relieve the burden on healthcare systems (Islam et al., 2020). As the initial epicenter of the pandemic, China included the cancellation of mass gatherings in its series of social distancing measures to reduce contact between those infected and uninfected (Chen et al., 2020). Similarly, in response to the sudden rise in cases of COVID-19, strained hospitals, and limited supplies, Iran established several public health measures, such as the cessation of mass gatherings, to control the virus and reduce public fear (Salimi et al., 2020). The inclusion of the restriction of

mass gatherings in both countries was meant to curb viral transmission and assure the proper

treatment of COVID-19 patients to reduce morbidity and mortality rates. However, despite the

implicit public health goals within restricting mass gatherings, it can be debated as to whether

these were the central purposes for China and Iran, as will be explored later.

2. *How effective is the policy/program in achieving its stated goals?*
    If policies focusing on mass gatherings are implemented smartly, scientifically, and ethically,

then it is likely that a virus's spread can be curbed (Gostin et al., 2020). There are several factors

that may contribute to the effectiveness of these measures. When restriction of mass gatherings

have been conducted in combination with other physical distancing measures, such as school

closures and lockdowns, a reduction in COVID-19 incidence has been observed in different

contexts, including China and Iran (Islam et al., 2020). Moreover, the inclusion of mass

gatherings is associated with a greater reduction in COVID-19 incidence when compared to its

omission in a mix of public health interventions (Islam et al., 2020). The timing of the

restrictions is also an important factor; earlier implementations are correlated with more

beneficial outcomes in COVID-19 control (Islam et al., 2020). These facilitators can be

illustrated in the details of some countries' responses.

Although Wuhan was the epicenter of the outbreak, multiple steps were taken to mitigate

community transmission in other cities in China, such as Shenzhen. This included cancelling or

postponing gatherings and celebrations, closing schools, and sterilizing public transportation

(Zou et al., 2020). Utilizing the response system that the city and nation had established after the

2003 SARS outbreak, Shenzhen itself instituted the operations and resources for early detection,

isolation, and treatment of suspected and confirmed COVID-19 cases (Zou et al., 2020). While it

may be difficult to estimate the effect cancelling public gatherings alone may have had in China,

it is evident that the measure, in combination with the nation's public health responses, including

the lockdown of Wuhan, was effective in curbing COVID-19 cases and deaths. For example, by March 31, 2020, Shenzhen had 451 confirmed cases, and only 75 had been infected within the city; the rest were the result of infections outside of Shenzhen, mostly in the Hubei Province where Wuhan is located (Zou et al., 2020). China overall saw a significant reduction in COVID-19 cases since its initiation of pandemic responses, enough to begin easing restrictions within a couple of months (Zanin et al., 2020).

In contrast, Iran's experience with COVID-19 exemplifies the barriers to the effectiveness of restricting mass gatherings. Although the nation employed several non-pharmaceutical interventions, including cancelling religious gatherings, in the first few months of the COVID-19 pandemic, there has been limited long-term success (Blandenier et al., 2020). Restricting public gatherings requires certain levels of compliance and enforcement, as well as appropriate timing, to sufficiently mitigate viral spread, as demonstrated by China's actions. However, Iran's national government initially refused to impose restrictions at the start of the outbreak, out of concerns for the economic and political ramifications such measures may bring (Alaei & Alaei, 2020). Moreover, religious leaders have continually opposed these restrictions on their religious practices, even going so far as to encourage resistance among their followers; as a result, several religious groups maintained their meetings at religious shrines, despite strict orders from officials (Blandenier et al., 2020). Once interventions were in place though, COVID-19 transmission in Iran was reduced for a few months; however, these effects did not last, as restrictions were soon eased for religious gatherings to resume (*Double Standards in Reopening Religious Sites*, 2020; Salimi et al., 2020). Despite the early successes at the start of the pandemic, the delays in action and lack of continual, stringent measures may have brought about new waves of COVID-19 to Iran.

3. *What are the known or potential burdens of the policy/program?*

For many populations, physical gatherings are an important source of social networks and support. In some religions, congregating for regular meetings is an essential practice, providing a space for people to find comfort and encouragement in their faith and others (Dein et al., 2020). Socializing overall has been shown to be beneficial to health and can be protective during public health emergencies, when people are faced with imminent threats and high amounts of stress or anxiety. To restrict mass gatherings is to limit one's opportunity to connect and socialize and can contribute to negative emotional and mental health outcomes, such as experiences of loneliness and emotional detachment (Gostin et al., 2020). If these restrictions are lengthened, then there can be protracted risks for well-being.

The way a policy is enforced can create additional burdens for a community. As evidenced in Iran, the refusal to abstain from religious gatherings among some parties seemed to diminish the effectiveness of the policy and exacerbate COVID-19 outbreaks in the country, placing the public at a higher risk of harm. Given the prominent role religion serves in Iranian politics, many officials were reluctant to enforce the restrictions or impose stricter ones, thus placing the public at a higher risk of COVID-19 infection (Gholipour, 2020). Additionally, Iran has often disseminated ambiguous messages within their COVID-19 orders, and this, in combination with citizens' deepening distrust for the national government, may have affected policies' implementation; in the case of religious gatherings and its restrictions, some families continued to travel for religious festivities and viewed the orders as "recommendations," while others remained unaware of the policies (Blandenier et al., 2020; Gholipour, 2020). Irregularities in the enactment and enforcement of the policy in Iran may have ultimately imposed larger burdens on the population's health.

One of the most significant burdens and tensions within the restriction of mass gatherings is the limitation on the freedom of religion. According to the United Nations General Assembly, all peoples have the right to the freedom of religion, which includes the right to practice a belief individually or within a community (*OHCHR | International Standards on Freedom of Religion or Belief*, n.d.). For this reason, many have perceived these restrictions as an impingement on an essential human right. Furthermore, religion is an intrinsic component of many countries' culture and/or political system. For instance, in Iran, the executive, legislative, and judiciary bodies are comprised mainly of clergy (Blandenier et al., 2020). When religion is so tightly woven into a country's infrastructure, targeting this component, even for the purpose of public health, can have societal and political ramifications which may complicate pandemic control, as seen in the resistance of Iranian political officials and religious bodies to public health measures to preserve religious traditions (Gholipour, 2020). This relationship between public health and individual rights has been a common source of conflict globally for a while and may need additional consideration to uphold public health and preserve individual rights simultaneously in a just and balanced manner.

4. *Can burdens be minimized? Are there alternative approaches?*
   With the importance of physical gatherings for individuals' social networks and well-being, it is imperative that alternatives be provided to allow the continuation of these practices in a safe manner. One solution is to utilize the Internet and technology. For example, many churches and mosques, including those in China and Iran, have transitioned to online services to limit human-to-human interactions and provide live or taped recordings of their services, through mediums such as YouTube or Zoom, so that congregants may "gather" with loved ones, hear messages, and receive encouragement. Another alternative that may be suitable for areas with low levels of viral transmission is to permit gatherings with specific safety regulations. China, as it has

reopened, required temperature checks prior to citizens entering public spaces, whereas Iran ordered masks to be worn in religious centers (Reuters Staff, 2020a; Zanin et al., 2020). These regulations should be based on the most current scientific evidence and adjusted as new data emerges. Altogether, these alternatives can allow people to continue "gathering" with their social networks to relieve stress and anxiety with minimal risks to themselves and the public.

Even with alternatives, some may still view limitations on gatherings as a violation of their rights. Unfortunately, these restrictions are unavoidable in the context of COVID-19, given the considerable risk mass gatherings pose to public health. To minimize the severity of this burden, policies must be developed with clear and thorough messages to educate populations of their role in the enacted measure. Often, individuals can perceive orders cancelling mass gatherings as a significant burden unrelated to public health and themselves. Misconceptions and distrust towards decision-makers will only heighten people's non-compliance and exacerbate the pandemic's effects through actions such as continued physical gatherings and protests; such events have been seen around the world with multiple religious groups and have contributed to COVID-19 outbreaks. A recommendation for quarantine measures, often described in ethics papers, may be appropriate here. Reframing these limitations on individual liberties as a duty of easy rescue or an act of solidarity may boost levels of compliance and subsequently help control viral spread (Giubilini et al., 2018). An example can be found in how citizens in China value principles such as the common good and filial piety. During the COVID-19 pandemic, many communities complied to the public health measures implemented, including stricter ones such as lockdowns and cancellations of mass gatherings; several have noted that this level of obedience was most likely derived from citizens' understanding of each person's role in sacrificing individual liberties for the public's safety (Burki, 2020). These principles can be

applied to religious gatherings as well. Reforming obligations to public health as religious duties and communicating them through trusted religious leaders may help organizations accept restrictions on gatherings, perceive these limitations in a less severe manner, and increase their compliance.

5. *Is the policy/program implemented fairly?*
   Alternative solutions, such as online services, can minimize the identified burdens. However, it should not be assumed that all are able to thrive under the set restrictions and access other options equally. Some groups, particularly those living in poverty, the elderly, and the disabled, may have difficulty accessing or using technology and the Internet to participate in online gatherings. These complications can be obstacles in receiving social support and worsen emotional and mental distress. Additionally, not all religious organizations are equipped to transition to or provide streaming services, due to lack of finances, resources, and manpower. As a result, these groups may also be at a higher risk of harmful mental health outcomes. In these cases, accessibility and ability must be improved upon so that all individuals may secure needed social support in a time of crisis, and the risk of ill health may be minimized.

Policies restricting mass gatherings must also be implemented and enforced equally across all types of groups. No public health measure should be a means for political objectives. Within China and Iran, COVID-19 responses, while meant to target rising cases and deaths, unfortunately have become entangled in political affairs. Some are concerned that the Chinese government may be using its policy of restricting mass gatherings to target specific religions to advance its State Atheism policy (Dein et al., 2020). For example, some churches have been banned from publishing their services online, with officials citing recent outbreaks as a justification (K.P., 2021). Although authorities have offered to "guide" these congregations to identify other solutions under the restrictions, no alternatives have been provided thus far (K.P.,

2021). Individual families have been targeted as well. Some low-income households were told to renounce their faiths, such as by removing any religious symbols from their residences, and align with the Communist Party instead to receive their welfare benefits (Morris, 2020). Similarly, restrictions on religious gatherings have not been applied uniformly in Iran. The national government began removing its orders cancelling religious gatherings in May of 2020, allowing Muslim places of worship to reopen; however, other religious organizations were required to continue abiding by the previously set restrictions for several more months, with no legitimate reason provided (*Double Standards in Reopening Religious Sites*, 2020). Even after reopening, only several individuals at a time were allowed in those places of worship (*Double Standards in Reopening Religious Sites*, 2020). Inequitably enforcing public health measures, for political purposes, can not only aggravate pandemic control but will also violate human rights which may worsen health inequities and outcomes, such as mental health.

6. *How can the benefits and burdens of a policy/program be fairly balanced?*
   One way to balance the distribution of benefits and burdens is to prepare individuals and organizations for public health crises like COVID-19. This will require constant communication between authoritative figures, public health professionals, and all members of a community in a transparent, comprehensible manner. Through these partnerships, recommendations and guidelines, as well as alternatives, can be developed in the best interests of organizations and public health to be utilized during an emergency (Ebrahim & Memish, 2020). Consistent collaborations will also serve to educate communities of the risks of a public health crisis and the aspects of the corresponding policy, including the benefits and burdens along with individuals' respective duties. Increasing awareness and diminishing misperceptions may heighten the willingness of groups to refrain from physical gatherings for the purpose of the common good and strengthen the effectiveness of a public health policy. By involving an entire community in

the preparatory process, all may be equally aware and ready to face a public health emergency and comply with any stringent orders.

In line with the principle of reciprocity, governments have a special obligation in these situations. By banning physical gatherings, officials are requiring individuals to limit their rights and liberties for a period to protect public health; as a result, governments have a responsibility to minimize subsequent burdens and preserve rights, such as the right to religion, as best as possible (R. E. G. Upshur et al., 2005). Therefore, for groups in which gatherings and socialization are essential, perhaps for religious or health reasons, discussions and measures should be taken so that these practices can continue, albeit safely, through the provision of funds and resources. Reciprocity is especially critical for disadvantaged groups, as burdens may be greater in these cases. Special accommodations should be made so that lack of accessibility to resources, finances, and other options will not be burdensome issues. Finally, each act of assistance by the government should come at no additional cost to the individual beside their limited freedoms in complying with public health measures.

Lastly, the restriction of mass gatherings, along with any other public health measure, must be implemented and enforced independently of political motives. Rather, policies should be justified using public health principles and developed with the strongest and most current scientific findings to maximize beneficial health outcomes. As evidenced in China and Iran, using political purposes to drive the enactment of a policy will only undermine COVID-19 control, potentially increasing the risk of exposure and infection in impacted communities. Additionally, underlying prejudices in public health measures can result in stigma and discrimination, leading to negative health outcomes such as anxiety and stress. To develop public health interventions that are independent of political intents, continual discussions must be held

with representatives from each group in a society, so that community needs, public health, and human rights considerations may drive the establishment of equitable policies. Otherwise, skewed measures that favor or disregard certain groups will only fail the primary purpose of public health in promoting the health of all populations.

School Closures and Reopening

The following section explores policies in China and Iran that functioned to close and/or reopen schools. On January 27, 2020, Shanghai closed all levels of its schools, from nursery schools to universities (Cheng et al., 2020). When cases of COVID-19 began declining over the next few months, officials published orders for certain schools to reopen by April 27 (Cheng et al., 2020). Other schools were called to prepare and reopen by May 6 (Chan, 2020). In Iran, the national government closed colleges and universities in February of 2020, closures that lasted until the end of March (Cheng et al., 2020). Primary schools, on the other hand, were closed for six months, beginning in March. When the new school year commenced in September, the national government called for schools to reopen and students to return for in-person classes (Alavi, 2020).

1. *What are the public health goals of the proposed policy/program?*
   Not too long after the COVID-19 pandemic started, it became clear that several groups, such as the elderly and those with pre-existing conditions, were at a higher risk for severe outcomes. Thus, protecting this population became a priority for public health. Closing schools was one way to meet this goal, as they were assumed to be sites of high transmission and sources of community spread (Silverman et al., 2020). As a result, in many countries, including China and Iran, school closures were among the public health measures imposed by authorities to limit human-to-human interactions and reduce viral spread (Reuters Staff, 2020b; Viner et al., 2020). Overall, these policies were meant to decrease COVID-19 morbidity and mortality among

communities with a specific focus on vulnerable groups. These measures, if implemented

promptly and effectively to reduce community transmission, would also allow for the rapid

resumption of in-person schooling (Thomas & Watson, 2021). Although the dominant purpose

for reopening schools is to shorten disruptions to curriculums, COVID-19 prevention is still

underscored. With the appropriate guidelines, resources, and infrastructure in place, schools can

reopen with little risks of worsening the rates of COVID-19 morbidity and mortality in the

surrounding areas (Levinson et al., 2020). In general, schools have been a focus in pandemic

control to mitigate the transmission of SARS-CoV-2 and its consequences on some populations.

2. *How effective is the policy/program in achieving its stated goals?*
   School closures, in combination with other anti-contagion policies, have appeared to be

beneficial to pandemic control (Hsiang et al., 2020). However, the effects of school closures

alone are more difficult to parse out, complicated by the contrasting physiological reactions

between children and adults to SARS-CoV-2 along with the lack of or suppression of accurate

data in China and Iran ("Coronavirus," 2020a; Couzin-Frankel et al., 2020). In general, recent

research has revealed that children have been relatively unaffected by COVID-19, and if

infected, they are often asymptomatic, rarely experiencing severe outcomes (Silverman et al.,

2020). A study on pediatric cases of COVID-19 in China found that greater than 90% of patients

were asymptomatic, mild, or moderate cases (Dong et al., 2020). Although most children of all

ages are still susceptible to COVID-19, the study emphasized the reduced severity and

vulnerability of this age group in comparison to older populations (Dong et al., 2020).

Consequently, children have not been the main source of COVID-19 transmission; overall, the

event of a child spreading the virus to an adult is quite uncommon (Silverman et al., 2020).

Instead, most transmission and infections occur in the age group extending from adolescents to

the elderly (Silverman et al., 2020). School closures then may not be targeting the main sources

of transmission. Furthermore, one modelling study even observed higher mortality rates to be associated with closing schools, in the context of other social distancing measures; this may be a result of increased interactions among families at home, which includes vulnerable individuals such as the elderly (Rice et al., 2020). These results underscore the pertinent question of whether school closures, especially prolonged ones, are advantageous as COVID-19 responses.

With much ambiguity in the effect of school closures on COVID-19, many have also questioned the probability of schools reopening safely during a pandemic, concerned that resuming in-person classes will increase COVID-19 cases. However, several studies have reported the opposite effect: It is possible to reopen schools with minimal risks for the students, staff, and neighboring communities, so long as preventative resources and regulations are in place in all areas (Lee et al., 2020). Such results have been noted in multiple schools across different countries, such as China and Taiwan, demonstrating the promising outcomes school reopening can have for education amid a pandemic. Thus, as school closures and reopening may have varying effects on the current pandemic, additional factors in students' well-being and educations must be considered to sufficiently determine the overall impact these policies may have on public health.

3. *What are the known or potential burdens of the policy/program?*
   Despite being a routine public health measure, school closures can have a broad range of consequences for individuals' well-being. Sudden closures and disruptions to daily schooling can result in emotional or mental distress for students. Young children in particular may have a higher risk of anxiety and depression as they attempt to navigate unexpected changes in their lives (Silverman et al., 2020). Cancelling in-person classes also separates students from their close peers and contributes to experiences of loneliness, which can be further exacerbated by the presence of other social distancing measures (Silverman et al., 2020). A longitudinal study

conducted in China found that prolonged periods of isolation for students during COVID-19 was associated with increased reports of depressive symptoms and suicide ideation (Lei Zhang et al., 2020). Similarly, many students reported in a survey, conducted in Iran, that they missed their teachers and friends and were upset and confused by the extended school closures and lack of daily structure (Ranjbar et al., 2021). Even if classes are continued through Zoom or other online mediums, students may still experience heightened levels of stress in adjusting to the intricacies of remote learning and interactions.

While closing schools may serve to protect students from infectious diseases, prolonged times at home may not be ideal for all children. With irregular class schedules, many children may find themselves with more free time and increase their recreational screen time (Schmidt et al., 2020). For example, children in Iran were found to frequently choose mobile and computer games or television over spending time with family and friends during the pandemic (Ranjbar et al., 2021). These types of activities are concerning for a child's physical and mental health, as they can increase children's risk of obesity and depression (Stiglic & Viner, 2019). In addition, for some children, extended periods at home may increase their exposure to abuse. Both China and Iran have witnessed increases in cases of child abuse throughout the pandemic, with most incidents coming from families with economic or health issues ("Child Abuse on the Rise in Iran," 2020; H. Zhang, 2020). These incidents indicate the need to focus on children's safety and health outside of schools, especially when schooling is disrupted for extended periods of time.

Reopening schools can relieve several burdens of school closures. However, if policies guiding a reopening are not explicit and specific, then additional harms to students and their families can be created. Iran is a notable example of this. As the country approached the new school year last fall, they were met with mixed messages from the national government. At first,

official reports implied that returning to school for in-person courses was mandatory; later though, the education minister denied those statements but still maintained the importance of returning to school (Khoshhal, 2020b). Ultimately, the government passed the decision to parents, encouraging them to check with schools for information on reopening and class schedules. In spite of those recommendations, parents still could not access the necessary information, due to unresponsive calls and nonfunctioning websites (Khoshhal, 2020a). The fluctuations and unclarity in the government's orders have elicited much criticism, fear, and anxiety amongst students and their families. This turmoil came when many were already concerned about reopening schools in general, as the number of COVID-19 cases in Iran were still high; in the end, many parents chose to keep their children at home for remote learning (Khoshhal, 2020a). However, delaying students' return to in-person classes can also be detrimental to their educations and well-being, as will be discussed later. Overall, the lack of comprehensive decisions to reopen schools can augment the distress many students were already experiencing through school closures and the pandemic while also further deferring the resumption of normal curriculums. Both have adverse, long-term consequences for children.

4. *Can burdens be minimized? Are there alternative approaches?*
   If school closures are unavoidable and must be extended for a time, then students and their families should be equipped for schooling in their homes. Many schools globally, including those in China and Iran, have, in response to COVID-19 school closures, utilized services such as Zoom for students to continue their lessons online. However, not all were prepared for this transition, and some struggled with online courses, as a few types of lessons are not quite suitable for remote learning (Pak, 2020b). To further minimize these difficulties, schools should set in place trainings and information for students, families, and educators to reference at home, so that transitions to online mediums can be smooth to avoid more interruptions to teachings.

Additionally, as students will no longer be able to access certain services, such as social or psychological services, physically, then provisions should be made so that these services are still available from students' homes, such as through phone or Zoom calls. Such assistance must be maintained to protect children's mental health and should not be terminated when schools close, as has been seen in Iran and other countries (Rajabi, 2020).

On the other hand, there has been a significant debate over whether school closures are necessary for COVID-19 control and proportional to the risk children face. In general, there is an agreement that closing schools may not be an appropriate measure, as the harms to students and their educations are comparably greater. Disrupting in-person learning, even when technology acts as a substitute, can be detrimental to a child's long-term development and future opportunities (Silverman et al., 2020). To avoid or minimize those burdens, alternative solutions have been recommended, including partial school closures. Since younger children have a relatively smaller role in COVID-19 transmission but also suffer the largest burden of interrupted schooling, it may be appropriate to have primary schools remain open or reopen quickly, while leaving secondary schools closed and online to address the higher risk of COVID-19 infection among adolescents and adults (Silverman et al., 2020). Another option is to utilize the summer months to recover the loss of time during the school year (Silverman et al., 2020). Each alternative is based on the rationale that not all schools need to be shut down and can be reopened without affecting COVID-19 mitigation efforts, with the common example being Taiwan who has been able to control COVID-19 without any widespread school closures (Silverman et al., 2020).

As important as reopening schools is for students, it is also an event that produces much uncertainty and anxiety for families. To ease these stresses, detailed and transparent plans must

be developed and thoroughly disseminated, so that all students and families are aware and able to comply with the set regulations. In contrast to Iran, government officials took steps in assisting schools in Shanghai to reopen. For example, authorities listed specific guidelines for schools to meet to set up safe environments, such as requiring stockpiles of disinfectants, personal protective equipment (PPE), hand sanitizers, masks, etc. (Chow, 2020). The schools also established processes for detecting potential cases, viral testing, and quarantining, and initiated temperature checks by entrances (Chow, 2020). Additional adjustments were made to allow students to socialize with physical distancing. These included installing glass barriers on cafeteria tables, enacting mask mandates, and spacing apart desks (Chow, 2020). Finally, to ensure that students were aware of safe practices, posters were tacked onto walls illustrating ways to combat SARS-CoV-2 (Chow, 2020). With coordination between the government and schools to set appropriate guidelines and safety measures, school reopening in Shanghai and other areas in China was able to be implemented with minimal confusion, anxiety, and risk.

5. *Is the policy/program implemented fairly?*

It is important to note that some students are more affected by these policies targeting schools, compared to others. Students from low-income families may struggle especially with the sudden changes to their schooling. Their parents may not be available for childcare or may encounter difficulties in finding caregivers, due to work schedules and financial issues, concerns that have been commonly cited across countries (Lu et al., 2020). The lack of finances and resources can be a barrier to remote learning as well. Reports in Iran have described students living in poverty who have struggled to follow the nation's regulations for online classes, as they did not possess the means to comply; some struggled to obtain the proper technological tools while others struggled with Internet access (Gholamhosseinpour, 2020a). Consequently, these students were often forced to consider dropping out of school for lack of alternative solutions

(Gholamhosseinpour, 2020a). Similarly, some children in China have experienced unequal opportunities for schooling at home, as they must share one device for online courses with their siblings, with little money to purchase another (Pak, 2020a). These obstacles and inequalities in accessing courses and materials are significant risks to a student's mental and emotional health. There have been cases of students in China and Iran attempting or committing suicide after having faced such situations in which they have been unable to participate in their classes (Gholamhosseinpour, 2020b; Pak, 2020a). Furthermore, without improving opportunities for education, this group of students will struggle to maintain the same levels of academic achievement as their peers (Watson, 2021).

Even across age groups, the impacts of widespread school closures differ. Specifically, younger children, such as those in preschool or early primary levels, are more vulnerable to the effects of disrupted learning, since they are at a critical period for social, cognitive, and emotional development (Silverman et al., 2020). Although online modules have been present as alternatives, it is important to recognize that this age group does not respond as well to this medium as older students do (Silverman et al., 2020). The effects of these interruptions to early educations can permeate through adulthood and manifest in outcomes such as poorer performances in academics, lower graduation and employment rates, as well as a higher risk of hypertension, diabetes, and depression (Silverman et al., 2020). While school closures have mostly served the goal of protecting vulnerable populations during infectious disease outbreaks, it is essential to consider the impacts on younger students when developing such policies.

On a similar note, not all schools can respond in the same way to policies for school reopening, and this is particularly true for schools in low-income areas. Several schools in Iran have questioned the national government's calls for in-person schooling, questioning how

students can properly learn with social distancing in buildings that are already limited in capacity (Gholamhosseinpour, 2020a). These schools also have difficulties in purchasing the necessary resources for prevention and safety in addition to general supplies for classes (Gholamhosseinpour, 2020a). To mandate under-resourced schools to reopen may be to place students and staff at a high risk of COVID-19 infection. As a result, some schools in Iran have chosen not to reopen, and several families have opted to keep their children at home for online courses. However, not all families could afford to maintain the technology for remote learning, while the delivery of essential course materials to some households has often been delayed (Gholamhosseinpour, 2020a). These circumstances exacerbate the disadvantages that students already experience with remote courses; overall, those who participate in school from home are more likely to miss up to twice as many days of schooling, when compared to those attending classes physically (Watson, 2021). Strong guidelines and adequate provisions must be in place to guarantee that all schools are able to reopen for students to receive the educational benefits they have a right to.

6. *How can the benefits and burdens of a policy/program be fairly balanced?*
    Although COVID-19 has not significantly affected most children directly, the pandemic itself has the potential to become a child-rights crisis, since many aspects of children's livelihoods are impacted by pandemic responses (UNICEF, 2020). Education is a universal right for children, and many countries have included this right in their constitutions, including China and Iran; thus, governments have a strong obligation to protect this right during a public health crisis (Gholamhosseinpour, 2020a; *Right to Education*, 2013; Laney Zhang, 2016). Authorities must work to ensure that schools, staff, and students are prepared for any shifts to their education during an emergency. Detailed policies should be developed so that the nuances of school closures and reopening, including expectations for academic work and health regulations, may be

communicated to minimize confusion. Concurrently, the various needs and circumstances of students must be considered. Younger children and those living in poverty, among other groups, are ones who may respond differently to adjustments in schooling due to differences in cognitive function and access to vital materials. Steps must be taken to prioritize and accommodate these situations, through provision of funds, resources, or support, so that each are able to continue their classes comfortably. Ultimately, no child should be left without an education during a situation like COVID-19.

As the world encounters additional waves of COVID-19, the principles of necessity and proportionality must drive subsequent policies regarding school closures and reopening. With the characteristics of SARS-CoV-2 and its effect on the younger population, the necessity of closing schools to protect vulnerable populations and the proportionality of such a response are altered. In balancing the risks of COVID-19 transmission within schools to communities and the harms on students' education and development, it can be concluded that complete school closures are not proportional nor necessary for COVID-19 control. So, policies must be adjusted accordingly with recent evidence and considerations to maximize children's opportunities for schooling while maintaining public health. This may lead to prioritizing primary schools for continued in-person learning or opening all schools with social distancing measures and proper protective gear. At the same time, resuming in-person classes during a pandemic can be a stressful decision for many and should not be made mandatory. Instead, resources and assistance should be provided so that students at home may continue learning at levels close to their peers at school. Using necessity and proportionality as key principles in creating these policies will help to ensure that the benefits and burdens are equally distributed among all populations, including the ones least affected by the crisis at hand.

Discussion:

Summary of Findings

All in all, the measures enacted by authorities in China and Iran have been similar in their overarching purpose to contain COVID-19 among communities, yet, the application and effects differed, leading to varying ramifications for COVID-19 control and social justice between the two regions. Despite the focus on curbing viral transmission in these policies, other factors necessary for maintaining public health were often overlooked, including essential human rights, such as the right to the freedom of religion and education. Already, adverse outcomes, not just in the areas of health and wellness, have been observed, particularly among disadvantaged populations, and there is the potential for these effects to reverberate beyond the present public health emergency. The development and analysis of these policies, and subsequent versions, must be expanded to include these aspects.

As the pandemic passes its one-year anniversary, multiple studies and reports have been published on the impacts of these policies amongst others. For public health research, one of the primary goals has been to assess the effectiveness of restricting mass gatherings and school closures/reopening on COVID-19 cases and deaths. However, little attention has been paid to the ethical implications of the two measures. Thus, this thesis served to analyze these specific policies in the context of two countries with public health ethics. Using an ethical framework has allowed the nuances of these responses and their outcomes to be identified and raises interesting points of discussion for future pandemic interventions.

Religion has emerged as a prominent obstacle in restricting mass gatherings. For Iran, where religion is an integral part of its culture and politics, orders cancelling religious gatherings and festivities were often met with criticism and revolt. Consequently, religion acted as a formidable barrier in Iran's control of COVID-19. The fractured relationship between the national

government and the public further complicated efforts to enforce the regulations, and the combination of these factors may have contributed to the subsequent waves of COVID-19 seen in Iran. On the other hand, while China has been relatively successful in controlling its outbreaks, the perception of religion by the government has influenced its enforcement of these measures. It was found that officials have been using their authority to target and obstruct specific religions and their practices to advance some political motives rather than public health goals. Similar actions were observed in Iran in which the easing and strengthening of restrictions were applied unequally across religious groups. These events accentuate the continual debates over the association between public health and individual rights including the freedom of religion.

Although school closures were initially implemented to protect vulnerable groups from COVID-19, many underestimated the effect such policies would have on students. As the effectiveness of closing schools becomes less significant in pandemic control, the negative outcomes for children become more apparent. Within China and Iran, the cancellation of classes and the transition to remote learning have induced much mental and emotional distress for students, with many reporting issues with depression, insomnia, and loneliness. These effects though are more severe for a few populations, including younger children and those from low-income households. For these students, the burdens are worsened, due to their unique circumstances and level of development which influence their accessibility and responses to the new modes of learning. Overall, these harms can induce short- and long-term consequences in students' health and development. This stresses the role of governments in protecting children's right to an education and health by taking the necessary steps to address needs and barriers during a pandemic. While reopening schools may resolve some burdens, governments must still

play a central role in ensuring that all schools and families are prepared to return to classes safely. As seen in the two distinct cases of China and Iran, clear policies, communication, and resources between a government and schools are necessary to successfully resume in-person classes without affecting COVID-19 control. Otherwise, delaying school reopening, and further disrupting educations, will only magnify the harmful effects placed on children by the pandemic's disruptions to their daily lives.

Limitations

Since the focus of this paper was only on two types of policies in China and Iran, care should be taken to generalize these results to policies in other countries and populations. Although many countries utilized similar strategies in response to COVID-19, these cannot be directly compared to those used in China or Iran. In addition to the presence of other public health measures, the policies targeting mass gatherings and schools in these two countries were implemented in the unique contexts of each nation, which includes distinct political, economic, and cultural factors as well as different communities that may have ultimately augmented or mitigated the policies' effects. Given these differences, caution should be taken in extrapolating the results described here to other contexts, as the outcomes of public health interventions can differ across regions. Lastly, this paper focused on the first variant of SARS-CoV-2, and the findings may not be generalizable to the emerging variants; further attention and research should be taken to assess the implications of and modify recent COVID-19 policies in the context of these variants and their impacts on populations, such as school-aged children. Overall, future efforts should focus on analyzing pandemic responses from other regions to identify their effects on COVID-19 and population health and facilitate comparisons between countries.

Although one section of Kass's framework was devoted to assessing the effectiveness of public health measures, this thesis should not be taken as a complete report on the causal effects

of the restriction of mass gatherings and school closures/reopening. As both policies were implemented in concert with other interventions, it can be difficult to parse out accurate and specific data within China and Iran to estimate a single policy's effect on a population; thus, the analysis of the chosen policies' effectiveness remains limited in this paper. With data on COVID-19 continually expanding globally, quantitative analyses should be conducted in the future to estimate policies' exact impact on curbing COVID-19 in specific countries. Additional studies will also be needed to assess the association between these policies and the other burdens identified, such as mental health outcomes and poor academic achievements. Otherwise, without country-specific data and causal inferences, it cannot be definitively established that these policies truly caused the health outcomes described in each nation.

Kass's public health framework is not without its own limitations. Overall, it was able to demonstrate the broad influence a public health intervention can have on a community aside from its impact on the COVID-19 pandemic, such as negative mental health outcomes and interrupted educations. However, the framework did not seem to capture the influence of contextual factors, such as a country's culture or economic state. For instance, the common good is a valued principle among Chinese citizens, and many have credited it for increasing people's compliance which may have contributed to China's success in controlling COVID-19. Kass's framework though contains a more consequentialist approach in evaluating a policy's effectiveness, with its focus primarily on the health outcome of interest and its morbidity and mortality rates; as a result, little room was left to consider the contribution of cultural traditions. Similarly, Iran's economic situation has been fragile since the United States imposed economic sanctions in 2018. These circumstances may have crippled Iran's ability to respond to COVID-19 or impeded citizens' livelihoods during the pandemic. Again, as Kass's framework mostly

addressed the impact of a policy on public health rather than the role of surrounding circumstances, economic contexts among others were not adequately included in the analysis. To gain a better understanding of the full effect and justification of a health policy during the COVID-19 crisis, more frameworks may be necessary for a comprehensive analysis.

Conclusions

Evaluating two specific policies employed in China and Iran during the COVID-19 pandemic has revealed the extensive range of consequences that public health interventions can bring to a country. Interestingly, COVID-19 responses can protect communities from viral spread while also significantly impacting other aspects of individuals' lives, such as their social supports, education, and mental health. In making public health and pandemic control the primary goals of these policies, certain human rights and needs were overlooked. For China and Iran, this resulted in several populations, such as those in poverty, bearing heavy burdens with ramifications for social and health inequities. To promote public health during a global crisis, ethics must drive governments' development of health policies that will fulfill their obligation to protect societies and preserve human rights. In this way, health can be achievable for all populations.

All in all, neither policy in China nor Iran analyzed in this paper can be ethically justified. While these policies may have been effective to some degree in addressing COVID-19, their application and results have not been equitable, creating an unbalanced distribution of benefits and burdens. Disadvantaged groups have endured a heavier share of the burdens in their struggles to access needed resources to maintain their livelihoods during the pandemic, and these inequities may have hindered their rights to religion, education, and health. The transgression on these human rights does not fulfill the purpose of public health in promoting social justice and health for all, and as a result, diminishes the justification for these health policies.

This is not to say that mass gatherings and schools should not be targeted during a pandemic like COVID-19, as the two can have positive effects in infectious disease control. Nor is it to suggest that governments should not limit individual rights for public health, as restrictions may be unavoidable during a global emergency when the threat to communities is large. Instead, an ethical analysis of these two interventions demonstrates the need to reexamine the relationship between public health, policy, and individual rights. Namely, what is the responsibility of a government in upholding human rights when they have been limited for the purposes of public health? As has been made clear from applying Kass's framework, a pandemic response has the potential to produce a disproportionate distribution of benefits and burdens through its singular focus on infectious disease control. In the COVID-19 pandemic, this has meant that some communities have experienced limited opportunities to practice their religion or receive an education, two essential human rights and factors in health. As a result, many have suffered deleterious health outcomes, such as anxiety, depression, and suicide ideation. Governments and public health professionals then have the obligation to address this association between public health and human rights to contribute to healthy and equitable societies, with the principle of reciprocity as the foundation. In limiting certain rights for public health, reciprocity must be used to guarantee that alternative options and resources are provided for people to continue practicing their rights in some manner, without risks to others. Equity must also be considered, knowing that not all groups experience the same degree of benefits and risks. Thus, disadvantaged populations must be prioritized while policies must be derived strictly from scientific evidence and ethical considerations rather than political motives or prejudices. As human rights are essential to health, they must be preserved across all groups, regardless of status, as that is the purpose of public health—to address all factors contributing to health and wellness.

Recommendations and Future Steps

The application of an ethical framework to COVID-19 policies in China and Iran has highlighted specific facilitators and barriers to pandemic control and public health in general. As several regions of the world continue to wrestle with SARS-CoV-2, it is important to draw on recent successes and failures to inform and develop subsequent responses that are equitable and effective. Additionally, COVID-19 is most likely not the last infectious disease outbreak the world will experience; these results then should facilitate future pandemic preparedness plans and responses to avoid mistakes that are detrimental to public health.

To assure that all populations and needs are cared for during a public health emergency, the development of responses must involve a diverse range of perspectives. When mass gatherings and schools were targeted this past year, several aspects were overlooked, such as the importance of religion to some cultures and the unpreparedness of families for remote classes, leading to several detrimental health outcomes. Interdisciplinary collaborations can serve to avoid these oversights. By including experts from different fields (i.e., public health, policy, education), a variety of leaders (i.e., religious leaders), and community members (i.e., parents and students), more views and voices can be brought to the decision-making process for a pandemic response. Through these conversations, specific needs and rights will be more likely to be considered and addressed, and with multiple perspectives at hand, a diverse set of alternatives will be explored. Expanding these discussions to all members of society, which would include representatives from disadvantaged populations, will also improve policies to be more equitable in their implementation and outcomes. Such partnerships may increase the trust between authoritative figures and communities as well since there will be a higher level of transparency present in these decisions; strengthening trust may also help to bolster compliance to official orders later. In general, involving multiple viewpoints in pandemic preparedness plans and interventions can

help communities create public health measures that are comprehensive and beneficial to all, with minimal risks.

COVID-19 has demonstrated how infectious diseases are able to transcend geographic and political boundaries to infect multiple countries in a short amount of time. Solidarity then must be practiced, so that all regions of the world may partner together to combat a disease. Not all nations and populations are able to respond well, especially those in low-resource settings, and insufficient interventions in one area of the world will only affect the rest. The COVID-19 pandemic has shown how politics, national interests, and racism can divide communities and obstruct efforts for a unified, global response to SARS-CoV-2. The principle of solidarity calls for these sources of animosity to be put aside so that global health can be secured for every country and individual through the sharing of resources, knowledge, and manpower, both between and within regions. As health is a right for all populations, then all nations must work together to uphold that right.

Ethics has served a powerful role in this current analysis and past works by bringing considerations of human rights and equity into the evaluation of public health interventions. Therefore, ethics must continue to be included in COVID-19 plans as well as in public health and policy in general. As there is a close link between human rights and population health, ethics highlights the necessity of analyzing policies beyond their epidemiological and clinical impacts. Ultimately, within ethics, a measure cannot be fully justified unless all groups are equally benefited with the least number of burdens possible. At the same time, it is not enough to analyze policies with a public health framework alone, as multiple facilitators and barriers to health can be found in the surrounding contexts, such as in political infrastructures or cultural traditions, factors that are not readily recognized in a public health framework. Additional analyses on

COVID-19 policies should be performed using ethical frameworks from different disciplines and cultures to supplement these results. Overall, it is important that frameworks account for differences between countries and circumstances to provide a full understanding of the intricate factors and outcomes to public health measures. In this way, policies and evaluations can be tailored to specific contexts for more effective interventions.

Assessing the restriction of mass gatherings and school closures/reopening, two distinct and common types of COVID-19 policies, has made it clear that experiences and needs have differed across countries and communities. In the broader goal of mitigating the spread of COVID-19, some of these issues were forgotten, causing many to endure hardships to their health among other areas. So, while these two policies may have seemed effective in their primary goal, they cannot be deemed truly successful unless all affected populations are equally benefited and able to live well in these circumstances. The discipline of ethics can pinpoint the considerations that are needed for effective and just public health interventions, such as preserving human rights, and as the world shifts into a reality that will likely involve COVID-19 and other infectious diseases for a while, it is necessary for ethics to continue to be applied in developing and analyzing policies. With ethics as a fundamental tool, global health can be achieved and maintained across all nations even during a public health emergency.

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