PHILOSOPHICAL EXPLORATION

Religion, Islam, and Compliance with COVID-19 Best Practices

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Abstract
While many have implemented best practices intended to help stem the spread of COVID-19, there are also a substantial number of citizens, both domestically and abroad, who have resisted these practices. We argue that public health authorities, as well as scientific researchers and funders, should help address this resistance by putting greater effort into ascertaining how existing religious practices and beliefs align with COVID-19 guidelines. In particular, we contend that Euro-American scholars—who have often tended to implicitly favor secular and Christian worldviews—should put added focus on how Islamic commitments may (or may not) support COVID-19 best practices, including practices that extend beyond the domain of support for mental health.

Keywords COVID-19 · Ethics · Islam · Low and middle income countries · Public health · Religion · Scientists · Secularism

Introduction
The COVID-19 virus infection started in 2019 and has spread globally, leading to the announcement of a global pandemic on March 11, 2020 (World Health Organization [WHO], 2020a). During the COVID-19 pandemic there were recommendations for certain simple, yet important practices for public health protection (WHO, 2020b), including frequent handwashing, quarantine and vaccination. While some of

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these recommendations were adopted, noncompliance with best practices and preventive measures against COVID-19 has been reported worldwide.

A study by Stanford conducted in the spring of 2020 reported that approximately four in ten individuals in the US did not adhere to social distancing (Moore et al., 2020). In Italy, only half of 894 respondents were found to be fully compliant to six measures of social distancing (Briscese et al., 2020). Although Jordan had only one confirmed case of COVID-19 in March 2020, it found itself managing a larger outbreak after a wedding in which 76 out of 350 guests were infected (Yusef et al., 2020). Indeed, between the time of that wedding and the summer of 2021, Jordan reported a total of 779,530 cases and 10,158 deaths (WHO, 2021). In mid-June 2020, a groom in India died from COVID-19 two days after his wedding; later, 80 guests who had attended the wedding and interacted with the groom tested positive for the virus (Zargar, 2020). A year later—partially due to officials’ lax enforcement of COVID-19 guidelines after a prior, initially stringent, government lockdown—the nation was racked with a second wave of COVID-19 that overwhelmed the health infrastructure and left millions infected (New York Times, 2021).

While many public institutions are currently working diligently on vaccination efforts, public resistance to these and other public health recommendations related to COVID-19 poses a challenge of how to convince masses to abide by public health guidelines. If appeals to scientific research are not effective at persuading individuals to adopt these recommendations, what more effective measures may be taken to promote them? In this paper, we consider how adherence to simple yet vital health measures may be able to be enhanced if they can be linked to individuals’ religious commitments.

While a good deal of research has been done in Euro-American contexts on how Christian and Jewish commitments may support public health in the context of COVID-19 (Budaev, 2021; del Castillo et al., 2020; Galang, et al., 2021; Olagoke et al., 2021; Osei-Tutu et al., 2021; Pirutinsky et al., 2020; Pirutinsky et al., 2021; Papazoglou et al., 2021; Rashi, 2020; Serfaty et al., 2021; VanderWeele, 2020; Weinberger-Litman et al., 2020), much less work has focused on how Islamic commitments may do the same. What’s more, the work that has been done with respect to Islamic commitments is for the most part centered specifically on mental health concerns rather than on Islamic practices and commitments more generally (Achour et al., 2021; Husain, 1998; Mahamid & Bdier, 2021; Saud et al., 2021). As a result, we put special emphasis on the Islamic case, and highlight respects in which Islamic commitments may support public health not only in the domain of mental health, but also beyond that.

In Euro-American contexts, Christian and Jewish commitments are often more familiar to funders and scientific researchers, whereas politics and the media has led many to be ignorant of, and to negatively perceive, Islam. Since—unfortunately—wealthy funders and scientific researchers are also often concentrated in Europe and North America, it is not surprising that more attention has not been paid to the role that Islamic beliefs and practices may play in the fight against COVID-19. However, Islam is the world’s fastest growing religion (Lipka & Hackett, 2017) and multiple sources report instances in which Muslim believers failed to comply with COVID-19 guidelines, sometimes on account of their perceived religious obligations.
Nurmansyah et al. (2022) note cases from early in the pandemic (July 2020) in which Indonesian believers chose to attend in-person congregational prayers (despite health recommendations against doing so), and find that over 60% of those who attended congregational prayers ‘never’ or ‘seldom’ adhered to physical distancing rules. Nurhayati and Purnama (2021) likewise discuss how Indonesian families have resisted approved protocols for handling corpses on religious grounds, and Yoosefi Lebni et al. (2021) document the significant, negative role that some Muslim clerics in Iran have played in undermining public health efforts, for example by opposing quarantine rules. However there is a paucity of literature that focuses on cases where Islamic beliefs actually were supportive of recommended health practices. As we discuss below, many Muslims live in low and middle income countries where the risks associated with contracting COVID-19 are particularly acute, and so it is important that scientists put greater efforts into seeking out scientific evidence about how faith-based practices—including, in particular, Islamic practices—can be utilized to contribute to, rather than undermine, public health outcomes pertaining to diseases like COVID-19. Funders and international organizations should likewise put greater focus into funding and supporting such research.

**Islamic Practices and the Fight Against COVID-19**

Resistance to COVID-19 measures is reported worldwide and results from diverse causes. For instance, Lazarus and colleagues (2021) suggest that low compliance rates in Russia may be partially attributable to lack of trust in government. In their research on low compliance rates in particular regions of the US and Canada, Wang and colleagues (2021) similarly make reference to the role of distrust in government and add that young age inclines some to see such compliance as unnecessary. Another major contributing factor to compliance with COVID-19 measures—in particular, with respect to acceptance of a vaccine—is trust in science and scientific institutions. Sturgis et al. (2021) find that in populations where there is a lower level of consensus around the trustworthiness of scientific institutions, individuals are significantly less likely to be confident about getting vaccinated. Masses of people implement practices based on faith, and so one approach to promoting public health in contexts where trust in government or scientific institutions is low is to promote existing religious practices that are aligned with recommendations for COVID-19 and are already accepted among an affected population.

Historically, Islam has provided a secure basis for trust in science and scientific institutions. While Europe experienced a “dark age” in the 10th to 14th century (partially due, in cases like Galileo’s, to the control of the church), Islamic societies in the Middle East and North Africa in this period made major advances in medicine, astronomy, physics, and the social sciences (Masood, 2017). However, today the basis for such confidence in scientific institutions has sometimes been complicated by social and economic factors. In low and middle-income countries, where—whether due to historical colonial oppression or otherwise—governments have not been able to effectively provide a scientific education to the public, lack of exposure
to and trust in scientific experts may put members of society at a greater risk for contracting COVID-19. Many of the world’s two billion.

Muslims (about 24% of the world population) live in low and middle-income countries (LMIC) (Pew Research Center, 2017) and so COVID-19 recommendations may be easier to implement in those populations if they are linked to health-related practices rooted in Islam which are already familiar and acceptable to individuals living in those countries. Given a relative lack of public health infrastructure, populations in low and middle-income countries are also particularly vulnerable to suffering significant harms from COVID-19 if and when they contract it. While one may easily be misled by the fact that the number of per capita deaths following an official, positive test for COVID-19 is higher in high-income than in low-income countries, lower middle-income countries have a significantly higher per capita ‘excess’ death rate—which includes estimates of those who likely died from COVID-19 but were not tested (Fig. 1). As a result, it may be especially important to consider whether and how religious practices may support compliance with COVID-19 best practices in these populations.

Several researchers have highlighted how participation in religious practices has supported the mental health of believers in the midst of the pandemic. Del Castillo et al., (2020, 2021), for example, highlight how the Catholic Church played a pivotal role in supporting the psychological well-being of followers in the Philippines in

![Fig. 1 Excess Deaths Estimates (2020–2022). Space Adam (2022)](image-url)
midst of the pandemic, and Pirutinsky et al. (2020) argue that religious participation among Orthodox Jews in the American northeast helped contribute to their resilience in the face of the pandemic. While there seems to be more scholarly focus on how Jewish and (especially) Christian commitments, rather than Islamic commitments, support mental health in the face of the pandemic (see, among others, De Backer, 2021; Dein et al., 2020; Del Castillo et al., 2020, 2021; Ge et al., 2021; Osei-Tutu et al., 2021; Pirutinsky et al., 2020, 2021), the Islamic perspective is not entirely missing from these conversations about mental health. In a study conducted in Palestine, Mahamid and Bdier (2021) found that the Islamic commitments of participants provided them with religious coping mechanisms for dealing with the pandemic in a way that, in turn, supported a decrease in depressive symptoms and perceived stress. Mahimid and Bdier’s study builds on, and draws support from, Abu-Raiya and colleagues’ (2019) prior work on Qur’anic coping theory (2008; 2018), which suggests that methods of addressing difficulty that are prescribed by the Qur’an—for instance, developing a deeper connection with God and regarding challenges as ‘tests’ of faith—contribute to other measures of mental health like life satisfaction.

While the support that religion may provide to mental health is certainly an important element of the wider contribution it can make to supporting public health, religious commitment can also help support public health by motivating practices that directly prevent or constrain the spread of illness. For example, in Buddhist populations, the traditional practice of greeting others by pressing one’s hands together in front of one’s chest may be encouraged as a hygienic alternative to shaking hands (Sang, 2021). Along the same lines, if or when disease spreads among a Muslim community, they may be more motivated to (for instance) wash their hands frequently if hand-washing is linked to relevant sayings of the Prophet Muhammad (hadiths)—sayings like “Cleanliness is half of faith” (Muslim, n.d.) or “When anyone amongst you wakes up from sleep, he should wash his hands three times before putting it in the utensil, for he does not know where his hand was during the night” (Bukhari, n.d.a).

Even more relevant to the context of COVID-19, practices that align with Prophetic hadiths may help encourage Muslim communities to participate in social distancing and vaccination efforts. For instance, the Prophet Muhammad is reported to have said that, when a disease spreads, Muslims should ‘make use of medical treatment,’ because ‘God has not made a disease without appointing a remedy for it, with the exception of one disease—old age’ (Abu-Dawud, n.d.). Sayings like this one may serve as a basis for increasing participation in vaccination programs that are critical to stemming the tide of COVID-19, especially in LMIC populations.

Additionally, Muslim communities (particularly in LMIC populations) may be more persuaded to practice social distancing if social distancing is linked to historical practices and hadiths familiar from within the Islamic tradition. The concept of social distancing arises in the Islamic tradition in sayings of the Prophet Muhammad like ‘The cattle (sheep, cows, camels, etc.) suffering from a disease should not be mixed up with healthy cattle, [and] do not put a patient with a healthy person (as a precaution)’ (Bukhari, n.d.c) and ‘If you hear of an outbreak of plague in a land, do not enter it; but if the plague outbreaks out in a place while you are in it, do not
leave that place’ (Bukhari, n.d.b). Traditional religious sayings like these gave rise to the practice of Arabiniya (the forty), a practice which Ibn Sina (980–1037) recommended and which asks individuals to stay in isolation for forty days (Shah et al., 2020). This practice was transferred through Muslim merchants to Venice where it was picked up by local merchants and labelled as “Quarantine” to reflect the forty days rule. By framing contemporary public health guidelines regarding COVID-19 in relation to faith-based practices like Arabiniya, public health leaders may inspire those who are committed to the Islamic tradition to accept staying at home and social distancing by analogy to similar past encounters.

**Challenges from the Scientific Community**

Since faith-based practices may help save time and lives in the fight against public health threats like COVID-19, it seems appropriate for scientists to invest in researching how public engagement in those practices may promote public health. Despite the potential of faith-based practices to promote public health, however, the scientific community has tended to shy-away from studying how those practices may be utilized to that end (Graham & Graham, 2011; Rosmarin, 2021). This may be because, at least in the US and Europe, scientists and academics are particularly likely to be religiously unaffiliated in comparison to the general population (PEW Research Center, 2009; Stirrat & Cornwell, 2013). Scientists are expected to be neutral and objective in their judgments, and so they need to grapple with the ‘why’ and ‘how’ of compliance (or non-compliance) with COVID-19 recommendations and put their personal experiences with, and views about, religion aside.

Research on the intersection of health and religion is perhaps most well-developed in the area of mental health (see e.g., Rosmarin and Koenig, 1998; Levin, 2010); it is not surprising, then, that there has been a good deal of research regarding how affiliation with Christian groups may contribute to mental health in the context of COVID-19 (see, among others, De Backer, 2021; Dein et al., 2020; Del Castillo et al., 2020, 2021; Ge et al., 2021; Osei-Tutu et al., 2021). As we have already alluded to, the Islamic perspective is not entirely missing from conversations about mental health (Achour et al., 2021; Mahamid & Bdier, 2021; Saud et al., 2021.). Nevertheless, scientists based in Euro-American countries seem to be slower to consider how Islamic practices can contribute to public health outcomes, including but not limited to in the domain of mental health.

One example of where there has been resistance to considering and implementing faith-based Islamic practices related to mental health is in refugee populations. Under stressful conditions like those imposed by the COVID-19 pandemic, there are many scientifically approved practices that can be used to alleviate and reduce anxiety including, e.g., breathing exercises, yoga, and meditation. Based on the authors’ own experience in refugee populations in Jordan, mental health professionals often go into majority Muslim refugee populations and encourage them to practice unfamiliar yoga practices, which results in insurmountable resistance and low response rates. However, there are faith-based practices from
within Islam that may accomplish some of the same ends as yoga. For instance, people engage in certain bodily movements and breathing exercises during prayer that, if practiced properly, may be able to help individuals reduce anxiety in similar ways as occur in yoga. Many Muslims living in refugee populations are already performing these exercises, and so utilizing these familiar practices may be able to produce wider acceptance among vulnerable refugee populations.

Another example of where there has been resistance to considering and implementing faith-based Islamic practices is with respect to practices surrounding safe water, sanitation, and hygiene (WASH practices). For example, String, Guiterrez and Lantagne (2020) of Purdue University conducted a study on vulnerable communities in a Muslim majority population concerning their WASH practices. In the analysis, these researchers saw a trend that people of the Muslim faith had less water-transmitted diseases such as cholera. This may well have been due to the faith-based practice of cleaning with water in addition to tissue paper after using the toilet. As a scientist, this phenomenon is worth pursuing! If such a practice can help in dropping the incidence of transmission of infectious disease, it should be studied and recommended as a best practice. However, when this suggestion was made to the lead researcher, she chose to circumvent further investigation into and promotion of this faith-based practice (personal communication).

Beyond obstacles arising from individual scientists and health practitioners who may be resistant to considering how religiously-based practices—including Islamic practices—can promote public health outcomes, other more structural challenges come from the gate-keepers of research, including funders and international organizations, universities, and governments. Many of these gate-keepers are based in Euro-American nations that have become relatively more secularized than the global population as a whole (PEW, 2017). They often fail to acknowledge faith and religion in their general discourse, and this leads them to also veer away from funding research into faith-based commitments and practices (for a discussion of one exception, see Schneider, 2010). But religious views are not trivial or only representative of a minority of voices in the global community; to the contrary, only 16% or 1.1 billion people assert no or uncertain belief (Fig. 2).

Fig. 2 Global Religious Populations in 2015. Source: PEW (2017)
Even when funders do back work that relates to religion, it often focuses on religious perspectives, including especially Christian perspectives that are familiar to Euro-American contexts (De Vries, 2015). These efforts are certainly important, as there are about 2.3 billion Christians worldwide (PEW, 2017). However, there are also around 2 billion Muslims, 1.1 billion Hindus, 500 million Buddhists, 4 hundred million followers of traditional folk religions, 25 million Sikhs, 10 million Jews, and 34 million adherents to the Bahá’í, Jain, Taoist and other smaller traditions (Fig. 2). When people of these other faith communities ask if an action is ethical, they—like those with Christian commitments—often turn to their religious systems and leaders for guidance. Nonetheless, the global Muslim viewpoint and those of other these religions are too rarely included in scientific initiatives to promote public health (for one exception, see Dajani et al., 2022).

Ethics and Religious Considerations

Beyond the practical benefits of appealing to faith-based practices, such appeals also have a morally valuable dimension. First, individuals who work in public health have an ethical obligation to respect the autonomy of the people they serve. This means that they should do their best to show regard for the beliefs and practices that people have already chosen to adopt and, as far as possible, minimize reliance on coercive measures that are alien to the individuals on whom those measures are imposed.

In the secular, Euro-American context, the importance of showing respect for individuals’ autonomy has been most extensively discussed by Immanuel Kant (Wood, 1999). Unlike (say) dogs or hammers, Kant pointed out, persons can understand and appreciate moral and practical reasons, and govern their own conduct in accordance with those reasons. As a result, Kant argued, one ought not to simply compel persons to conform to one’s own wishes in the way one may perhaps legitimately do with (say) a dog or hammer. Instead, one ought (at least presumptively) to respect persons’ freedom to govern their own choices, and so ensure that they are able to rationally consent to any imposition of power to which one subjects them.

Even when religious beliefs contradict scientific norms, the emphasis that democratic countries put on the importance of respect for autonomy often leads them to give groups freedom to make their own ethical choices. For example, under US law medical practitioners cannot force a religious group to adopt a medical practice if their religion prevents them from doing so. A common example pertains to Jehovah’s Witnesses’ prohibition of blood transfusion. Although refusal of blood transfusion may obstruct optimal medical treatment and present a challenge to the medical community, Jehovah’s Witnesses’ beliefs are respected and alternative care strategies are pursued (Hughes et al., 2008). When individuals’ religious practices positively align with desirable health outcomes, there is all the more reason to show regard and respect for their autonomous engagement with those practices. Scientists and gatekeepers thus have strong moral reasons...
to consider how public health recommendations relevant to COVID-19 can be aligned with Muslim populations’ beliefs and practices.

A second moral benefit of considering how faith intersects with scientific and public health goals is that faith-based ethical perspectives may enrich the ethical discourse about those goals. Concepts about justice, fair treatment for human and animal subjects, and the limits of scientific knowledge are often absent from marketplace considerations that heavily influence medical and scientific institutions. In light of the influence of these marketplace considerations, bringing attention to the ethical dimensions of religious traditions may help make discussions about the role and aims of science in society more well-rounded.

For example, ethical considerations from the Islamic perspective stem from a framework that is based in the well-being of the community (Mustafa, 2014), and this may enrich discussions of public health surrounding COVID-19 by adding a dimension of public-spiritedness to Euro-American discussions that often tend towards focus on the individual. Other Islamic ethical principles include the Principle of Qasīd (intention), the Principle of Yaqīn (certainty)—which speaks to the importance of evidence-based knowledge, the Principle of Ḍarar (injury)—which concerns what harm could be caused by engaging or failing to engage in a particular action, the Principle of Ḍarūra (necessity)—which relates to the extent that we have to rely on a specific practice or technology and if there are any other alternatives, and finally the principle of `Urf (custom)—which highlights the importance of taking local customs and traditions in consideration when making decisions about how to implement a novel discovery (Mustafa, 2014). These Islamic ethical guidelines guided Muslim scientists and physicians in applying scientific discoveries long before the Declaration of Helsinki, and—just as the world draws upon the Declaration of Helsinki for guidance in ethical practices—those concerned with formulating public health guidelines may also find rich wisdom in these sources.

**Study Limitations**

There are two limitations to this study, both of which merit further research. First, this study did not undertake a full systematic examination of all peer-reviewed Christian, secular and Islamic publications concerning COVID-19. As a result, our contention that Euro-American scholars have tended to implicitly favor secular and Christian perspectives over Islamic ones in the course of their discussions about COVID-19 warrants additional research.

Second, although we have noted social science evidence that shows that scientists and academics are less likely to be religiously affiliated than members of the general population (PEW, 2009; Stirrat & Cornwell, 2013), it bears further investigation to consider how this fact may contribute to scholars’ focus on secular methods of addressing public health problems. It would be beneficial to explore how these scholars themselves frame their motivations for focusing on secular responses. Do they actively reject the possibility that religious responses to public health problems could be effective at addressing those problems, or do they merely passively fail
to consider that possibility? Understanding why scholars have failed to more fully consider the efficacy of religious responses to public health crises would provide guidance on how to best direct future efforts to remediate that failure. More specifically, it would provide guidance on whether those efforts should focus on merely raising awareness of the possibility that religious practices may be valuable to promoting public health goals or whether those efforts should attend more specifically to addressing and correcting possible misperceptions about religion.

**Conclusions: The Path Forward**

The relevance and significance of faith-based practices to public health outcomes are easily marginalized in the predominantly secular context of academic research, but—regardless of whether they themselves are religiously affiliated—scientists, researchers, and funders have both moral and practical reasons to enlarge discussions on best practices to include faith-based perspectives. This is especially so in the context of an urgent public health crisis like COVID-19. Because centers of funding and scientific research are disproportionately based in high-income, Euro-American countries where many are unfamiliar with—and even suspicious of—the Islamic faith, and because health infrastructures in low and middle-income countries where many Muslims reside make those populations particularly vulnerable to COVID-19, it is also particularly important that scientists and public health leaders do more to consider how Islamic practices and beliefs may support public health outcomes related to COVID-19.

In light of the above considerations, we recommend the following:

a) Encourage scientists to gather evidence on the outcome of existing faith-based practices, including Islamic practices, to public health. To this end, scientists should conduct clinical trials to ascertain the effectiveness of particular religious practices at promoting desirable public health outcomes.

b) Scientists should specifically consider what faith-based practices would be effective in vulnerable communities with limited resources, including refugee communities and populations in low and middle-income countries. Rather than importing unfamiliar, ‘outlander’ practices, they should investigate how faith-rooted practices—including, where relevant, Islamic practices—may be effective at promoting public health outcomes in these countries.

c) Funders, governments, and international organizations should support studying and implementing best practices irrespective of their origin, and thus not hesitate to put additional resources into considering what best practices Islamic communities may already implement.

There may be shared ethical perspectives between various religious traditions that promote public health, as well as recommendations that are unique to particular traditions but that may enrich best practices already implemented by others. We thus call on scientists and scholars to have the courage to boldly change
how their research concerning public health outcomes can be cross-linked with religious principles and practices, especially with respect to relatively neglected religious perspectives like Islam.

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