

Reassessing the Relationship Between Religiosity and Political Violence: Evidence from Afghanistan

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Abstract

In the past three decades, the political science scholarship has focused on whether Islamic beliefs and practices lead to militancy among Muslims. I argue that contrary to the common presumption, there is a reverse causal relationship between religiosity and political violence. The spread of violence causes death anxiety and a diminished sense of control among civilians, which lead to religious intensity as a psychological coping mechanism. Given the as-if random nature of casualties caused by militant attacks in urban centers, I test the proposed theory using a survey conducted in Kabul's neighborhoods that experienced militant attacks and similar neighborhoods without attacks. The survey provides evidence that personal exposure to violence leads to religious intensity among civilians, regardless of their support for Islamist militants. Neighborhood-level violence, however, does not seem to cause psychological distress and does not lead to religious intensity. This study provides novel insights on the intricate relationship between religiosity and political violence.

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1 Introduction

Muslim countries have experienced a drastic rise in the number of civil wars, and religion is assumed to be central to these armed conflicts. Since 2005, more than 75% of civil wars and annual battle deaths in the world have occurred in Muslim-majority countries, with over 200,000 battle deaths only in the period of 2010-2014 (Gleditsch and Rudolfson 2016). With the rise of civil wars, two contradicting patterns have emerged. At country level, Muslims living in places experiencing civil wars are more likely than other Muslims to pray daily, read or listen to the Quran on a daily basis, and view religion to be very important in their lives – as summarized in Table 1. These trends have made many scholars and policy makers to argue that religious beliefs lead to participation in, and support for, militancy among Muslims (Canetti et al. 2010; Stemmann 2006; Wiktorowicz 2006; Hasan 2011; Bunzel 2015; Weismann 2017; Atran, Sheikh, and Gomez 2014; Atran 2003; Juergensmeyer 2003).

The empirical research, however, has found no relationship between religiosity and support for Islamist militancy. The surveys examining the effects of religious beliefs and behaviors on support for militancy in Muslim countries has found either no evidence or inconclusive results. Adherence to religious beliefs and observing religious rituals do not seem to be reliable predictors of support for political violence or Islamist militant groups (Tessler and Nachtwey 1998; Haddad 2003; Fair, Littman, and Nugent 2018; Fair, Malhotra, and Shapiro 2012; Fair, Ramsay, and Kull 2008; Kaltenthaler et al. 2010). On the contrary, making *hajj* pilgrimage (the most important religious journey for Muslims), knowledge of Islam, and conceptualizing Sharia as good governance and public service delivery are correlated with greater support for peace and decreased sympathy with Islamist militant groups (Clingsmith, Khwaja, and Kremer 2009; Fair, Goldstein, and Hamza 2017; Fair, Hwang, and Majid 2019; Fair, Malhotra, and Shapiro 2012; Wiktorowicz 2005).

Table 1: Civil War and Religiosity in Muslim Countries

	Religion Very Important	Pray Daily	Read/ Listen to Quran Daily
Civil war	79%	77%	36%
No civil war	65%	60%	26%
Sample size	32308	31917	31749
$\chi^2(df = 1)$	701.69	1017.7	334.42
P-Value	< .001	< .001	< .001

Note: based on Pew Research Center Survey, Religion and Public Life Project, World’s Muslim Survey, 2011-2012. Civil war refers to countries experiencing an armed conflict in 2012 with at least 25 annual battle deaths, based on ACLED data on battle deaths.

I argue that the extant literature faces a limitation. The existing studies have treated

religiosity mainly as the explanatory variable and have overlooked the case of reverse causality – with religiosity as the dependent variable. In other words, the investigations have focused on whether religiosity (religious beliefs and practices) causes or contributes to armed conflicts (Acosta 2016; Atran, Sheikh, and Gomez 2014; Canetti et al. 2010; Ben-Dor and Pedahzur 2004; Cottee 2017; Fair, Malhotra, and Shapiro 2012; Haddad 2003; Juergensmeyer 2003; Tessler and Nachtwey 1998; Kaltenthaler et al. 2010) while ignoring whether armed conflicts could affect religiosity. A small number of studies that have implicitly treated religion as the dependent variable concentrate on religious ideologies and view religion instrumentally used by Islamist militant groups to recruit fighters and mobilize financial support (Berman and Laitin 2008; Walter 2017; Toft 2007; Alvi 2014; Isaacs 2016). This perspective, however, does not explain why civilians also tend to be more religious when Muslim societies experience armed conflicts.

Building on psychological theories of religion and coping, I propose a new theoretical framework for assessing the relationship between religion and violence. I theorize that the spread of civil wars lead to the intensification of death anxiety and a diminished sense of control among civilians, which in turn reinforces religiosity as a psychological coping mechanism, regardless of civilians’ support for Islamist militant groups. Intensified religiosity – stronger religious beliefs and increased participation in religious rituals– helps affected individuals better cope with death anxiety and improves their sense of control. Since both supporters and opponents of militant groups experience intensified religiosity in response to violence, individual-level indicators of religiosity may not be good predictors of support for militancy.

To test the proposed theory, I conducted a survey in Afghanistan’s capital, which suffered more than 150 militant attacks and 500 civilian fatalities in the 16 months prior to the survey. Leveraging the as-if random nature of civilian casualties at neighborhood level and matching high-risk and low-risk neighborhoods, the survey examines the causal relationship between political violence and religiosity. First, consistent with other surveys in Muslim-majority countries, this survey finds no relationship between religiosity and support for the Taliban, the main Islamist militant group in Afghanistan. Second, the survey provides evidence that exposure to violence leads to religious intensity among civilians, regardless of their support for the Taliban. Consistent with the “desensitization” theory in psychology, this study finds that neighborhood-level violence has no significant impacts, but personal exposure to violence lessens psychological well-being and causes intensified religiosity among civilians. As an alternative test of the theory, the survey results illustrate that increased deaths of family members and relatives due to the COVID-19 are also associated with intensified religiosity.

This paper is arranged as follows. The next section provides an overview of the literature.

Section 3 presents the theoretical framework. Sections 4 and 5 elaborate on the research designs and present the survey findings. Section 6 discusses alternative explanations.

2 Literature Review

Before reviewing the literature, few definitions are in order. Following Oxford Dictionary definition, by militancy, I refer to using violence in support of a political or social cause. In this paper, I use militancy and insurgency interchangeably. Religion, in this paper, refers to any system of beliefs which presumes the existence of a supernatural power that exerts some control over human beings' lives. By Islamist, I refer to the groups that advocate for incorporating religion into public life and establishing a political system based on *Sharia*, Islamic jurisprudence. Ideology is narrower than religion and refers to any system of beliefs and ideas that form the basis of a social or political system.

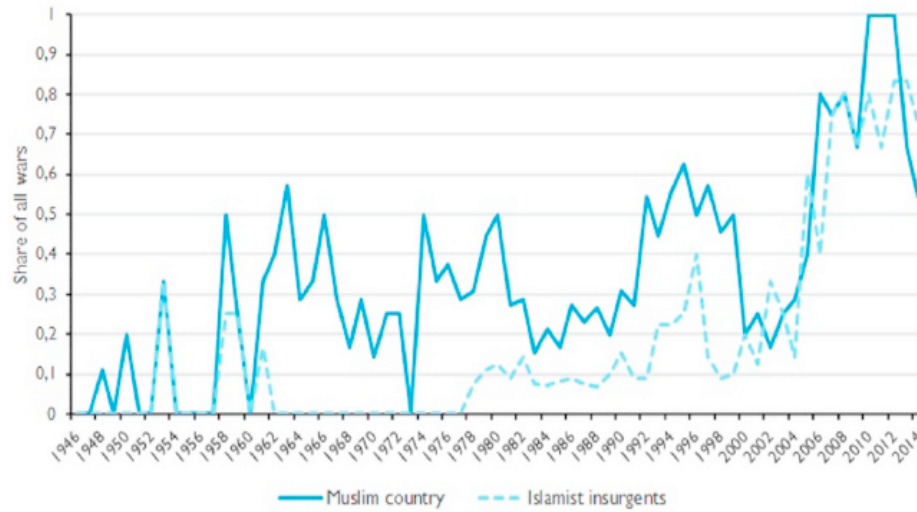
With less than one fifth of the world's population, Muslim-majority countries have suffered from a disproportionate share of civil wars in the world. As reflected in Figure 1, with the exception of a few years, Muslim countries have experienced more than 40% of all civil wars in the world. Since 2005, more than 75% of civil wars and annual battle deaths in the world have occurred in Muslim-majority countries, with over 200,000 battle deaths only in the period of 2010-2014.

Besides, Muslims living in countries that experience armed conflicts seem to be more religious than Muslims living in peaceful countries. As summarized in Table 1, Muslims living in countries experiencing civil wars perform daily prayers more frequently, read or listen to the Quran more often and view religion to be more important in their lives.

The disproportionate share of civil wars in Muslim countries and the prominent role of religion in Muslim societies experiencing armed conflicts have generated a debate on the religion-violence nexus in Muslim countries. Some scholars and many journalists have postulated a causal relationship between religious beliefs and militant violence. From this perspective, certain elements of Islamic beliefs, such as jihad, martyrdom, and otherworldly rewards for those killed in a jihad lead to support for militancy among Muslims and make Muslim societies prone to political violence (Alvi 2014; Bunzel 2015; Canetti et al. 2010; Hasan 2011; Muluk, Sumaktoyo, and Ruth 2013; Walter 2017; Weismann 2017; Wiktorowicz 2006).

Although religious beliefs may be important for militancy, this argument does not explain why militancy flourishes in certain places and times but not in others. Religious beliefs in jihad, martyrdom and heavenly rewards are ubiquitous across time and space in Muslim societies, but militancy emerges in some Muslim communities and at certain points in time.

Figure 1: Share of civil wars in Muslim countries and Islamist militant groups



Source: Gleditsch and Rudolfson 2016

Religious beliefs alone, thus, is not sufficient for explaining the variation in the emergence of militancy.

In addition, the empirical research examining the causal effects of religious beliefs and behaviors on support for militancy in Muslim countries has found either no evidence or inconclusive results. Adherence to religious beliefs and observing religious rituals – such as the frequency of prayers, attending mosques, and listening to the Quran or religious sermons – are not accurate predictors of support for political violence or militant groups (Tessler and Nachtwey 1998; Haddad 2003; Fair, Littman, and Nugent 2018; Fair, Malhotra, and Shapiro 2012; Fair, Ramsay, and Kull 2008; Kaltenthaler et al. 2010; Shapiro and Fair 2010).

On the contrary, a number of studies have highlighted that knowledge of Islam, *haji* pilgrimage experience, and the conceptualization of Sharia as good governance and public goods provision, which is the predominant conceptualization even in countries witnessing the proliferation of Islamist militant groups, are associated with support for peace and less sympathy with Islamist militant groups (Clingingsmith, Khwaja, and Kremer 2009; Wiktorowicz 2005; Fair, Malhotra, and Shapiro 2012; Fair, Littman, and Nugent 2018; Fair, Hwang, and Majid 2019; Fair, Goldstein, and Hamza 2017).

An alternative perspective seeks the root cause of militancy in Muslim societies in socio-economic and political grievances and argues that Islamic beliefs provide a resonant frame for formulating grievances (Cottee 2017; Lewis 1990; Juergensmeyer 2003; Hashemi and Postel

2017; Makdisi, Hashemi, and Postel 2017). Although the existing empirical evidence is more consistent with this line of argument, these scholars do not explain why Islamic beliefs provide a better frame for formulating grievances than grievances themselves. In addition, this argument cannot explain why Muslim civilian express stronger religious beliefs and are more likely to adhere to religious practices in the context of armed conflicts.

The third group of scholars see the pronounced role of religion in civil wars the result of a strategic decision by the leadership of Islamist militant groups (Berman and Laitin 2008; Walter 2017). Militant groups in Muslim countries, according to these scholars, adopt religion-based ideologies as a tool for costly signaling and recruiting committed fighters. Although this model provides a logical explanation from the perspective of militant leaders, it fails to explicate why fighters comply with the strict religious codes imposed from the top and why civilians express intensified religiosity at times of war as well. In addition, this explanation also falls short of explicating why Muslim civilians also tend to be more religious in countries experiencing armed conflicts.

Canetti et al. (2010) and Zaidise et al. (2007) offer a more complicated argument about the relationship between religiosity and political violence. Highlighting the importance of economic deprivation and psychological resource loss, they argue that religiosity is associated with support for political violence only when mediated by deprivation and psychological resource loss. Although these studies provide valuable insights, they capture partially the complicated role of religious beliefs and practices in armed conflicts.

In sum, despite the increased interest among scholars in studying the relationship between religion, particularly Islam, and political violence, a serious limitation of the scholarship is ignoring the possibility of reverse causality between religiosity and political violence. This negligence has taken place despite the fact that psychological theories and studies of religion suggest that armed conflicts and increased fatalities could lead to religious intensity.

The only study that explored the reverse causality between armed conflicts and religion was conducted by Isaacs (2016). Focusing on the rhetoric adopted by militant groups from 1970 to 2012, he finds that past use of religious rhetoric does not predict future violence but intensified violence is associated with more religious rhetoric afterwards. Like Berman and Laitin (2008) and Walter (2017), Isaacs explicates that adopting religious rhetoric is a strategic decision by militant groups to mobilize resources and recruit and retain members.

Similar to Isaacs' study, I focus on the reverse causal relationship between religion and political violence but argue that the relationship goes beyond strategic decisions made by militant groups. Instead, the observed correlation between religiosity and political violence may reflect a deeper psychological process. When a Muslim society suffers an armed conflict, individuals experience intensified religiosity since Islamic beliefs and practices provide an

accessible mechanism for coping with the adverse psychological effects of armed conflicts. The next section discusses the proposed theory and explicates why Muslims are more likely to rely on religion for coping with war.

3 Theoretical Framework

Building on psychological theories of religion, I argue that armed conflicts, regardless of their root causes, expose affected civilians to the psychological costs of violence, which are death anxiety and a diminished sense of control. Increased death anxiety and a diminished sense of control, in turn, lead to religious intensity among affected civilians as a psychological coping mechanism. Intensified religiosity – stronger religious beliefs and more frequent participation in religious rituals – helps civilians better cope with death anxiety and improves their sense of control. Intensified religiosity, therefore, may be an effect, rather than the cause of, armed conflicts in Muslim countries. Furthermore, since intensified religiosity is the result of a psychological process and independent of political views, both opponents and supporters of Islamist militant groups experience intensified religiosity with the spread of violence. Because religious intensification is independent of support for Islamist militant groups, individual-level indicators of religiosity do not predict support for Islamist militancy. The following subsections discuss the theoretical framework in more detail.

3.1 Psychology of Religion

Psychological theories of religion highlight two factors to be particularly significant for reinforcing religious beliefs and rituals: (1) death anxiety and (2) a diminished sense of control. Studies of death anxiety and religion are based on the Terror Management Theory (TMT), developed in the late twentieth century. The TMT postulates that human beings, like animals, possess the instinct for self-preservation and strive for continued existence. Human beings, however, unlike animals, have the mental capacity to recognize that their strife for self-preservation would eventually fail and that they could face death shortly and abruptly. The awareness of one's death, the TMT postulates, leads to terror and death anxiety, which are psychologically taxing and onerous. Death anxiety is intensified particularly when individuals encounter reminders of death (Solomon, Greenberg, and Pyszczynski 1991; Dechesne et al. 2003; Bassett 2007; Inzlicht and Tullett 2010; Drolet 1990; Mercier, Kramer, and Shariff 2018).

To deal with death anxiety, individuals usually rely on *proximal* or *distal* defense mechanism. With proximal defense mechanism, individuals try to suppress thoughts of death

and occupy their mind with other thoughts or sources of anxiety. In case of distal defense mechanisms, individuals try to overcome death anxiety through transcending death with the help of cultural worldviews that (a) assign an order to the world and (b) promise symbolic or literal immortality (Solomon, Greenberg, and Pyszczynski 1991; Dechesne et al. 2003; Bassett 2007; Inzlicht and Tullett 2010; Drolet 1990).

Symbolic immortality refers to the belief that personal identity continues after one's corporeal death through the continuation of phenomena that outlast the individual, such as one's progeny, creative work or significant contributions to the world. Symbolic immortality could also be obtained through membership in, and contribution to, entities that continue to exist after one's death, such as nation, ethnic group or tribe. Literal immortality, usually offered through religion, refers to the belief that death can be postponed through good living and that corporeal death is just as a transition to another form of existence whereas personal life continues eternally (Solomon, Greenberg, and Pyszczynski 1991; Dechesne et al. 2003; Bassett 2007).

Numerous experiments have confirmed the TMT. Experiments have shown that reminders of death increases anxiety and reinforces the cultural worldview on which individuals usually rely to give meaning to death. After death is made salient, religious subjects express stronger beliefs in their worldview and literal immortality while atheists show stronger beliefs in symbolic immortality. The effect of death salience on anxiety, however, is mitigated if individuals are primed with religious messages or symbols. While death salience increases anxiety, priming subjects with religious words or signs, following death salience, reduces death anxiety. The effect of religious primes in terms of reducing death anxiety is particularly strong among those with religious beliefs (Bassett 2007; Inzlicht and Tullett 2010; Solomon, Greenberg, and Pyszczynski 1991).

Moreover, religious primes do not need to be explicitly about the afterlife to reduce death anxiety. Even subliminally priming the word "God" is sufficient to reduce death anxiety. Among non-religious subjects, symbolic immortality is found more effective in reducing death anxiety although religious primes still have some effects (Solomon, Greenberg, and Pyszczynski 1991; Dechesne et al. 2003; Bassett 2007; Inzlicht and Tullett 2010; Drolet 1990).

Another factor reinforcing religious beliefs is the loss of sense of control. Psychological studies have shown that individuals experiencing a diminished sense of control (due to adverse events such as natural disasters, severe illnesses or life crises) often exhibit stronger religious beliefs and attend religious rituals more frequently. Viewing the plight as divine providence and part of a greater benevolent plan, affected individuals could better cope with the negative conditions caused by adverse events. They gain an improved sense of control with the belief

in a God that is in control of chaos (Aaron C. Kay et al. 2008; Aaron C. Kay et al. 2009; Aaron C Kay et al. 2010; Bentzen 2015; Bentzen 2013; Mercier, Kramer, and Shariff 2018; Gray and Wegner 2010).

Relying on religion for coping in both cases – death anxiety and a diminished sense of control – is associated with improved psychological well-being, that is, with lessened anxiety and stress and increased happiness and self-esteem (Mercier, Kramer, and Shariff 2018; Gray and Wegner 2010; Pargament et al. 1990; Pargament 1997).

Neurological studies of religiosity provide more insights on how religious experiences improve mental health and reduce anxiety and stress. Religious practices, such as prayer and meditation, are associated with increased activities in DRD4, a polymorphism on the dopamine receptor gene in the frontal lobe. With increased dopamine release as a result of religious experiences, individuals experience self-transcendence and improved sense of psychological well-being (McNamara et al. 2006). In addition, religious experiences are found to reduce blood plasma cortisol, a hormone associated with stress state, and increase Serotonin, which lessens pain sensitivity and produces a sense of tranquility (Andrew B Newberg 2006).

Religion, nevertheless, is not the only mechanism for coping. Individuals may utilize non-religious coping mechanisms, depending on their resources. Those with the financial means may rely on psychotherapy, going on a vacation, seeking entertainment or engaging in other non-religious activities to cope with death anxiety or adverse life events (Bentzen 2013; Pargament et al. 1990; Pargament 1997).

3.2 Armed Conflicts and Religiosity

First, regardless of the root cause of an armed conflict, militancy exacerbates death anxiety among affected civilians. Whether an armed conflict is rooted in socioeconomic, political or religious grievances, militancy represents a risky enterprise that exposes individuals to the reminders of death and the increased risk of mortality. Armed conflicts usually involve militant movements that engage in high-risk violent activities since they have to fight much stronger and highly equipped state armies. Not only militancy exposes fighters to increased risk of deaths, but militant attacks often lead to serious collateral damages. Although militant groups usually attack government or military targets, their attacks often cause enormous civilian casualties, killing or injuring bypassing civilians. The intensity of violence and high frequency of injuries, deaths, loss of community members, and physical destruction caused by armed conflicts make death more salient and remind individuals of their own mortality. In other words, armed conflicts expose affected civilians much more frequently

than periods of peace to the events and phenomena that act as reminders of death. These reminders of death, according to the TMT, would activate death anxiety (Bassett 2007; Inzlicht and Tullett 2010; Solomon, Greenberg, and Pyszczynski 1991).

Distal defense mechanisms, more than proximal ones, can help individuals cope with death anxiety in the context of armed conflicts. With proximal defense mechanisms, individuals would suppress thoughts of death out of consciousness. In the context of conflicts, however, the high frequency and intensity of death reminders would make such defense mechanisms less effective. Distal defense mechanisms, instead, would provide better coping mechanisms but would require tapping into the cultural worldview that provides an individual with a sense of immortality (whether symbolic or literal).

With its elaborate exposition of the afterlife, Islam provides a set of beliefs in literal immortality that Muslims can tap into for coping with death anxiety. Belief in the afterlife is an important pillar of Islam. The Quran presents a detailed description of what individuals would experience in the afterlife, depending on their moral standing in this life. More than 100 verses of the Quran are dedicated to delineating what comes after this life, in addition to an entire chapter titled, *Qiyamat*, which literally means "resurrection."

Moreover, Muslims societies have developed extended communal-religious rituals and ceremonies for coping with death and bereavement, into which Muslims are socialized regardless of their socioeconomic and ethnic backgrounds (Fischer et al. 2010). These rituals and ceremonies – usually centered around the Islamic concept of the afterlife and involving religious figures – reinforce religious beliefs among Muslims when dealing with the high frequency of mortality and bereavement during armed conflicts.

Second, the spread of militancy and armed conflict threatens the sense of control among affected civilians, which also reinforces the role of religious beliefs and rituals as coping mechanisms. Armed conflicts expose affected civilians to high risks and adverse events, including economic decline, loss of employment, insecurity, displacement and other unforeseen predicaments. Such extraordinary adverse events threaten people's sense of control and usually cannot be coped with using ordinary resources.

Given the high rates of poverty and limited provision of public goods and services in Muslim countries, particularly in those experiencing armed conflicts, religious institutions provide accessible means of coping in response to a diminished sense of control. Of the forty two Muslim-majority countries, twelve have experienced armed conflicts since 2000. With the exception of Libya and Iraq, which are middle-income countries, the remaining ten are low-income countries (Bank 2019). To cope with the adverse effects of armed conflict on their lives, civilians in these countries have limited choices because the services provided by the state are scarce, and those offered by the private sector are rarely affordable. Instead,

religious institutions offer services and activities, often as free club goods, that individuals could rely on for coping with adversity. Individuals can socialize during religious ceremonies and can also seek out financial, social and psychological support from the clergy, congregation members and Islamic charity foundations. Since access to these resources are usually tied to the membership in mosques or religious circles, participation in religious ceremonies and rituals expands when communities face armed conflicts and other crises (Chen 2010; Fischer et al. 2010).

More importantly, religion can provide individuals with a spiritual path to coping with a diminished sense of control. While the need for psychotherapy and psychological counseling is highest during armed conflicts, such services are scarce or unaffordable in Muslim countries experiencing conflicts. For instance, in Afghanistan, a country suffering 40 years of violence, more than 40% of the population suffers from anxiety, depression or PTSD, but there are only 11 psychological counseling centers in the entire country (Azad 2019; Sayed 2011). In such conditions, spiritual coping – the perception of personal connection with a benevolent God that is in control of chaos – provides an accessible coping mechanism. It can facilitate a positive appraisal of the negative conditions that are brought upon civilians by a conflict (Mercier, Kramer, and Shariff 2018; Ai et al. 2005; Pargament 1997).

Since religious intensification reflects a psychological response to violence, it does not depend on political views and attitudes toward Islamist militant groups. Both opponents and supporters of Islamist militants are likely to experience religious intensity with the spread of violence and mortality. Stronger religious beliefs and more frequent participation in religious rituals help civilians, regardless of their support for militant groups, better cope with the increased death anxiety and diminished sense of control that they experience during armed conflicts. Because religious intensification is the effect of armed conflicts and reflects a psychological process independent of political views, indicators of religiosity do not predict support for militant groups or political violence. Perhaps, that is why Muslims living in countries affected by armed conflicts tend to be more religious while the more religious individuals in these countries do not necessarily support militant groups or political violence.

The relationship between militant violence and religious intensity, nevertheless, may not be linear, depending on the intensity, and frequency of violence. The *desensitization theory* provides insights on the nuances of the relationship between violence and cognitive and emotional responses. The theory posits that when organisms are exposed to the same stimulus frequently, they exhibit a decrement in response to the stimulus. The rate to which desensitization happens depends on the intensity and frequency of the stimulus. The response decrement is more likely to happen in case of low-intensity stimuli with high frequencies (Groves and Thompson 1970; Watts 1979; Groves, Lee, and Thompson 1969). The empirical studies

of community violence in the U.S. have found some evidence for the desensitization theory. Among the youth and young adults, the exposure to community violence exhibited curvilinear (negative quadratic) relationship with depression but linear relationship with anxiety. The adolescents exposed more frequently to family or community violence in the past showed diminished emotional distress and cognitive reactivity in response to violence (Cooley-Quille et al. 2001; Gaylord-Harden, Cunningham, and Zelencik 2011; Gaylord-Harden et al. 2017; Ng-Mak et al. 2004).

Considering the desensitization theory, it seems plausible that the relationship between exposure to violence and religious intensity may not be linear. People living in violent environments may over time become desensitized to low-intensity violence, by which I refer to neighborhood-level violence that does not personally affect individuals, such as hearing the sounds of explosions or learning about attacks in their neighborhoods. In such cases, as the frequency of neighborhood-level violence increases, individuals may over time get desensitized and may not experience death anxiety or a diminished sense of control. They, thus, may not need to rely on religious coping. On the contrary, they may feel more emotional distress with increased high-intensity violence, that is, with the violence that affects them personally. Personal exposure to violence could include getting injured, losing property, or having family members, relatives or friends killed or injured in violent attacks. Individuals may overtime become desensitized to neighborhood-level violence but show emotional distress and religious intensity in response to personal exposure to violence. The more frequently individuals are personally exposed to violence, the more distressed they may feel and the more they may rely on religion for coping.

Finally, intensified religiosity in response to mortality salience or diminished sense of control is not restricted to Muslims. Studies have shown that following the 9/11 tragic attack on the US, with almost 3000 fatalities, more Americans attended churches, engaged in prayers, and felt stronger beliefs in God (Ai et al. 2005; Fischer et al. 2010). Similarly, people in the states that experience natural disasters or have high rates of severe illnesses, which are associated with a threatened sense of control, express stronger beliefs in God (Mercier, Kramer, and Shariff 2018). Furthermore, people with different faiths across the world express stronger religious beliefs when living in places with a higher risk of natural disasters, such as earthquakes, which are another source of a diminished sense of control (Bentzen 2013; Bentzen 2015).

4 Context: Violence and Casualties in Kabul

To test whether and to what extent exposure to violence affects religious intensity among civilians, I leverage the as-if random nature of civilian casualties at neighborhood level in urban centers. As the models of attacker-defender games highlight, there is a component of randomness to insurgent attacks in urban centers controlled by the government. The goals of attackers (insurgent groups) is to maximize the damage caused by their attacks while the defenders (government forces) try to minimize the damage caused by violence. In this context, the insurgent groups can maximize the damage of their attacks through deception and keeping their targets unpredictable (Li et al. 2018; Nochenson and Heimann 2012; Zhang and Zhuang 2019). The insurgent violence in Kabul often follows a similar dynamic. Although insurgent groups may target specific neighborhoods more frequently because of the concentration of strategic or soft targets or logistical concerns, they tend to surprise the government forces and keep their attacks unpredictable.

Furthermore, there is a high degree of randomness at neighborhood level in the casualties caused by militant attacks in urban centers controlled by the government. The predominant majority of casualties caused by militant attacks are civilians who are passersby and happen to be at the wrong place at the wrong time. Since militant groups cannot engage in conventional warfare with the government, particularly in the urban centers controlled by the government, they usually rely on suicide bombers or Improvised Electronic Devices (IEDs), in form of magnetic or roadside bombs, targeting government forces. Unfortunately, with the population congestion in urban centers, such attacks often kills and injures many more civilians than government military personnel. Militant groups' decision to plant an IED or launch a suicide attack on a military target at a specific point in time is independent of which civilians would pass by the target at the time of the attack. Although certain neighborhoods are more likely to be targeted, the civilians who are killed in those neighborhoods tend to be random.

It is also reasonable to assume that civilians killed or injured during an attack on a soft target such as a mosque or a hospital tend to be random as well. It is true that certain neighborhoods, for instance those with predominantly religious minorities, are in higher risk of being attacked by extremist militant groups. There are, however, numerous soft targets in such neighborhoods. In addition, a militant group's goal of staging such attacks is to cause harm to the minority group, rather than harming particular civilians from that group. In other words, a militant group's target is a particular group of people, instead of particular members of that group. The civilians who are killed or injured in an attack on a soft target, such as a hospital or a social gathering, are unlucky members of the group who tend to be

at that particular place at the time of the attack. A brief review of casualties caused by militant attacks in Kabul confirm the as-if random nature of casualties.

4.1 As-If Randomness of Casualties in Kabul

The armed conflict in Afghanistan has led to 49,798 civilian casualties over the past 10 year, killing 17,461 individuals and injuring 32,337 (UNAMA 2020). Kabul, Afghanistan's capital and the largest urban center, has suffered a disproportionate number of militant attacks and fatalities. Only in the sixteen months prior to this study, Kabul witnessed 147 attacks, which caused 1741 casualties. The predominant majority of casualties (82%), however, were civilians, and only 18% were military personnel (Figure 2).

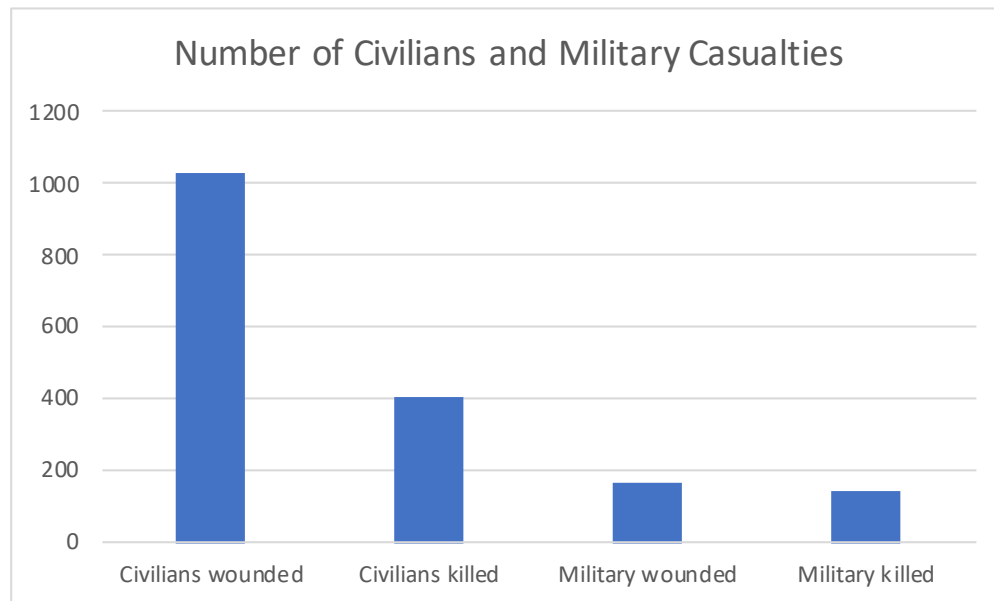
Furthermore, a breakdown of casualties by attack type shows that civilian and military casualties tend to be as-if random. Figure 3 presents the number of casualties in Kabul based on the types of attacks in the sixteen months prior to the survey— coded form ACLED data set. Only 3% of civilian casualties and 15% of military casualties were targeted and the result of assassinations. The military victims of assassination attacks tended to be soldiers or officers affiliated with the Afghanistan National Police (ANP) or National Security Directorate (NDS). The military victims were targeted and killed when commuting in the city. The civilian victims of assassinations were often prominent figures, such as members of parliament or well-known social and political activists. These attacks were pre-planned; victims were identified by militant groups in advance and targeted when opportunity allowed.¹ These targeted attacks, however, constitute a small proportion of militant violence and casualties in Kabul during the time period referred to in this survey.

The predominant majority of civilian casualties (87%) were almost random and the result of collateral damage or violence targeting minority groups. Collateral damage was responsible for 46% of civilian casualties. These incidents refer to the explosion of IEDs or suicide attacks by militant groups that targeted military personnel or vehicles but also resulted in the injury or killing of unlucky civilian who happened to be at the scene at the time of blast. It is reasonable to assume that militant groups' decision to plant an IED or to attack a military target at a specific point in time is independent of which civilians would pass by the military installation at the time of explosion.

Minority target (causing 40% of civilian casualties) refer to violence against social gatherings of minority groups or soft targets, such as hospitals or markets, in neighborhoods populated by minority groups. Although these attacks targeted religious minorities, mainly Hazaras and Sikhs, the casualties caused by such attacks were as-if random. It is true that

1. Interview with a retired officer from the National Security Directorate, September 20th, 2020.

Figure 2: Casualties in Kabul: March 2019 - July 2020

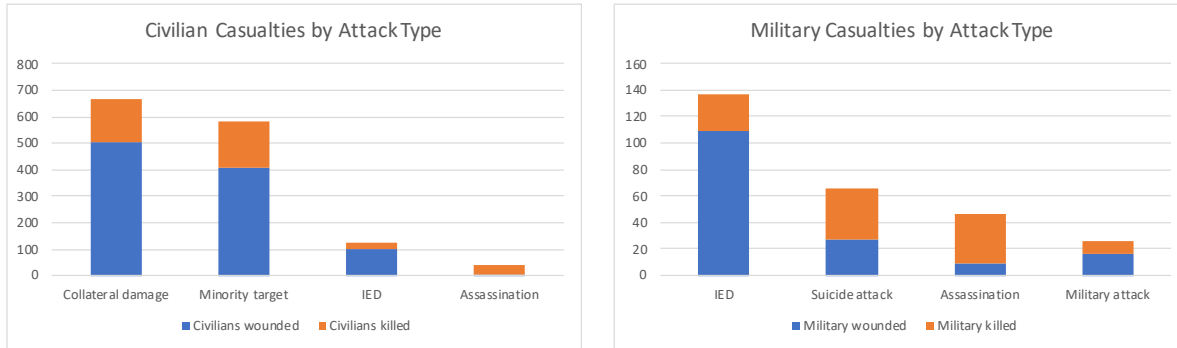


Source: ACLED data on violence in fatalities in Kabul.

certain neighborhoods, for instance those with predominantly Hazaras or Sikhs, faced higher risks of being attacked by extremist militant groups. There were, however, numerous soft targets in such neighborhoods. In addition, a militant group's goal of staging such attacks is to cause harm to the minority group, rather than harming particular members of that group. The individuals who were killed or injured in such attacks were unlucky members of the group who tended to be at that particular location at that particular time. The remaining 8% of civilian casualties were caused by IEDs that detonated in public places and killed or injured civilians only (Figure 3). These IEDs are usually planted to target military vehicles or personnel but are misplaced or fail to detonate when military vehicles pass by and instead cause civilian casualties.

There is also a degree of randomness in the military casualties caused by militant violence in urban centers controlled by the government. Conditional in being a military personnel in an urban center, being killed or wounded by a militant attack is almost random. As shown in Figure 3, 40% of military casualties are caused by IEDs, which include roadside bombs and magnetic bombs planted against military vehicles. The roadside bombs are usually planted on public roads and exploded remotely when a military vehicle passes by. The military casualties caused by such attacks are as-if random and depends on which military vehicle first passes the bomb. Magnetic bombs are planted against military vehicles when they commute through the city and members of militant groups have the opportunity to plant

Figure 3: Casualties in Kabul by attack type (March 2019 - July 2020)



Source: ACLED data on violence and fatalities in Kabul.

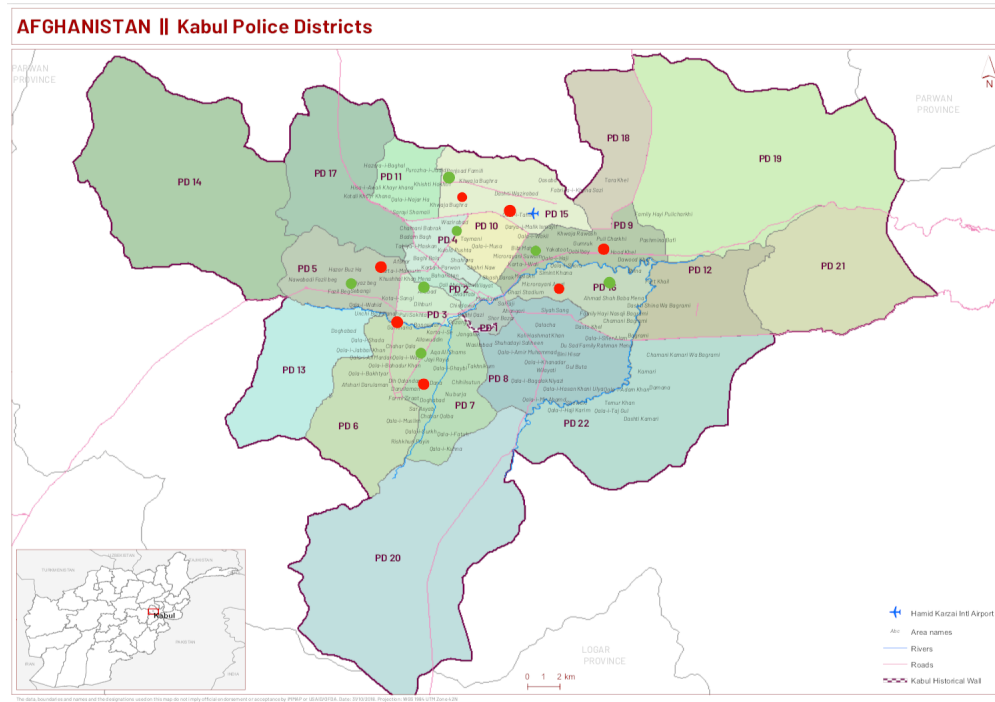
the bomb without being caught. There is a degree of randomness in the casualties caused by magnetic bombs since it depends whether militants get the opportune moment to implant a bomb on a military vehicle and on who is in the vehicle after a bomb is planted.² Similarly, the military casualties caused by suicide attacks against military compounds or vehicles are as-if random since being killed or injured in such attacks depends on the proximity to the blast when it happens. In sum, conditional on being a member of the military, being injured or killed in militant violence in an urban center controlled by the government is almost random. Only a small percentage of civilian and military casualties caused by militant attacks are targeted while there is a high degree of randomness in the predominant majority of casualties. I leverage the as-if random nature of casualties caused by militant violence to estimate the causal effect of exposure to violence on religious intensity.

5 Research Design

To assess the causal effect of exposure to violence on religious intensity, I ran a survey in Kabul, Afghanistan, in March and June of 2020. The survey was conducted in two groups of neighborhoods. As the first step, we selected high-risk neighborhoods, that is, the ones that experienced militant attacks and suffered civilian fatalities over the preceding 16 months. In the second step, each high-risk neighborhood was matched with an adjacent neighborhood. Two criteria were considered for selecting the second group. First, each matched neighborhood was adjacent to a high-risk neighborhood to ensure that it was similar to the high-risk neighborhood in terms of ethnic and socioeconomic background of its residents. Second,

2. Based on interviews with a retired officer from the National Security Directorate (NDS), the main intelligence service agency in Afghanistan.

Figure 4: Map of Kabul: Selected Neighborhoods



Note: map adopted from Foschini 2019. Red circles represent the high-risk neighborhoods, and green circles show the low-risk neighborhoods sampled for this survey.

the matched neighborhood had not experienced insurgent attacks in the same period. As a result, we selected seven high-risk neighborhoods and seven similar low-risk neighborhoods.³ These neighborhoods provide a sample that include the four main ethnic groups living in Kabul and the country (Pashtuns, Tajiks, Hazara and Uzbeks). Figure 4 shows the location of these neighborhoods. A random sample of respondents was interviewed in each low-risk and high-risk neighborhood as discussed below.

Selecting Kabul for the survey was based on a number of advantages. First, with the high frequency of militant attacks in Kabul, conducting the survey in the capital allowed sampling civilians who have recently been exposed to militant violence and suffered both types of violence – neighborhood-level violence and personal exposure to violence. Second, because of the importance of capital, violent activities in the city rarely go unreported in the

3. The high-risk neighborhoods consisted of Dasht-e Barchi, Charahi Qambar, Airport Road, Pol-e Charkhi Road, Pol-e Sokhta, Rishkhor, Darul Aman Road, and Charahi Shahid. Low-risk neighborhoods included Kampani, Makroyan Seh, Arzan Qimat, Karteh Naw, Wazir Abad, Khoshal khan, Qala Wazir, and Projeh Taimani.

media while violence in rural areas and other urban centers draw less attention and sometimes are not reported in the media. As a result, the existing data on violence in Kabul, which are based on media reports, are more accurate and reliable than the data on similar activities outside the capital. Having reliable violence data is essential for triangulating self-reports by respondents. Third, having lived in Kabul for over five years, I had knowledge of demographic and socioeconomic characteristics of neighborhoods, which was essential for identifying and matching neighborhoods. Finally, with increased insurgent activities, conducting surveys and collecting high-quality data was very challenging, if not impossible, outside the capital. Unable to travel outside Kabul, due to security concerns, I would not have been able to monitor the survey and ensure the integrity and quality of data if I had conducted the survey in other parts of the country.

The logic of surveying select neighborhoods, rather than a random sample from the entire city, is as follows. The high-risk neighborhoods were selected to ensure that the survey sample included enough respondents that had experienced personal exposure to violence. Since one of the two explanatory variables in this study is personal exposure to violence, a completely random sample of respondents from the entire city could have resulted in interviewing a small number of respondents personally exposed to violence. With selecting high-risk neighborhoods, I increased the chance of interviewing respondents that had experienced personal exposure to violence. In addition, selecting adjacent low-risk neighborhoods increased the chance of interviewing respondents who were similar to those in high-risk neighborhoods along key variables but were less likely to have been affected by violence. A cluster random sampling from the entire city would not ensure interviewing enough respondents who have personally been affected by militant violence and similar respondents without such experiences. In addition, matching high-risk neighborhoods with low-risk ones improves estimating the causal effect of neighborhood-level violence. It is still possible that residents of high-risk neighborhoods are systematically different from those in the matched low-risk neighborhoods. I check for such systematic differences in the analysis.

The survey was initially launched as face-to-face interviews in March 2020. The enumerators were sent to the sampled neighborhoods and relied on a random walk procedure to select the respondents. We conducted a total of 356 interviews before the Princeton IRB instructed the fieldwork to be stopped due to the spread of COVID-19 pandemic and the high risk of contracting the disease through face-to-face interactions. We resumed the survey in June 2020, moving from face-to-face to phone interviews. With the collaboration of Kabul Municipality, we obtained lists of around 5000 residents from the sample neighborhoods. The lists included the residents' names, phone numbers and *Gozar*, the locality in each neighborhood where the residents lived. We interviewed 1237 respondents randomly

selected from 5000 residents in the municipality lists. The phone interviews took around 15 minutes on average. Each respondents received 150 Afs (2 USD) for participating in the survey.

5.1 Measuring Key Variables

Religiosity was initially measured using an index that included participation in religious ceremonies – communal prayers and religious congregations – and personal practices, such as reading Quran or following Islamic programs on TV or radio. Since mosques were closed with the spread of COVID-19 pandemic, the phone survey focused on personal religious practices. A religiosity index was developed based on the following three questions:

- How frequently did you read the Quran over the past 7 days?
- How frequently did you listen to the Quran over the past 7 days?
- How frequently did you watch or listen to Islamic programs?

In addition, the survey included a measurement of belief in a protecting God. The question reflects the postulation that when individuals experience a diminished sense of control due to increased violence and insecurity, they express stronger belief in a controlling God that protects them from the chaos around them. The question asked respondents "Over the past one month, how many times did you feel that God protected you or your family from a serious danger?"

The explanatory variable, exposure to violence, was measured (1) using the data on violence at neighborhood level in Kabul and (2) using a battery of questions in the survey that measured personal exposure to violence. A number of data sets record the cases of insurgent attacks and their casualties in Kabul. I relied on ACLED data on violence, which provides a more comprehensive coverage of violence in Kabul than other data sets.⁴ The advantage of violence data is that they do not suffer from recollection bias, which may be the case with self-reports by respondents (Niwa et al. 2016). Since the violence data are based on media reports, their disadvantage is that they usually tend to capture major acts of violence and exclude minor incidents. The advantage of self-report data on violence collected in a survey is that they capture the exposure to violence at individual level and the intensity of personal exposure to violence.

4. The ACLED data are usually recorded at police district (PD) level, and rarely at a fine-grained level such as neighborhood. Kabul has 13 PDs, with each PD covering multiple neighborhoods. I used local news reports to code the violence data at neighborhood level as far as possible.

The survey included a module that measured personal exposures to various types of violence. Personal exposure to violence refers to the incidents of violence that directly affect an individual through personal exposure. Personal exposure to violence includes (1) seeing dead bodies, (2) personal injury, (3) damage to property, (4) a household member's injury or death, (5) a relative's injury or death, or (6) a friend's injury or death as a result of violence. In this paper, I refer to this type of violence as *personal exposure*.

Two variables are constructed to measure personal exposure. One variable is binary and equals 1 if a respondent has experienced one of the six items mentioned above, and 0 otherwise. This variable is referred to as *personal exposure* in the analysis. The second variable measures the frequency of such incidents and is referred to as *exposure frequency*. For this measure, we add the number of times an individual has experienced each of the six items. An ideal approach would be ranking or assigning weights to each type of violence, based on its intensity. Since we do not know how respondents weigh these different types of violence, we take into account their frequency only, without assigning weights to them.

To measure attitudes toward Islamist militant groups, the survey focused on the policies promoted by the Taliban, the main Islamist militant movement in Afghanistan. To mitigate social desirability bias, the survey asked respondents' views about policies promoted by the Taliban, instead of asking directly about the Taliban. Based on the following three questions, we developed a support scale, averaging the support for three policies endorsed by the Taliban.

- Some people believe that a female patient may go to doctor and seek treatment only with the permission of her husband. Taliban also agree with this view. What is your opinion?
- Some people think that Polio vaccine is not essential for children's health. Taliban also support this view. What is your opinion?
- Some people believe that a female patient may go to doctor and seek treatment only with the companion of his male household head. Taliban also agree with this view. What is your opinion?

Based on the answer to these three questions, we may not be able to differentiate the support for the Taliban from the support for the stated policies. However, since the three policies asked about are actually promoted by the Taliban in the area they control, the support scale provides a reasonable measure of support for the Taliban. The position on these issues constitute a stark difference between the Afghanistan government, which tries to champion children and women's rights, and the Taliban movement whose ideology is based on a highly conservative interpretation of Islam.

5.2 Statistical Model

The following equation is utilized to assess the effect of violence on religious intensity.

$$Y_i = \beta_0 + \beta_1 Violence_i + \beta_2 Neighborhood_i + \beta_3 X_i + \epsilon_i \quad (1)$$

Y represents the dependent variable, measured through religiosity index. For neighborhood-level violence, $Violence_i$ equals 1 if the respondent i lives in a high-risk neighborhood and 0 otherwise. It also refers to the frequency of respondent i 's exposure to neighborhood-level violence as reported by the respondent. For personal exposure, $Violence_i$ equals 1 if a respondent was exposed to one of the six types of violence. $Neighborhood$ is a vector of neighborhood fixed effects. X is a vector of control variables measured in the survey and includes income, age, education, ethnicity, and marital status. ϵ_i represents the random error.

5.3 Hypotheses

The following hypotheses were developed based on the theoretical framework presented in Section 3.

- H1: respondents who are exposed to neighborhood-level violence express stronger religious beliefs and follow religious practices more frequently compared to those who are not exposed to neighborhood-level violence.
- H2: respondents who suffered from personal exposure to violence express stronger religious beliefs and follow religious practices more frequently compared to those who did not have such experiences.
- H3: intensified religiosity after exposure to violence is independent of support for the Taliban. Those who are more supportive of the Taliban – above the median of support scale – and those who are less supportive – below the median of support scale – follow religious practices more frequently after exposure to violence.
- H4: respondents who lost family members or relatives due to illness since the spread of COVID-19 express stronger religious beliefs and more frequent adherence to religious practices.

5.4 Additional Test of Theory

The spread of COVID-19 provided another mechanism for testing the theory since it also led to an increased mortality but was independent of militant attacks. Since the baseline survey coincided with the spread of COVID-19 pandemic to Afghanistan, the increase in mortality due to the pandemic provided another test of the theory. Like wars, the spread of COVID-19 led to a sudden increase in mortality, death anxiety, and a diminished sense of control among the affected populations. The increased mortality, however, was independent of militant attacks in Kabul.

To test whether and to what extent the spread of COVID-19 and deaths related to the pandemic affected religious intensity, the survey collected information on whether the respondents' household members were affected by COVID-19 and whether any of their friends or family members passed away due to illness. Hypothesis 5 relates to this additional test of the theory.

6 Comparing low-risk and high-risk neighborhoods

Before discussing the survey findings, this section compares the high-risk and low-risk neighborhoods in terms of exposure to violence and religiosity as reported by the respondents. Consistent with the expectation of the proposed theory, residents of Kabul are frequently exposed to violence and report high levels of death anxiety. Table 2 summarizes the descriptive statistics. Personal exposure to violence – having personally seen dead bodies, having gotten injured, or having a family member, relative or friends being injured or killed in attacks – is common, with median of personal exposure being 2. Although the distribution of personal exposure to violence is right-skewed (with larger mean than median), the distribution of thinking about death and thinking about afterlife is left-skewed with medians of 7 and 8. Around 50% of respondents thought about death and afterlife more than 7 times in the 7 days prior to the survey, that is, at least once a day. In addition, the medians of reading the Quran, and listening to the Quran on radio or TV over the preceding 7 days are 2 and 3 respectively. Religiosity index present the total number of times that a respondent read the Quran, listened to the Quran and followed Islamic programs on TV or radio. The median for religiosity index shows that around half of the respondents followed these activities 8 times or more in the previous 7 days. The descriptive statistics highlight the high frequency of violence, death anxiety and frequent religious activities among the respondents.

There are major differences in the frequencies of fatalities and exposure to violence due to militant attacks in high-risk and low-risk neighborhoods. The survey asked the respondent

Table 2: Descriptive statistics

	Mean	Median	Std. Dev.	Min	Max	N
Personal exposure frequency	4.530	2	7.960	0	70	1,589
Think about death	6.650	7	3.770	0	10	1,589
Think about afterlife	6.780	8	3.750	0	10	1,589
Read Quran	3.210	2	3.370	0	10	1,589
Listen Quran	3.360	3	3.200	0	10	1,589
Follow Islamic programs	2.660	2	2.930	0	10	1,589
Religiosity index	9.240	8	6.540	0	30	1,589

Based on the survey data.

about exposure to violence during the twelve months preceding the survey. Since the face-to-face interviews (around 20% of total interviews) were conducted in March 2020 and the phone interviews were conducted in June of 2020, the ACLED data, summarized in Table 3, covers the period of March 2019 to June 2020. In that period, a total of 147 attacks were launched by militants in Kabul. Of those, 36 attacks were most fatal and were conducted in high-risk neighborhoods resulting in 353 fatalities, compared to the total of 508 fatalities for the entire city. Most attacks conducted outside the high-risk neighborhoods had no or just one fatality.

Table 3: Fatalities from Militant Attacks

Area	Fatalities	Casualties
High-risk neighborhoods	349	1337
Low-risk neighborhoods	7	38
Other neighborhoods	193	54
Entire Kabul	549	1429

Source: ACLED data on violence and fatalities in Kabul, Afghanistan, March 2019 to June 2020.

The data collected in the survey are consistent with the ACLED data. When asked how many attacks happened in their neighborhoods, the median of reported events is 0 for those in low-risk neighborhoods and 3 for those living in high-risk neighborhoods. Furthermore, residents of high-risk neighborhoods were significantly more likely than those in low-risk neighborhoods to have suffered personal exposure to violence. The median of personal exposure is 1 for those in low-risk neighborhoods and 3 for those in high-risk neighborhoods (Table 4). As expected, personal exposure to violence travels beyond neighborhood boundaries. The

median of exposure to violence is larger than 0 for those living in low-risk neighborhoods since they may have friends or relatives living in high-risk neighborhoods who had been injured or killed in a militant attack.

More importantly, those living in low-risk and high-risk neighborhoods look similar in terms of socioeconomic and demographic characteristics. As summarized in Table 4, although the residents of high-risk and low-risk neighborhoods differ in their exposure to violence, the two groups are similar. There is no statistically significant difference among them in terms of age, education and watching TV. The latter measures the respondents' awareness of the news and their engagement with the media. The only difference is in income with those in high-risk neighborhoods reporting a slightly higher income than the residents of low-risk neighborhoods. To account for this imbalance, all analyses control for income and other demographic characteristics.

Table 4: Comparing Low-Risk and High-Risk Neighborhoods

	low-risk	high-risk	test	<i>p-value</i>
Median number of attacks (self-report)	0	2	Mood's Median	< 0.001
Personal exposure (median)	1	3	Mood's Median	< 0.001
Income (median)	9500	10000	Mood's Median	0.002
Age (median)	38	38	Mood's Median	0.48
Education (median)	3	3	Mood's Median	0.97
Watch TV (median)	7	7	Mood's Median	0.44

7 Results

This section presents and discusses the results of the survey in three subsections. The first subsection presents the main results, discussing the effects of personal exposure to violence and neighborhood-level violence on religious intensity. The second subsection presents a number of robustness checks. The third subsection offers a sensitivity analysis of the main findings. The following subsection discusses desensitization as an explanation for the differential effects of personal exposure to violence and neighborhood-level violence. The fifth subsection examines the relationship between support for militants and religious intensity. The last subsection explores the relationship between deaths due to Covid-19 and religious intensity as an alternative test of the theory.

7.1 Main Results

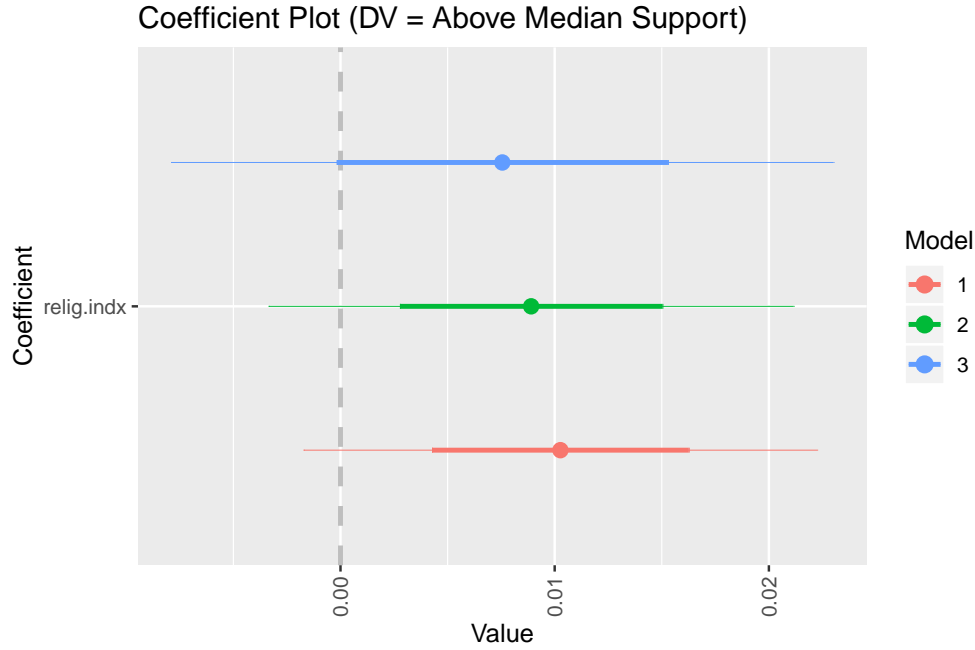
First, we investigate the relationship between religiosity and support for militants, which has been the focus of political science scholarship. Figure 5 summarizes the results. There is no significant relationship between religiosity index and being a supporter of the Taliban (being above the median on the index of support for the Taliban). Even among those who live in low-risk neighborhoods, as summarized in model (3), there is no relationship between religiosity and support for the Taliban. These findings are consistent with those of other surveys which found no relationship between adherence to religious practices and support for Islamist militancy in other Muslim-majority countries (Tessler and Nachtwey 1998; Haddad 2003; Fair, Littman, and Nugent 2018; Fair, Malhotra, and Shapiro 2012; Fair, Ramsay, and Kull 2008; Kaltenthaler et al. 2010; Shapiro and Fair 2010). Subsection 7.5 explores the relationship between religious intensity and support for the Taliban in more details.

Next, we examine the reverse relationship between violence and religiosity, that is, the effects of personal exposure to violence and neighborhood-level violence on religious intensity. The relationship between personal exposure to violence and religious intensity is presented in Figure 6. In Panel A, the independent variable, personal exposure, is coded 1 if a respondent reported damage to property, having seen dead bodies, or having a family member, relative or a friend killed or injured in an attack, and 0 otherwise. Panel B explores the effect of frequency of exposure to violence, referring to the total number of times a respondent had experienced personal exposure to violence.

As reported in both panels, personal exposure to violence is associated with increased religiosity. Model (1) of Panel A presents the results of OLS regression, showing that having experienced personal exposure to violence is associated with almost two units increase in the number of times a respondent engaged in the three religious activities measured by the religiosity index. The mean of religiosity index for those without personal exposure to violence is around 8 and the mean for those with exposure to violence is around 10.

Model (2) replicates the same specifications as in model (1) but includes neighborhood fixed effect to control for any systematic differences in neighborhoods that could affect exposure to violence and religious intensity. As shown in the figure, when the model includes demographic controls and fixed effects for neighborhoods, not only the coefficient for personal exposure remains statistically significant but the magnitude of the coefficient slightly increases as well. The dependent variable for model (3) is the sum of first two components from principal component analysis (PCA) of the religiosity index. These two components count for 80% of variation in the religiosity index. The coefficient of personal exposure is positive and statistically significant when using the components of PCA.

Figure 5: Religiosity and support for the Taliban

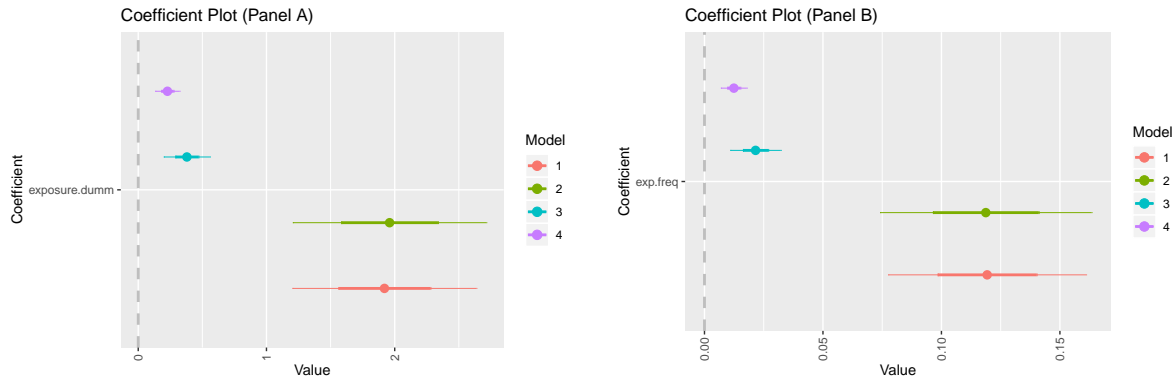


Note: the dependent variable is being above the median on the additive index of support for the Taliban. The independent variable is the religiosity index. All models use probit regressions and control for income, education, age, ethnicity, and marital status. Model (2) also includes neighborhood fixed effects. Model (3) includes only the respondents from low-risk neighborhoods.

Religiosity index has a right-skewed distribution, rather than normal distribution, and demonstrates overdispersion (with mean = 9.2 and Standard Deviation = 42). Figure 12 in the Appendix shows the distribution of religiosity index. The advantage of using OLS regression is in providing coefficients the interpretations of which are easy and intuitive. Since the dependent variable consists of count data with overdispersion, negative binomial regressions provides a better estimate of the coefficient although its interpretation is not as intuitive as with OLS regressions. To ensure that the results are robust to using negative binomial regression, model (4) presents the same specifications as in model (2) but with negative binomial regression. The coefficients represent the increase in log count of religiosity index score when a respondent reports having experienced personal exposure to violence. In this model, the coefficient for personal exposure shows 0.223 increase in log count of religiosity index score, which translates into 24% increase in religious practices as measured by the religiosity index.

Panel B replicates the same models as in Panel A but with *exposure frequency* as the

Figure 6: Personal exposure to violence and religious intensity

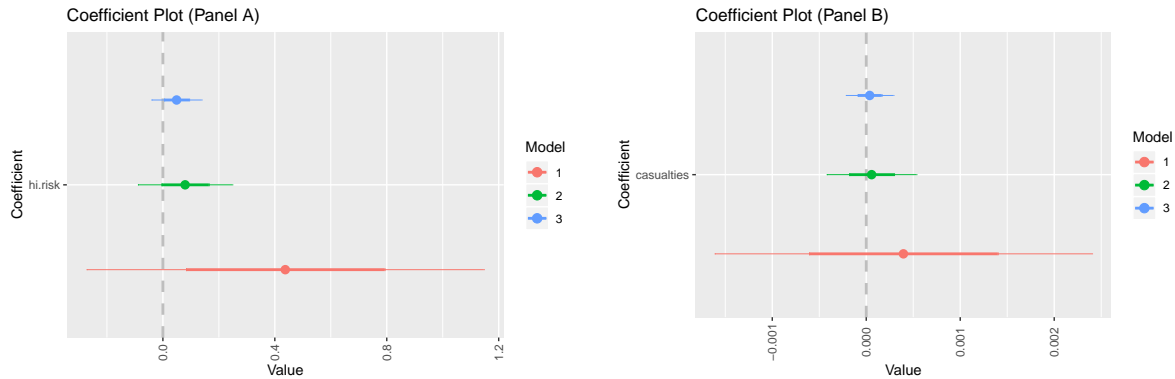


Note: the independent variable for Panel A is exposure to violence and for Panel B is exposure frequency. The dependent variable for all models, with the exception of Model (3) is religiosity index. The dependent variable for Model (3) is the sum of first two components from principle component analysis of religiosity index, counting for 80% of variation in the index. Model (1) controls for marital status, income, education, age, and ethnicity. Model (2) adds neighborhood fixed effects. Model (3) replicates model (2) but with the first two components of principle component analysis. Model (4) replicates Model (2) but utilizes negative binomial regression instead of OLS. Religiosity index refers to the total number of times a respondent read the Quran, listened to the Quran or followed Islamic programs over the past 7 days. The results are also presented with more details in Table 8 of the Appendix.

explanatory variable. The coefficients represent the increase in the religiosity index with one unit increase in the number of times experiencing personal exposure to violence. The results are consistent with those in Panel A. The two panels suggest that personal exposure to violence leads to religious intensification. The results of both panels are presented with more details in Table 8 of the Appendix.

Figure 7 presents the relationship between neighborhood-level violence and religious intensity, using two different measures: (1) living in a high-risk neighborhood and (2) casualties caused in a neighborhood by militant attacks. Panel A shows the effect of living in a high-risk neighborhood on religiosity while Panel B explores the effect of casualties at neighborhood level on religiosity. As summarized in Panel A, there is no relationship between living in a high-risk neighborhood and religiosity. Panel B provides further insights since it takes into account the number of casualties caused by militant attacks in a neighborhood, rather than just living in a high-risk neighborhood. Similar to Panel A, there is no relationship between neighborhood-level violence (casualties) and religious intensity. The results are consistent whether using the religiosity index, as in model (1), or the first two components of principal

Figure 7: Neighborhood-level violence and religious intensity



Note: the independent variable for Panel A is living in high-risk neighborhood and for Panel B is the total number of casualties in a neighborhood. The dependent variable for models (1) and (3) is religiosity index and for model (2) is the sum of first two components from principle component analysis of religiosity index, counting for 80% of variation in the index. All models include demographic controls. Models (1) and (2) are based on OLS and (3) based on negative binomial regression. Religiosity index refers to the total number of times a respondent read the Quran, listened to the Quran or followed Islamic programs over the past 7 days. The results are also presented with more details in Table 9 of the Appendix.

component analysis, as in model (2), or using negative binomial regression instead of OLS, as in model (3).

Overall, the results highlight that personal exposure to violence is associated with a statistically significant increase in religiosity, but there is no relationship between neighborhood-level violence and religiosity. Having seen dead bodies, having been injured, or having family members, friends or relatives who had been killed or injured in militant violence is strongly associated with religious intensity, but living in high-risk neighborhoods seem to have no effect on religiosity.

7.2 Robustness Checks

This section provides a number of robustness checks to ensure that the results are robust to using different models and specifications. First, I check the appropriateness of using negative binomial regressions instead of Poisson regressions. The relationship between personal exposure to violence and religiosity is examined running Poisson regressions, summarized in the Appendix, Table 10. The test of overdispersion is statistically significant. With a positive and statistically significant Alpha, the use of negative binomial regression is justified in lieu

of Poisson regression. Furthermore, the coefficients of personal exposure in Poisson regressions are positive and statistically significant and similar in magnitude to those of negative binomial regressions.

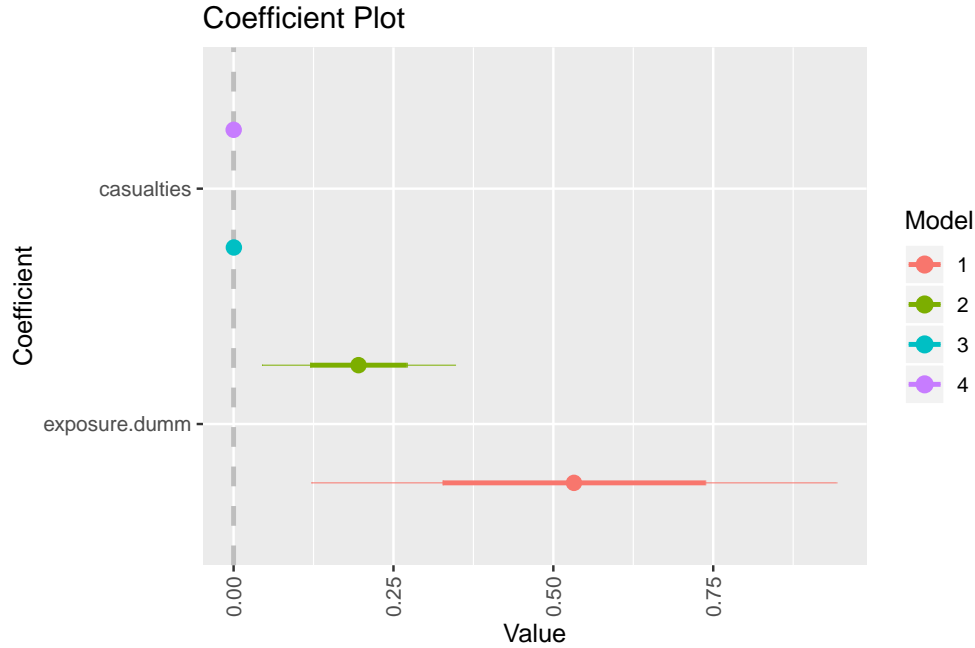
Second, exposure to violence is regressed on each element of religiosity index to make sure the results are not driven by just one element of religiosity index. The results are reported in the Appendix, Table 11. The relationship between personal exposure and each indicator of religiosity (reading the Quran, listening to the Quran, and following Islamic program) is positive and statistically significant. The largest magnitude is for following Islamic programs. The findings highlight a consistent pattern: more adherence to religious practices after personal exposure to violence.

Furthermore, I conduct an analysis, focusing on the respondents of high-risk neighborhoods. Although Table 4 shows that those who live in high-risk and low-risk neighborhoods are similar in terms of demographic and socioeconomic characteristics, it is still possible that the two groups differ in terms of variables not captured in the survey. For instance, those living in high-risk neighborhoods may be more likely than residents of low-risk neighborhoods to take risks and be exposed to militant violence. In that case, exposure to violence is not as-if random and rather affected by a systematic difference between the two groups. Such a difference could bias estimating the causal effect of exposure to violence on religiosity.

To rule out this alternative explanation, I limit the analysis to the respondents living in high-risk neighborhoods only. Assuming that risk taking affects individuals' decisions where to reside, those living in high-risk neighborhoods should be similar in terms of risk taking even if they are more risk takers compared to the residents of low-risk neighborhoods. Within the high-risk neighborhoods, there are many government offices, military checkpoints and soft targets, such as mosques, hospitals, and public places. Furthermore, there is usually a high degree of uncertainty about which of these potential targets will be attacked next. The civilians injured or killed in a militant attack in a high-risk neighborhood are the unlucky residents of the neighborhood who happen to be at the wrong place at the wrong time. Thus, it seems that within the high-risk neighborhoods, being injured or killed is almost random.

Table 12 in the Appendix presents the results of OLS regression with a linear interaction of high-risk neighborhoods and personal exposure to focus on residents of high-risk neighborhoods. Column (1) uses religiosity index as the dependent variable while column (2) includes the first two components from principal component analysis of religiosity index. In both models, personal exposure is positive for residents of high-risk neighborhoods (adding the coefficient of *Personal exposure* and the interaction term). Furthermore, the interaction term is not significant in either specification. It shows that living in high-risk neighborhoods does not moderate the effect of personal exposure to violence on religious intensity. In

Figure 8: Violence and belief in God’s protection



Note: dependent variables represent the number of times a respondent believe that God protected him or his family from a serious danger over the past one month. Independent variable for models (1) and (2) is personal exposure to violence and for models (3) and (4) is the number of casualties in a neighborhood due to militant attacks. All models control for marital status, income, education, age, and ethnicity. Models (1) and (3) use OLS regressions while (2) and (4) represent negative binomial regressions. Table 13 in the Appendix presents these results with more details.

other words, those living in high-risk neighborhoods also experience religious intensity after personal exposure to violence.

Next, I concentrate on neighborhood-level violence and use fatalities, instead of casualties, as an alternative measure of neighborhood-level violence. The results are reported in the Appendix, Table 16. The table replicates the specifications of Panel B in Table 9. Similar to casualties, fatalities in a neighborhood seem to have no effect on residents’ religiosity.

Finally, we examine the effect of exposure to violence on an attitudinal measure of religious intensity, that is, the belief in God’s protection. On the one hand, if personal exposure to violence affects religious intensity, its impact should be observed not only in religious practices, measured by religiosity index, but also in religious beliefs expressed by the respondents. As discussed in Section 3.2, civilians are expected to express stronger beliefs in a controlling God when exposed to violence. In the context of armed conflicts, the expectation

is that individuals would believe more strongly in a God that protects them and their families as violence increases and more individuals are killed or injured around them. Beliefs in a protecting God would help civilians better cope with the diminished sense of control and anxiety they experience after personal exposure to violence. On the other hand, if Kabul residents are desensitized to neighborhood-level violence and do not experience a diminished sense of control, neighborhood-level violence should not affect their belief in a protecting God.

Figure 8 presents the results. The dependent variable represents answers to the following question: "Over the past one month, how many times did you feel that God protected you or your family from a major danger?" Since answers to this question follows a right-skewed distribution, I use both OLS and negative binomial regressions. Consistent with the main results of this study, personal exposure to violence is positively associated with increased belief in God's protection. Those who have personally been exposed to violence show on average half unit increase in the number of times that they believe God protected them or a member of their family from a serious danger over the past one month. Since the belief in God's protection is right-skewed, comparing the median provides more insights. The median number of times believing God's protection for those without personal exposure to violence is 1 while the median for those with personal exposure is 2.⁵ The number of casualties in a neighborhood, however, seems to have no effect on the belief in God's protection. In sum, personal exposure to violence seems to lead to religious intensification (whether measured in terms of religious practices or religious beliefs), but neighborhood-level violence does not seem to affect religiosity.

7.3 Sensitivity Analysis

Although the pattern of casualties caused by militant attacks is "as-if" random and the main results of this study are robust to using different robustness checks, there is still a possibility that certain unobserved confounders are responsible for the observed effect of exposure to violence on religiosity. To test how robust are the findings to the inclusion of unobserved confounders, this section presents the result of a sensitivity analysis developed by Cinelli and Hazlett 2020.⁶ Their method assesses how strong a particular confounder (or group of confounders) is needed to bring down the estimated effect to zero and change the results of the study. In addition, we can use a benchmark (a strong observed predictor) to explore whether a similar or stronger unobserved confounders could reduce the estimated effect to

5. The difference is statistically significant with $X^2 = 15.875$, $df = 1$, $p\text{-value} < 0.001$.

6. The sensitivity analysis presented in this section were produced using the package *sensemakr* also developed by Cinelli and Hazlett.

Table 5: Sensitivity analysis 1: religiosity index as outcome

Treatment:	Est.	S.E.	t-value	$R^2_{Y \sim D \mathbf{X}}$	$RV_{q=1}$	$RV_{q=1, \alpha=0.05}$
<i>exposure.dumm</i>	1.96	0.377	5.198	1.8%	12.8%	8.2%
df = 1434	<i>Bound (1x age): $R^2_{Y \sim Z \mathbf{X}, D} = 2.4\%$, $R^2_{D \sim Z \mathbf{X}} = 0.9\%$</i>					

zero.

I use *age* and being ethnically *Hazara* as two benchmarks to assess whether similar or stronger omitted variables could eliminate the effect of exposure to violence on religiosity. Although casualties caused by militant attacks were almost random, age and being Hazara are strong predictors of being exposed to violence. Being more mobile and commuting more frequently in the town, the younger are more likely to having been injured, having seen dead bodies, or having had friends killed or injured as a result of militant attacks. Not surprisingly, *Age* remains a statistically significant predictor of exposure to violence after including other demographic controls and neighborhood fixed effects. Similarly being a member of Hazara ethnic group is a strong predictor of being exposed to violence. Forming the only Muslim minority sect in Afghanistan, Hazaras are Shia and have been a prime target of Sunni militant attacks in Kabul. Around 73% of Hazara respondents reported to have been exposed to violence compared to 64% of other ethnic groups (with p-value of < 0.004).

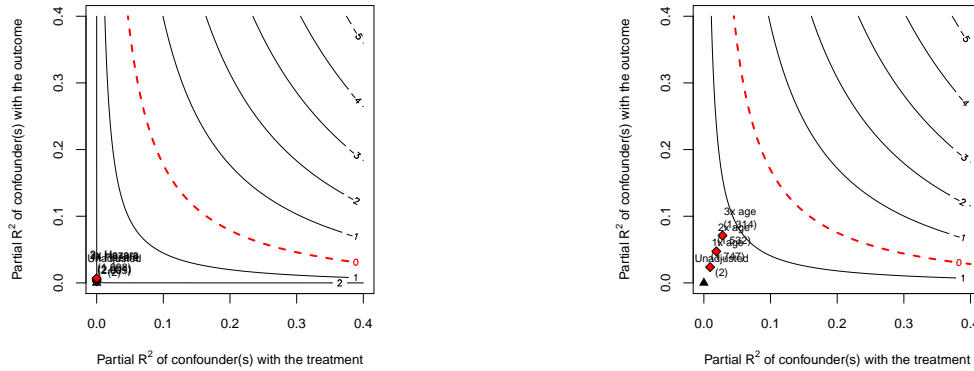
Table 6: Sensitivity analysis 2: religiosity index as outcome

Treatment:	Est.	S.E.	t-value	$R^2_{Y \sim D \mathbf{X}}$	$RV_{q=1}$	$RV_{q=1, \alpha=0.05}$
<i>exposure.dumm</i>	2.018	0.346	5.826	2.1%	13.7%	9.3%
df = 1564	<i>Bound (1x Hazara): $R^2_{Y \sim Z \mathbf{X}, D} = 0.3\%$, $R^2_{D \sim Z \mathbf{X}} = 0.5\%$</i>					

Table 5 and Table 6 report the result of sensitivity analyses. In Table 5, the Robustness Value (RV) for age is 12.8%, which indicates that a confounder that could explain at least 12.8% of residual variation in both outcome and treatment is needed to reduce the coefficient of exposure to violence to zero. However, a confounder that is as strong as age could explain only 2.4% of residual variation in outcome (partial R^2 of Y and Z) and 0.9% of residual variation in the treatment (partial R^2 of D and Z). Since the sum of reported partial R^2 is 3.5% and much smaller than 12.8%, if a confounder as strong as age were included in the model, it would not eliminate the coefficient of exposure to violence to zero. Similarly in Table 6, a confounder as strong as *Hazara* would count for 0.3% of residual variation in the outcome and 0.5% of residual variation in the treatment, which is much smaller than RV of 13.7%.

Figure 9 presents the sensitivity contour plots for the point estimate (coefficient of exposure to violence) with *Hazara* and *Age* as benchmarks. The red dotted lines reflects the

Figure 9: Sensitivity contour plots of point estimate



Note: The left graph shows the sensitivity contour plot for point estimate (exposure to violence) with *Hazara* as the benchmark. The right graph is the sensitivity contour plot for the point estimate (exposure to violence) with *Age* as the benchmark.

values of partial R^2 needed to bring down the point estimate to zero. The left plot shows that a confounder three times as strong as *Hazara* cannot reduce the point estimate to 1, let alone 0. The right plot shows that a confounder three times as strong as *Age* would reduce the point estimate to 1.3, which is far from 0. Figure 13 in the Appendix explores the sensitivity contour plot of the t-value. The plots indicate that the statistical significance of coefficient for exposure to violence is robust to confounders as strong as, or three times as strong as, *Age* and *Hazara*.

Finally, I explore the extreme scenarios, confounders with exceptionally extreme explanatory powers. Figure 15 in the Appendix shows the analysis of extreme scenarios. The left plot indicates that a confounder that could explain 100% of the residual variation in the outcome and is three times as strong as *Hazara* would not reduce the point estimate for exposure to violence to zero. The right panel shows that a confounder that is as strong as age and explains 100% of the residual variation in outcome would not eliminate the effect of exposure to violence. Only if such a confounder is two times as strong as age and explains more than 70% of the residual variation in the outcome would be able to change the results of the study. The sensitivity analysis show that the observed effect of exposure to violence on religiosity is pretty robust to confounders and the inclusion of plausible omitted variables.

7.4 Violence and Desensitization

The results presented so far show that the respondents experience religious intensity after personal exposure to violence but do not have such an experience with neighborhood-level

violence. These findings suggest that Kabul residents are desensitized to neighborhood-level violence but demonstrate emotional and cognitive responses to personal exposure to violence. To examine whether the different responses to neighborhood-level violence and personal exposure to violence reflect desensitization to violence, we use a psychological well-being measurement included in the survey. Although the survey could not include a comprehensive module for assessing psychological well-being due to the limited number of questions that could be asked over the phone, the respondents were asked how frequently they were (1) sleep restless, (2) happy, and (3) sad over the past 7 days. The responses were coded from 1 to 4, where 1 refers to the lowest level of psychological well-being and 4 the highest. The psychological well-being index is based on the mean of responses to the three questions.

The results are reported in Figure 10. Overall, exposure to violence is associated with decline in psychological well-being. There is, however, a large difference in the magnitude of coefficients for personal exposure compared to neighborhood-level violence. Personal exposure to violence is associated with a much larger decline in psychological well-being. Being personally exposed to violence is correlated with a quarter of unit decline in psychological well-being index. Although the coefficients for living in high-risk neighborhood and for casualties at neighborhood are also negative, they are much smaller in magnitude and statistically not significant. These findings highlight that the respondents' responses to neighborhood-level violence is very modest, but personal exposure to violence affects them more profoundly.

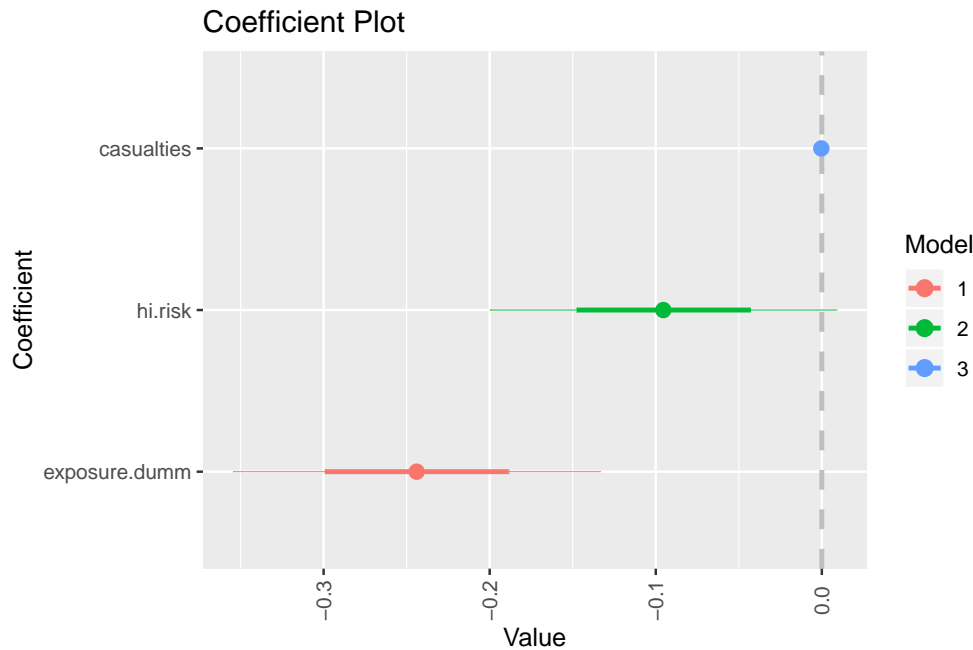
This analysis suggests that the respondents experience psychological distress in response to personal exposure to violence but are to some extent desensitized to neighborhood-level violence. While individuals in places without armed conflicts may react strongly to explosions and casualties in their cities, Kabul residents seem to have been relatively desensitized to such violence. The high frequency of neighborhood-level violence seem to have led to some degree of desensitization among Kabul residents. They, however, demonstrate a strong reaction when violence affects them personally.

These findings may explain why neighborhood-level violence seems to have no effects on religious intensity. Those who experience personal exposure to violence feel psychological distress and rely on religious beliefs and practices for coping, but neighborhood-level violence does not cause strong psychological distress and the need for religious coping.

7.5 Support for Militants and Religiosity

This subsection explores the relationship between support for Islamist militants and religiosity in more details. First, it examines the causal path emphasized in the scholarship,

Figure 10: Violence and psychological well-being



Note: dependent variable represents the score on psychological well-being index. Exposure.dumm equals 1 if a respondent was injured or had a family member, relative or friend killed or injured in a militant attack – and 0 otherwise. Hi.risk equals 1 if a respondent lives in a high-risk neighborhood, and 0 otherwise. Casualties refers to the number of individuals killed or injured in a neighborhood by militant attacks. All models control for marital status, income, education, age, and ethnicity. Model (1) include neighborhood fixed effects. Table 14 in the Appendix presents these results with more details.

that is, religiosity driving support for militancy and Islamist militant groups. Table 7 shows the relationship between support for the Taliban and religiosity index, with and without personal exposure to violence. Those below and above the median of support scale are not statistically different in terms of religiosity. The median of religiosity index is almost the same for both groups. There is no statistically significant differences between the two groups with and without exposure to violence (row 4 of Table 7). This explains why there is no significant relationship between religiosity and support for the Taliban, as it was reported in Figure 5.

More importantly, both groups (those below and above median of support index) tend to engage more in religious practices in case of personal exposure to violence. The medians for both groups increases by more than 25% (from 7 to 9 and 10) when experiencing personal exposure to violence. The increase in religiosity is statistically significant for both groups –

Table 7: Support for Taliban and Religiosity

Group	Religiosity Index (median)		Test	<i>p-value</i>
	Without exposure	With Exposure		
Below Median Support	7	9	Mood's median	< 0.01
Above Median Support	7	10	Mood's median	0.02
<i>p-value</i> (between groups)	0.19	0.18	Mood's median	

The two groups represent those below or and above the median of the support scale. "With exposure" refers to those who have reported personal exposure to violence and "Without exposure" refers to those without such experiences. Since religiosity scale is right-skewed, the table compares the medians, instead of means between the two groups. P-values in the fifth column refer to test of difference in the distribution of religiosity index within each group – with or without personal exposure to violence – while the p-values in the fourth row relate to the difference across the two groups.

with their respective p-values listed in column 5.

The descriptive statics in Table 7 provide preliminary evidence consistent with the argument about the reverse causal relationship between violence and religiosity postulated in the theoretical framework. Not only those with more and less support for the Taliban are similar in terms of religiosity, but both groups report intensified religiosity after personal exposure to violence. Table 15 provides a more rigorous examination of the relationship between religiosity and support for the Taliban, controlling for demographic characteristics and including neighborhood fixed effects. In all three models, there is no statistically significant relationship between religiosity and support for the Taliban.

The increase in religiosity in both groups explains the puzzle discussed in the introduction. Exposure to violence leads to religious intensity regardless of support for Islamist militant groups. That is why Muslims living in countries affected by armed conflicts are more religious than Muslims in peaceful countries while individual-level indicators of religiosity do not predict support for Islamist militant groups. The puzzle is explained by the reverse causal relationship between religiosity and exposure to violence.

7.6 Additional Test of Theory

The relationship between deaths due to the COVID-19 pandemic and religious intensity provides another test of the theory. Like armed conflicts, the COVID-19 pandemic led to an unusual increase in mortality. The sudden spike in mortality due to the COVID-19 pandemic should also lead to death anxiety and a diminished sense of control among affected households. At the same time, the deaths resulting from the COVID-19 disease

are not related to the armed conflict and, if uncorrelated with the fatalities due to militant attacks, would provide another mechanism for testing the implications of the theory.

Afghanistan experienced the peak of reported COVID-19 cases from early May to June 20th, 2020 (Roser et al. 2020). The phone survey was launched in the second week of June and coincided with the sudden growth of COVID-19 cases in the country. Since Afghans felt uncomfortable disclosing contraction of the COVID-19 disease and reporting deaths due to this illness, the survey asked the respondents how many of their family members, relatives, and friends had died because of an illness within the past three months. Around 2% of the respondents reported that at least one member of their household had died because of illness. Around 75% of them reported that at least one of their friends or relatives had died of illness within the past three months. Around 30% reported that at least 3 of their friends or relatives had died because of illness in that period. I developed an index of mortality due to illness by adding the number of family members, friends, and relatives having passed away due to illness.

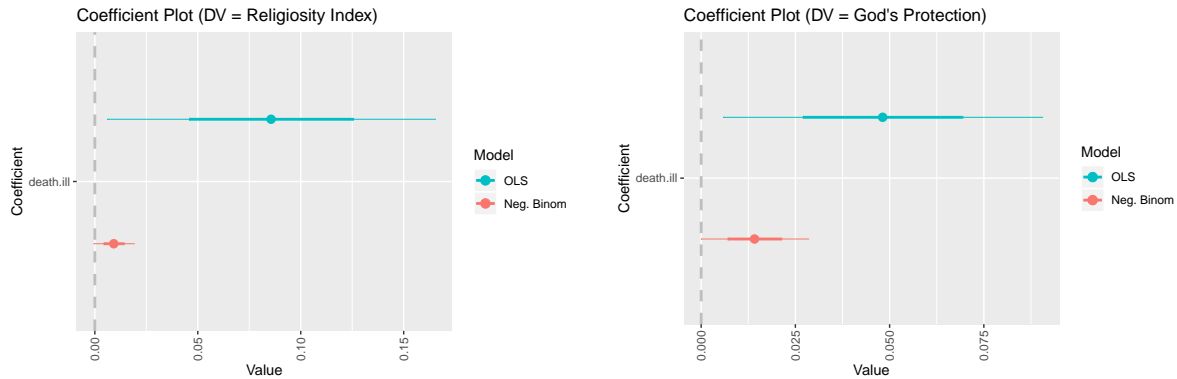
There seems to be a very weak, if any, relationship between deaths due to COVID-19 and reported deaths because of militant violence. The militant groups launched 15 attacks in May and June 2020, resulting in a total of 57 fatalities. The relationship between deaths of acquaintances and personal exposure to violence, however, is weak. The Pearson correlation coefficient for the reported number of deaths among acquaintances due to illness and the frequency of personal exposure to violence is 0.22, which reflects a very weak correlation.

Table 17 reports the findings for assessing the relationship between religiosity and deaths due to illness. Similar to personal exposure to violence, deaths due to illness is associated with a statistically significant increase in religiosity. Although the coefficients of death due to Covid-19 are smaller in magnitude than those for exposure frequency (Table 12), deaths due to Covid-19 seem to increase religious practices as measured by the religiosity index. In addition, deaths of friends and relatives is associated with an increase in the belief that God has protected one or one's family from a serious danger over the past one month. These findings are consistent with the effect of personal exposure to violence and provide further evidence that morality salience lead to religious intensification.

8 Alternative Explanations

This section discusses alternative explanations for the findings of this study. One alternative explanation is that those living in high-risk neighborhoods are both more religious and more risk-takers, which make them more likely to be exposed to militant violence. A number of psychological experiments show that when individuals are reminded of God, they feel less

Figure 11: Deaths due to Covid-19 and religious intensity



Note: Independent variable (death.ill) refers to the total number of family members, friends and relatives reported to have died because of illness in the past 3 months. All models include neighborhood fixed effects and control for marital status, income, education, age, and ethnicity. The results are also presented with more details in Table 17 of the Appendix.

afraid and are more likely to take risks (Chan, Tong, and Tan 2014; Greenberg et al. 1990; Holbrook, Fessler, and Pollack 2016). Although these studies are conducted in laboratory settings, one could hypothetically extend the logic to the real world. It could be argued that those who are more religious are more likely to take risks in real world and thus more likely to reside in high-risk neighborhoods that are frequently attacked by Islamist militant groups. On the contrary, the less religious people are more risk averse and tend to live in low-risk neighborhoods. In that case, the true causal pathway would be the opposite of the one hypothesized in this study. Religious intensity would be driving the likelihood of exposure to militant violence, rather than vice versa. If this explanation is true, those living in high-risk neighborhoods should be on average more religious than the residents of low-risk neighborhoods.

The data on religiosity index in the low-risk and high-risk neighborhoods, however, are not consistent with this alternative explanation. The median of religiosity index for low-risk neighborhoods is actually larger than the median for the high-risk neighborhoods (9 vs. 8). The difference, nonetheless, is not statistically significant. The p-value for Mood's median test is 0.11 (with X-squared = 2.4762, df = 1). Moreover, the p-value for Wilcoxon rank sum test is 0.3596 ($W = 285282$), which means there is no statistically significant difference in the distribution of religiosity index for the respondents from low-risk and high-risk neighborhoods.

It is possible, nonetheless, that those who live in high-risk neighborhoods are more re-

ligious than those in low-risk neighborhoods in aspects of religiosity not captured by the religiosity index, which measures religious practices only. Residents of high-risk neighborhoods may be different in terms of religious beliefs, rather than religious practices. To assess this explanation, I examine the number of times respondents reported to have thought about afterlife and heaven in the past 7 days. Once again the median for those living in high-risk neighborhoods is 7 and the median for low-risk neighborhoods is 8. The difference, however, is not statistically significant. The p-value for Mood's median test is 0.16 (with 1.9323, $df = 1$). Moreover, the p-value for Wilcoxon rank sum test is 0.1525 ($W = 276284$).

Another possibility is that those who have stronger belief in God protecting them and their family are more likely to move to high-risk neighborhoods and, thus, more likely to be exposed to militant violence. In that case, stronger belief in God's protection would increase the risk of exposure to violence. The survey results are not consistent with this explanation, either. The median number of times respondents thought that God protected them or a member of their family in the past 7 days is the same for low-risk and high-risk neighborhoods (median equals 1 for both groups). The Wilcoxon rank sum test also confirms that there is not statistically significant difference in the distribution of responses to this question between the two groups (p-value = 0.9985, $W = 289398$).

Finally, we consider the case in which those in high-risk neighborhoods are different in aspects of religiosity not captured by the survey questions. One implication of this case would be that those who are more religious in that unknown aspect would stay in the high-risk neighborhoods longer while those who are not as religious would not tolerate high risks and would move out to low-risk neighborhoods. To assess this possibility, we look at the length of time the respondents report to have lived in their neighborhoods. If this explanation is correct, the residents of high-risk neighborhoods must have survived the insecurity of high-risk neighborhoods and, thus, have lived longer in their neighborhoods.

In fact, the median of years living in their neighborhood is larger (14 years) for those in high-risk neighborhood than for the residents of low-risk neighborhoods (12 years). The difference, however, is not statistically significant (p-value for Mood Median's test is 0.2419, with $X\text{-squared} = 1.3693$, $df = 1$; p-value for Wilcoxon rank sum test is 0.09045, with $W = 283731$). Furthermore, the correlation between the length of time living in a high-risk neighborhood and the score on religiosity index is very weak (Pearson correlation coefficient = 0.06). The number of years the respondents live in high-risk neighborhoods is not correlated with religiosity. We can, therefore, rule out the alternative explanation that religiosity increases the likelihood of living in high-risk neighborhoods and exposure to militant violence.

Another alternative explanation is that the relationship between personal exposure to violence and increased religiosity is an artifact of access to information about violence and

casualties. In their study of support for militancy in Lebanon, Hoffman and Nugent (2017) argue that religious communal practices could either increase or decrease support for militancy by providing participants with information about community interests. In the context of this study, we could postulate that, through participating in religious ceremonies and attending mosques, the more religious individuals tend to gain more information about their communities and more likely to learn about their acquaintances being killed or injured in militant attacks. Those who are less religious, on the contrary, are less embedded in their communities and learn less about violence and casualties in their neighborhoods. Although we did not collect information about mosque participation since they were closed due to the pandemic, it is reasonable to assume that those who rank higher on the religiosity index used to attend mosques and religious ceremonies more frequently before the pandemic and learned more about violence and casualties in their communities. If this argument holds, then it is not exposure to violence that increases religiosity. Instead, religiosity leads to more awareness and reporting of exposure to violence.

We utilize the respondents' report of attacks in their neighborhoods to examine this alternative explanation. If participation in communal religious practices increases participants' awareness of, and information about, militant attacks in their communities, the more religious respondents should report a higher number of attacks in their neighborhoods than the less religious respondents. To assess this postulation, We use answers to the following question: "Was there any violent attack or explosion in the neighborhood of your home or place of work over the past one year? If yes, how many times ?" The median number of attacks reported by those below the median of religiosity index and those above the median of religiosity index is the same (median = 1).⁷ Moreover, the p-value for Wilcoxon rank sum test is 0.3861 ($W = 249766$), which shows that the two distributions are not significantly different.

Finally, an alternative explanation is that militants tend to target religious institutions. If true, the more religious people are more likely to be killed by militant attacks than the less religious. In that case, the causal path would be from religious intensity to exposure to violence, rather than the reverse. This explanation is not consistent with our measurement of personal exposure to violence, which is not limited to a respondent's injury but also includes injury and mortality of a respondent's household members, relatives, and friends. For this explanation to work, we need to assume that there is a strong correlation between an individual's religious intensity and the religiosity of one's household members, friends and relatives. In other words, we need to assume that a religious person's household members,

7. We use median instead of mean since both distributions (number of attacks reported and religiosity index) are right-skewed, rather than normal.

friends and relatives are religious as well. Even if we accept this presumption, the data on violence do not support this alternative explanation. Of the total of 147 attacks conducted in Kabul in the period of study, only 4 took place in mosques or a religious gathering. These four attacks led to 15 civilian fatalities out of 508 total fatalities. We can rule out the alternative explanation that the findings of this study are an artifact of militant attacks targeting religious gatherings.

9 External Validity

Does the findings of this study travel beyond Kabul and Afghanistan? Considering the observations from other countries, it seems very likely that the causal effect of violence on religious intensity is not limited to Afghanistan. Moreover, the observed effect in Afghanistan could present the lower bound for the effect of violence, considering Afghanistan's four-decade conflict and Afghans' desensitization to low-intensity violence.

A Pew survey in 18 Muslim-majority countries in 2012 showed that concerns about civil wars and terrorist attacks were strongly associated with increased frequency of daily prayers and mosque attendance, and a stronger belief that religion is very important in one's life. The findings are summarized in the Appendix, Table 18. Studies have shown that following the 9/11 tragic attack on the US, with almost 3000 fatalities, more Americans attended churches, engaged in prayers, and felt stronger beliefs in God (Ai et al. 2005; Fischer et al. 2010).

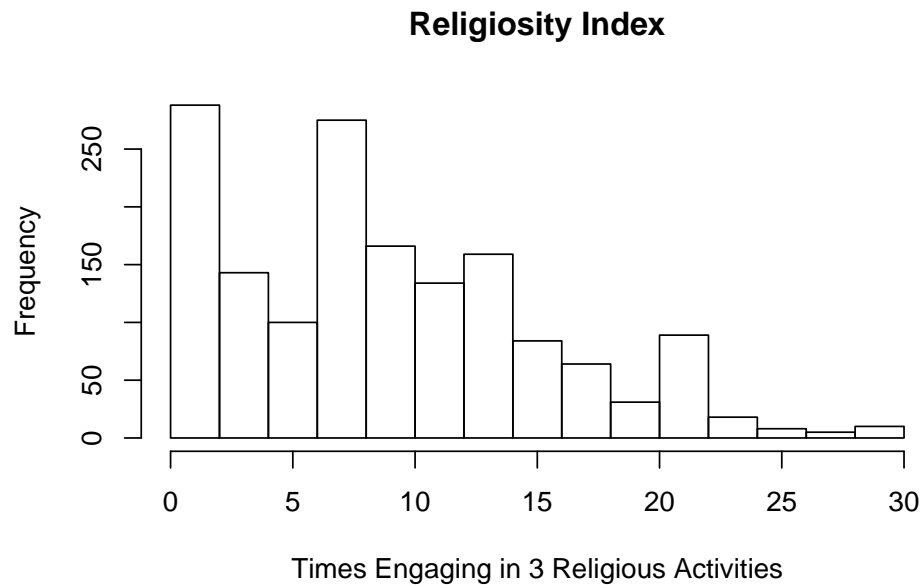
What distinguishes Afghanistan is the high rate of poverty and the prolonged conflict. On the one hand, because of the limited access to mental health services and non-religious coping mechanisms, religious beliefs and rituals have become important in helping civilians cope with the adverse psychological effects of war. On the other hand, this survey also provided some evidence for a certain degree of desensitization among Kabul residents to neighborhood-level violence. Considering the desensitization theory, it seems very likely that Afghans have become desensitized to certain types of low-intensity violence. Whether civilians in other countries affected by armed conflicts would experience religious intensification depends on their access to non-religious means of coping and the intensity and frequency of exposure to violence. In similar countries that people have limited means of coping and tend to rely on religion for coping but have not experienced such a prolonged conflict, the effect of violence on religious intensity could be even stronger. In richer countries, however, civilians may have access to, and draw upon, non-religious mechanisms to cope with armed conflicts.

10 Conclusion

The past three decades have witnessed a growing interest among political scientists in understanding the relationship between religion, particularly Islam, and political violence. The scholarship, however, has been lopsided and focused on the causal effect of Islamic beliefs and practices on support for militancy. The surveys in Muslim-majority countries, however, have found no evidence on a relationship between religiosity and support for militancy. Building on psychological theories of religion, this study focused on the reverse causal relationship and offered a new theoretical framework. Leveraging the as-if random nature of casualties at neighborhood level in urban centers controlled by the government, this study offers evidence consistent with the theory that exposure to violence leads to religious intensity among civilians. One of the limitations of this study is that it focuses on the short-term effects of exposure to violence (with a time span of 1 year). We do not know how civilians react to violence in the long run and how long intensified religiosity lasts after exposure to violence. second, Afghans have suffered from armed conflicts and been exposed to violence for four decades. According to psychological theories, Afghans may have been desensitized to certain types of violence. In that case, civilians in countries without prior conflicts or a shorter conflict may demonstrate stronger responses to exposure to violence and may be even more likely to experience religious intensification. Depending on cultural and economic resources, however, they may rely on non-religious mechanisms to cope with the adverse effects of armed conflicts. We need more empirical work to better understand civilians' response to armed conflicts. Nevertheless, this study offers a novel theory and empirical findings in extending our knowledge of the intricate relationship between religiosity and political violence.

Appendix

Figure 12: Distribution of Religiosity Index



Note: Based on the survey data for the entire sample. The index refers to the total number of times a respondent read the Quran, listened to the Quran or followed Islamic programs on TV or radio over the past 7 days.

Table 8: Personal Exposure to Violence and Religious Intensity

	<i>OLS</i>	<i>OLS</i>	<i>OLS</i>	<i>Negative binomial</i>
	(1)	(2)	(3)	(4)
Panel A. <i>Dependent variable: religiosity index</i>				
Personal exposure	1.904*** (0.352)	1.938*** (0.372)	0.379*** (0.088)	0.227*** (0.043)
Neighborhood FE		✓	✓	✓
Constant	4.942*** (0.753)	6.059*** (1.656)	−0.546 (0.394)	1.916*** (0.205)
Observations	1,453	1,453	1,466	1,453
R ²	0.056	0.069	0.055	
θ				1.948*** (0.096)
AIC				9,373.542
Panel B. <i>Dependent variable: religiosity index</i>				
Exposure frequency	0.117*** (0.021)	0.118*** (0.022)	0.022*** (0.005)	0.012*** (0.002)
Neighborhood FE		✓	✓	✓
Constant	5.880*** (0.700)	6.892*** (1.647)	−0.375 (0.393)	2.000*** (0.205)
Observations	1,432	1,432	1,445	1,432
R ²	0.058	0.071	0.056	
Log Likelihood				−4,588.583
θ				1.938*** (0.096)
AIC				9,241.166

Note: the dependent variable for all columns with the exception of column (3) is religiosity index. The dependent variable for column (3) is the sum of first two components from principle component analysis of religiosity index, counting for 80% of variation in the index. All columns control for marital status, income, education, age, and ethnicity. Religiosity index refers to the total number of times a respondent read the Quran, listened to the Quran or followed Islamic programs over the past 7 days. Heteroskedasticity-robust standard errors reported in parentheses.

*p<0.1; **p<0.05; ***p<0.01

Table 9: Neighborhood-level violence and religious intensity

	<i>OLS</i>	<i>OLS</i>	<i>Negative binomial</i>
	(1)	(2)	(3)
Panel A. <i>Dependent variable: religiosity index</i>			
High-risk neighborhood	0.437 (0.363)	0.079 (0.085)	0.049 (0.039)
Constant	6.378*** (0.721)	−0.465*** (0.171)	1.927*** (0.091)
Observations	1,453	1,466	1,453
R ²	0.038	0.031	
θ			1.879*** (0.091)
AIC			9,368.914
Panel B. <i>Dependent variable: religiosity index</i>			
Neighborhood casualties	0.0004 (0.001)	0.0001 (0.0002)	0.00005 (0.0002)
Constant	6.576*** (0.712)	−0.427** (0.169)	1.950*** (0.090)
Observations	1,453	1,466	1,453
R ²	0.038	0.031	
θ			1.877*** (0.091)
AIC			9,370.038

Note: the dependent variable for columns (1) and (3) is religiosity index. The dependent variable for column (2) is the sum of first two components from principle component analysis of religiosity index, counting for 80% of variation in the index. All columns control for marital status, income, education, age, and ethnicity. Religiosity index refers to the total number of times a respondent read the Quran, listened to the Quran or followed Islamic programs over the past 7 days. Heteroskedasticity-robust standard errors are reported in parentheses.

*p<0.1; **p<0.05; ***p<0.01

Table 10: Personal Exposure to Violence and Religiosity (Poisson Regressions)

	<i>Dependent variable:</i>		
	Religiosity Index		
	(1)	(2)	(3)
Personal exposure	0.174*** (0.018)	0.211*** (0.019)	0.214*** (0.020)
Demographic controls		✓	✓
Neighborhood fixed effects			✓
Constant	2.104*** (0.015)	1.754*** (0.040)	1.868*** (0.084)
Observations	1,574	1,453	1,453
Log Likelihood	−6,890.789	−6,176.683	−6,132.695
Akaike Inf. Crit.	13,785.580	12,375.370	12,329.390

Note: demographic controls include marital status, income, education, age, and ethnicity. Dependent variable, religiosity index, refers to the total number of times a respondent read the Quran, listened to the Quran or followed Islamic programs over the past 7 days. The explanatory variable, personal exposure, equals 1 if a respondent has seen a dead body, had damaged property or had family members, friends, or relatives injured or killed in a militant attack within the previous 12 months. Dispersion is 4.259589 and statistically significant, and Alpha for overdispersion test equals 0.339 and is statistically significant.

*p<0.1; **p<0.05; ***p<0.01

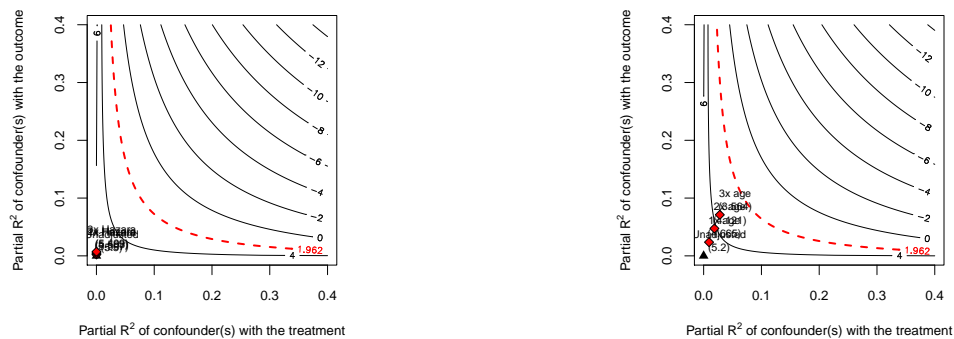
Table 11: Exposure to violence and each element separately (Negative Binomial)

	<i>Dependent variable:</i>		
	Read Quran	Listen Quran	Follow Islam. Prog.
	(1)	(2)	(3)
Personal exposure	0.147* (0.065)	0.241*** (0.062)	0.317*** (0.070)
Demographic controls	✓	✓	✓
Neighborhood fixed effects	✓	✓	✓
Constant	1.004*** (0.367)	0.853*** (0.315)	0.486 (0.349)
Observations	1,462	1,456	1,463
Log Likelihood	−3,317.457	−3,389.307	−3,100.577
θ	0.600*** (0.033)	0.840*** (0.049)	0.742*** (0.044)
AIC.	6,698.914	6,842.615	6,265.153

Note: demographic controls include marital status, income, education, age, and ethnicity. The explanatory variable, personal exposure, equals 1 if a respondent has seen a dead body, had damaged property or had family members, friends, or relatives injured or killed in a militant attack within the previous 12 months.

*p<0.1; **p<0.05; ***p<0.01

Figure 13: Sensitivity contour plots of the t=value



Note: The left graph shows the sensitivity contour plot of the t-value for exposure to violence with *Hazara* as the benchmark. The right graph is the sensitivity contour plot for the t-value for exposure to violence with *age* as the benchmark.

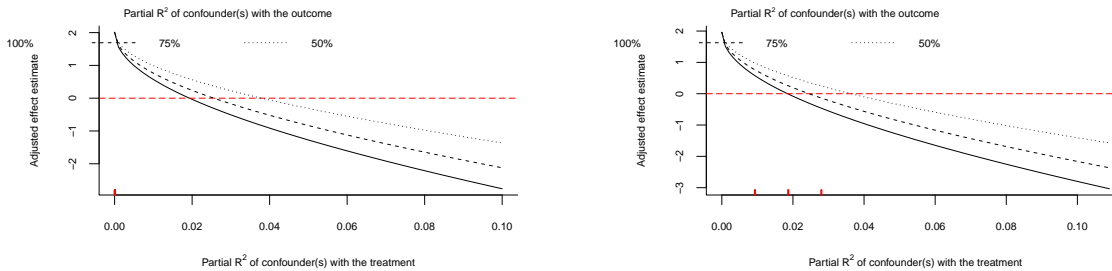
Table 12: Exposure to violence (high-risk neighborhoods)

	<i>Dependent variable: religiosity index</i>	
	(1)	(2)
Personal exposure	1.874*** (0.431)	0.372*** (0.103)
High-risk	-0.058 (0.714)	0.050 (0.170)
Personal exposure x high-risk	0.133 (0.815)	-0.058 (0.194)
Constant	4.913*** (0.776)	-0.745*** (0.185)
Observations	1,466	1,466
R ²	0.056	0.042

Note: high-risk refers to living in a high-risk neighborhood. The dependent variable for column (1) is religiosity index. The dependent variable for column (2) is the sum of first two components for principle component analysis of religiosity index, counting for 80% of variation in the index. All columns control for marital status, income, education, age, and ethnicity. Religiosity index refers to the total number of times a respondent read the Quran, listened to the Quran or followed Islamic programs over the past 7 days.

*p<0.1; **p<0.05; ***p<0.01

Figure 14: Sensitivity Analysis to extreme scenarios



Note: The left graph shows the sensitivity analysis to extreme scenarios with *Hazara* as the benchmark. The right graph is the sensitivity analysis to extreme scenarios with *age* as the benchmark.

Table 13: Exposure to violence and belief in God's protection

	<i>Dependent variable: belief in God's protection</i>			
	<i>OLS</i>	<i>negative binomial</i>	<i>OLS</i>	<i>negative binomial</i>
	(1)	(2)	(3)	(4)
Personal exposure	0.532*** (0.203)	0.195*** (0.073)		
Neighborhood casualties			0.0004 (0.001)	0.0001 (0.0002)
Neighborhood FE	✓	✓		
Constant	3.970*** (0.896)	1.314*** (0.317)	2.423*** (0.396)	0.899*** (0.145)
Observations	1,444	1,444	1,444	1,444
R ²	0.080		0.006	
θ		0.831*** (0.045)		0.749*** (0.039)
AIC		6,482.703		6,537.404

Note: dependent variables represent the number of times a respondent believe that God protected him or his family from a serious danger over the past one month. Personal exposure equals 1 if a respondent was injured or had a family member, relative or friend killed or injured in a militant attack – and 0 otherwise. Casualties refer to the number of individuals killed or injured in a neighborhood by militant attacks. All columns control for marital status, income, education, age, and ethnicity.

*p<0.1; **p<0.05; ***p<0.01

Table 14: Exposure to violence and psychological well-being

	<i>Dependent variable: psychological well-being</i>		
	(1)	(2)	(3)
Personal exposure	−0.244*** (0.055)		
High-risk neighborhood		−0.095* (0.052)	
Neighborhood casualties			−0.0003** (0.0001)
Constant	3.057*** (0.246)	2.713*** (0.106)	2.712*** (0.104)
Observations	1,448	1,448	1,448
R ²	0.062	0.022	0.023

Note: dependent variable represents the score on psychological well-being. Personal exposure equals 1 if a respondent was injured or had a family member, relative or friend killed or injured in a militant attack – and 0 otherwise. High-risk neighborhood equals 1 if a respondent lives in a high-risk neighborhood, and 0 otherwise. Casualties refers to the number of individuals killed or injured in a neighborhood by militant attacks. All columns control for marital status, income, education, age, and ethnicity. Column (1) include neighborhood fixed effects.

*p<0.1; **p<0.05; ***p<0.01

Table 15: Religiosity and Support for Taliban (Negative Binomial)

	<i>Dependent variable:</i>		
	Support for Taliban		
	(1)	(2)	(3)
Religiosity Index	0.005 (0.003)	0.005 (0.003)	0.006 (0.004)
Demographic controls	✓	✓	✓
Neighborhood fixed effects		✓	✓
Constant	0.762*** (0.093)	0.858*** (0.185)	0.930*** (0.207)
Observations	1,059	1,059	674
Log Likelihood	-1,553.461	-1,547.741	-985.563
θ	160,673.100 (828,041.200)	159,693.400 (814,789.300)	146,044.400 (913,270.900)
AIC	3,126.923	3,155.481	2,009.127

Note: demographic controls include marital status, income, education, age, and ethnicity. Dependent variable measures the support for policies promoted by the Taliban. Religiosity index refers to the total number of times a respondent read the Quran, listened to the Quran or followed Islamic programs over the past 7 days. Column (3) includes respondents living in low-risk neighborhoods only.

*p<0.1; **p<0.05; ***p<0.01

Table 16: neighborhood-level fatalities and religious intensity

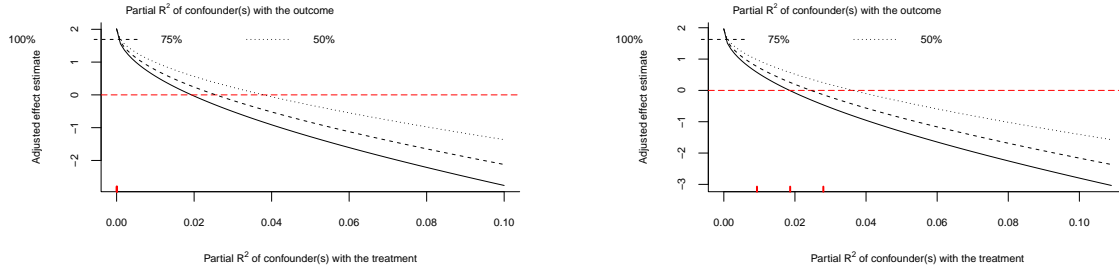
	<i>Dependent variable: religiosity index</i>		
	<i>OLS</i>	<i>OLS</i>	<i>negative binomial</i>
	(1)	(2)	(3)
fatalities	0.001 (0.004)	0.0001 (0.001)	0.00005 (0.001)
Constant	6.578*** (0.711)	−0.422** (0.169)	1.950*** (0.090)
Observations	1,466	1,466	1,466
R ²	0.038	0.031	
θ			1.852*** (0.089)
AIC			9,446.583

Note: *p<0.1; **p<0.05; ***p<0.01

Note: fatalities refer to the number of individuals killed by militant activities in a neighborhood, based on ACLED data on violence in Afghanistan. The dependent variable for column (1) and column (3) is religiosity index. The dependent variable for column (2) is the sum of first two components, based on principal analysis of religiosity index, counting for 80% of variation in the index. All models control for marital status, income, education, age, and ethnicity.

*p<0.1; **p<0.05; ***p<0.01

Figure 15: Sensitivity contour plots of extreme scenarios



Note: The left graph shows the sensitivity contour plot for extreme scenario (exposure to violence) with *Hazara* as the benchmark. The right graph is the sensitivity contour plot for extreme scenario (exposure to violence) with *Age* as the benchmark.

Table 17: Deaths due to Covid-19 and religious intensity

	<i>Dependent variables:</i>			
	religiosity index		belief in God's protection	
	<i>OLS</i>	<i>negative binomial</i>	<i>OLS</i>	<i>negative binomial</i>
	(1)	(2)	(3)	(4)
Deaths due to Covid-19	0.086** (0.040)	0.009* (0.005)	0.048** (0.023)	0.014** (0.005)
Constant	6.860*** (1.767)	1.997*** (0.218)	4.172*** (0.931)	1.429*** (0.314)
Observations	1,122	1,122	1,104	1,104
R ²	0.055		0.108	
θ		1.863*** (0.103)		0.945*** (0.059)
AIC		7,271.541		5,024.238

Independent variable (death.ill) refers to the total number of family members, friends and relatives reported to have died because of illness in the past 3 months. All models include neighborhood fixed effects and control for marital status, income, education, age, and ethnicity.

Table 18: Concern about Violence and Religiosity

	<i>Dependent variable:</i>		
	Pray Daily (1)	Religion Important (2)	Attend Mosque (3)
Concerned about Civil War	0.315*** (0.034)	0.435*** (0.034)	0.071 (0.044)
Concerned about War	0.390*** (0.035)	0.167*** (0.045)	0.465*** (0.034)
Concerned about Terrorist Attacks	0.326*** (0.035)	0.060 (0.044)	0.466*** (0.033)
Observations	17,535	19,782	9,952
Log Likelihood	−8,363.093	−7,793.720	−5,423.637
Akaike Inf. Crit.	16,768.190	15,631.440	10,889.270

Note: Based on World Value Survey, Wave 6, including 18 Muslim-majority countries. All specifications are based on probit regression, include country fixed effects, and control for income, marital status, age and education. The different Sample sizes reflect the fact that some questions were not asked in some countries. *Religion important* is coded a binary variable, 1 for “very important” and 0 otherwise. *Pray daily* is coded as a binary variable, 1 for praying once a day or more frequently, and 0 otherwise. *Attend mosque* is coded as a binary variable, 1 for attending mosque once a week or more frequently, and 0 otherwise.

*p< 0.1; **p< 0.05; ***p< 0.01

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