Individuals’ Use of Religion in Response to the COVID-19 Pandemic as Complementary to Their Use of Medically Recommended Responses

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Many individuals have engaged in behaviors to cope with and mitigate the COVID-19 pandemic, including mask wearing and physical distancing. This study considers the extent to which individuals have also engaged in religious behaviors in response to the pandemic and how those responses are associated with behaviors like mask wearing. Using data from a probability survey of U.S. adults, our analysis finds that over half of the respondents have engaged in pandemic-related prayer and about one-fifth have taken other religious steps in response to the pandemic, such as reading religious texts or carrying religious items for protection. All else being equal, Republicans are significantly less likely to have undertaken religious steps in response to the pandemic relative to Democrats, suggesting that the politicized nature of the pandemic influences religious responses as well. The analysis also finds that religious responses to the pandemic—especially prayer—are positively associated with mask wearing and physical distancing. These findings suggest that religious responses to the pandemic are not inherently opposed to undertaking responses recommended by scientific and medical authorities.

Keywords: science, religion, public perspectives.

INTRODUCTION

From early in the COVID-19 pandemic, scientific and medical authorities have recommended that individuals respond to the risks presented by the virus by engaging in mask wearing, physical distancing, and—more recently—vaccine uptake. While many individuals have followed these medical recommendations, there is significant variation in adherence to these measures and much social science research has focused on understanding individuals’ use of these medically recommended responses to the pandemic.

But individuals may take steps to cope with and mitigate events like the COVID-19 pandemic that go beyond the responses offered by medical and scientific authorities. In some cases, these responses may be seen by individuals as alternatives to or in opposition to the responses offered by those authorities. Indeed, there have been many examples of individuals pursuing prevention methods and cures for COVID-19 that have no empirical support instead of engaging in the steps that do have support (Caulfield 2020).

It is possible, though, that some responses outside the bounds of official medical recommendations could be complementary to those responses. That is, rather than responses being zero sum,
some individuals may engage in a portfolio of strategies to mitigate and cope with the pandemic. The distinction between those that respond at all to the pandemic versus those who do not engage in any response, then, may be greater than the distinction between those who respond in one way versus those who respond in another way.

Religion can be seen as offering a toolkit—whether effective or not—for individuals to cope with external events and, in some cases, attempt to mitigate or alter those events (Ahrens et al. 2010; Chow et al. 2021; Fadilpasic, Malec, and Dzubur-Kulenovic 2017; Feder et al. 2013; Frei-Landau 2020; Hasan, Mitschke, and Ravi 2018; Henslee et al. 2015; Krysinska and Corveleyn 2013; Palgi, Shrirah, and Ben-Ezra 2011; Uysal 2019; Zukerman and Korn 2014). While a number of recent studies have examined how different dimensions of religion are associated with variations in individuals’ adherence to medically recommended responses to the COVID-19 pandemic, research has not considered the extent to which individuals are using religion itself as a way to respond to the pandemic or the correlates of utilizing such religious responses. Moreover, research has not considered how those religious responses to the pandemic are associated with medically recommended responses. That is, are religious responses to the pandemic alternatives to or complementary to medically recommended responses?

The study presented here considers these issues using data generated from a nationally representative survey of U.S. adults that included a series of questions asking about how individuals’ have responded to the COVID-19 pandemic.

**Religious Responses to Negative Circumstances**

Research on religious coping broadly identifies several ways in which individuals use religion to cope with negative life circumstances, including prayer, reading sacred texts, using talismans, and talking to religious leaders. The use of prayer as a means of responding to negative external stimuli has been noted as one of the most popular forms of complementary and alternative medicine (CAM) (Barnes et al. 2004; Masters and Spielmans 2007; Saydah and Eberhardt 2006). Prayer can function as a coping mechanism for individuals dealing with terminal or chronic illnesses (Baesler et al. 2003; McCaffrey et al. 2004), other mental and physical illnesses (Saydah and Eberhardt 2006), managing negative emotions (Sharp 2010), and responding to trauma (Harris et al. 2010; Johnson, Williams, and Pickard 2016; Tait, Currier, and Harris 2016).

Krause and Pargament (2018) note that much less studied than prayer are the effects of reading the Bible and other sacred texts as a means of responding to stressors. The Bible functions to bring peace and comfort to those who have suffered trauma or high-stress situations (Johnson, Williams, and Pickard 2016; Vengeyi 2012), connects people to God (Hamilton et al. 2013; Vengeyi 2012), and provides people with meaning for the situations in which they find themselves (DeAngelis, Bartkowski, and Xu 2019; Lundmark 2019).

Another religious response to negative stressors and situations is the use of physical and nonphysical religious talismans, such as prayer beads and particular words and phrases. Studies have found prayer beads and other physical religious talismans to be effective religious coping mechanisms in Christianity (del Castillo, del Castillo, and Corpuz 2021; Iddrisu, Aziato, and Dedey 2019; Stöckigt et al. 2021), Judaism (Krysinska and Corveleyn 2013), and Islam (Bhui et al. 2008). The repetition of holy names and recitation of the Rosary have been found to provide mental health benefits (Anastasi and Newberg 2008; Oman and Driskell 2003; Stöckigt et al. 2021).

Individuals may also turn to religious figures for either direct support from religious leaders or indirect support through their connection to something greater (Becerra and Greenblatt 1981; Guzman-Carmeli and Sharabi 2019; Keshet and Liberman 2014; Krause et al. 2001; Krysinska
and Corveleyn 2013; Maman et al. 2009). Looking to a religious leader for support may even come from those who are otherwise not religious (Keshet and Liberman 2014).

**RELIGION AND MEDICALLY RECOMMENDED RESPONSES TO COVID-19**

Social scientists and public health officials have understandably tried to identify the key factors shaping individuals’ use or nonuse of medically recommended responses to the COVID-19 pandemic, such as mask wearing or social distancing. One factor that has been suggested is religion (Adler et al. 2021; Gonzalez et al. 2021; Hao and Shao 2021; Perry, Whitehead, and Grubbs 2020; Pew Research Center 2020; Schnabel and Schieman 2021). Religiosity is associated with perceptions of governmental and scientific authority (Chan 2018; Payir et al. 2021; Plohl and Musil 2021; Rutjens, Sutton, and van der Lee 2018; Wisneski, Lytle, and Skitka 2009). Many evangelical Protestants are anti-institutionalists who are skeptical of government and science and advance certain libertarian principles (Emerson, Smith, and Sikkink 1999; Evans and Hargittai 2020; Wellman 2008). Catholics are typically more accepting of the government as well as scientific authority compared to evangelical Protestants (Agliardo 2014; Ecklund et al. 2017; Evans and Hargittai 2020; Funk and Gramlich 2021; Guth et al. 1995).

Nationally representative surveys of U.S. adults fielded in March and June 2020 found that White evangelical Protestants, compared to other religious affiliations, exhibited the lowest prevalence of mask wearing in stores “all or most of the time” (48%), the least concern that the government would “lift the restrictions too quickly” (55%), and the least support for perceiving the following as necessary to mitigate COVID-19: “closing businesses,” “canceling major sports and entertainment events,” “closing k-12 schools,” “asking people to avoid gathering in groups of more than ten,” and “carry-out only restaurants” (Pew Research Center 2020). Several studies have identified that U.S. conservative Christians, including evangelical Protestants and Christian nationalists, are less likely to engage in COVID-19 mitigation behaviors (e.g., mask-wearing and social distancing), are more likely to oppose government mandates and restrictions, and are more likely to not trust scientists’ understanding of the pandemic (Adler et al. 2021; Evans and Hargittai 2020; Gonzalez et al. 2021; Hao and Shao 2021; Perry, Whitehead, and Grubbs 2021; Perry, Whitehead, and Grubbs 2020; Schnabel and Schieman 2021).

These studies have typically focused on how religious tradition and behaviors (e.g., service attendance and prayer) are associated with mask-wearing, social distancing, and other mitigation strategies. That is, how religiosity is related to medically recommended responses (i.e., responses advocated for by public health organizations). There is scarce research on how religious responses to COVID-19, such as prayer and reading sacred texts specifically related to COVID-19, may affect medically recommended responses.

**CONNECTIONS BETWEEN MEDICALLY RECOMMENDED AND RELIGIOUS RESPONSES**

While we can identify both medically recommended and religious responses to the COVID-19 pandemic, how might these two types of responses relate to each other? Net of other variables, including political identification, some studies found that religious service attendance is not significantly associated with medically recommended responses (Adler et al. 2021; Schnabel and Schieman 2021). Perry and colleagues (2020) found that, net of Christian nationalism, religiosity (i.e., prayer, attendance, and religious importance) was positively associated with medically recommended responses. Studies typically focus on general religious behaviors rather than those specific to COVID-19. Notably, Schnabel and Schieman (2021) found that people who had prayed that the pandemic would end reported lower levels of mental distress and very religious people were more likely to engage in such behavior. However, they did not present models predicting...
prayer for the pandemic nor did they include it in their model predicting medical responses to COVID-19. What factors affect whether someone engages in religious response to COVID-19, such as praying for the pandemic to end, praying for someone to be healed from COVID-19, or wearing religious or spiritual items for protection from COVID-19? Net of political party identification, we expect that religiously conservative individuals, who are more likely to believe in a God who intervenes in worldly affairs, and those who regularly engage in religious behaviors will be more likely to also engage in religious responses to COVID-19.

Is engaging in religious responses to COVID-19 associated with medically recommended responses to COVID-19? Some research theorizes and finds that religiosity is associated with various preventative health measures through the mechanism of health locus of control (Amit Aharon et al. 2018; Olagoke, Olagoke, and Hughes 2021; Tinsley and Holtgrave 1989; Weitkunat et al. 1998; Zindler-Wernet et al. 1987). Locus of control has two distinct types—internal and external. People who believe that the events that occur in their life are primarily a consequence of their own actions have an internal locus of control (Rotter, 1954, 1966). Those who believe the opposite—that forces or beings outside of one’s control (e.g., God, spirits, and luck) affect the events and outcomes in one’s life—have an external locus of control (Rotter, 1954, 1966). This has been applied to health outcomes with an external health locus of control meaning that the person believes that their own health is determined by external factors or beings and an internal health locus of control referring to when a person believes their own health is a result of their actions (Wallston 2005). Research has found that having an external health locus of control is negatively associated with engaging in preventative health measures (Amit Aharon et al. 2018; Olagoke, Olagoke, and Hughes 2021; Tinsley and Holtgrave 1989; Weitkunat et al. 1998; Zindler-Wernet et al. 1987).

There is some evidence of this related to COVID-19 vaccine perceptions and uptake. Beyерlein, Nirenberg, and Zubrzycki (2021) found that the majority of their sample believed that God would protect them from COVID-19 infection. Similarly, Upenieks, Ford-Robertson, and Robertson’s (2021) found that those who believe in an engaged God are more likely to distrust COVID-19 vaccines and those who believe that God is in control are less likely to have been vaccinated. And finally, Olagoke, Olagoke, and Hughes (2021) found that having an external locus of control mediated the negative relationship between religiosity and intent to receive a COVID-19 vaccine. Thus, if someone believes that God, a higher power, or spiritual forces are in control, then religious responses to COVID-19 may decrease their likelihood of engaging in medically recommended responses as they may not view themselves as being able to affect any outcomes.

H1: Religious responses to COVID-19 will be negatively associated with medically recommended responses to COVID-19.

On the other hand, religious responses to COVID-19 may be an additional strategy used by religious people to try to mitigate the effects of the pandemic. As Pargament et al. (1988) identify, some people employ religion in an effort to solve problems and one way they can do so is by taking a collaborative approach in which they partner with God or a higher power to solve the problem. In a study of how Amish and Mennonites coped with COVID-19, DiGregorio et al. (2021) found that the most common religious problem-solving approach was collaborative—indicating that people should trust and pray to God but also do their part to stop the spread of COVID-19. In this sense, religious and medically recommended responses to COVID-19 are not necessarily mutually exclusive or zero-sum. Those who believe that COVID-19 is enough of a concern to engage in religious responses may also believe that it is enough of a concern to engage in medically recommended responses as well. If this is the case, then those who engage in religious responses to COVID-19 may be more likely to engage in medically recommended responses.

H2: Religious responses to COVID-19 will be positively associated with medically recommended responses to COVID-19.
**Data**

Data for this study were generated from a survey fielded using the AmeriSpeak panel, a probability-based panel of nearly 50,000 individuals age 13 and over in the United States. The AmeriSpeak panel is funded and operated by NORC at the University of Chicago. NORC randomly selects households through a multistage sampling process and recruits them through mail, phone, and face-to-face methods. While most panelists complete surveys online, NORC also conducts phone surveys with panelists that prefer that mode or who do not have access to online surveys. A more detailed technical overview of the AmeriSpeak panel can be found at NORC (2021). For the survey that produced the data used in this study, NORC invited 8238 adult panelists to complete the survey for a target completed sample of 2000 responses. In the end, a total of 2003 completions were received. Most of these responses were completed online (1915), while a handful (88) were completed using phone interviews. The survey was in the field from May 17 through June 1, 2021, which is relevant to keep in mind in terms of the larger context of the COVID-19 pandemic.

Using benchmarks from the February 2021 Census Bureau Current Population reports, NORC computed weights based on age, gender, census division, race and ethnicity, and education. When weighted, sample-based point estimates for these demographics closely mirror that of the U.S. adult population.

**Measures**

**Outcomes: Religious and Medically Recommended Responses to COVID-19 Pandemic**

Our outcome measures come from a series of items on the survey that asked, “How often have you done the following in response to the COVID-19 pandemic?” Nine items were offered in random order:

(a) I have prayed for the COVID-19 pandemic to end.
(b) I have prayed for someone to be healed from COVID-19.
(c) I have read religious texts to better understand the COVID-19 pandemic.
(d) I have worn or carried spiritual items to protect myself from COVID-19.
(e) I have spoken to a religious or spiritual leader about COVID-19.
(f) I have spoken to a doctor about COVID-19.
(g) I have read scientific texts to better understand the COVID-19 pandemic.
(h) I have limited my physical interaction with other people to protect myself from COVID-19.
(i) I have worn a mask to protect myself from COVID-19.

Exploratory principal factor analysis found that three distinct factors could be derived from these items. Two of these factors represented what we call “religious responses” to the pandemic. The first factor consisted of the first two items (a and b; rotated factor loadings of 0.80 and 0.80, respectively) asking about pandemic-related prayer activities. We refer to this as the prayer-based COVID-19 responses scale. Our analyses utilize scales representing the mean responses across the items for each scale. The Cronbach’s alpha for these two items is 0.85. We also estimated our final regression models using predicted factor scores and found that the results are substantively identical (results not shown here).

The second factor representing religious responses to the pandemic consisted of the third, fourth, and fifth items (c–e; rotated factor loadings of 0.59, 0.51, and 0.58, respectively) asking about reading religious texts, carrying religious items, or speaking with religious leaders. The
Cronbach’s alpha for these three items is 0.70. We refer to this as the religious resource-based COVID-19 responses scale (i.e., religious texts, items, and leaders as religious resources). A third factor represents what we call medically recommended COVID-19 responses scale and consists of the last two items (h and i; rotated factor loadings of 0.72 and 0.69, respectively) asking about physical distancing and mask wearing. The Cronbach’s alpha for these two items is 0.74. Note that the remaining items (f and g) did not load with each other or with any of the other items and are excluded from the remaining analyses in this study, although interested readers can find supplemental analyses online that not only examine these two measures as predictors in our final models but also all measures comprising the COVID-19 response scales as individual predictors.

Predictors and Controls

This study is interested in both understanding patterns of religious responses to the COVID-19 pandemic and how those religious responses are associated with medically recommended responses. To these ends, we consider a wide variety of predictors of both religious and medically recommended responses to the pandemic.

It is natural to expect religion and religiosity to influence the likelihood of taking religious steps in response to the pandemic. We include measures of individuals’ religious tradition, view of the Bible, religious service attendance, prayer frequency, and attitudes about Christian nationalism. Religious tradition is measured as (1) Evangelical Protestant, (2) Non-evangelical Protestant, (3) Catholic, (4) Non-Christian, (5) Agnostic, (6) Atheist, (7) Nothing in particular, or (8) Something else. Non-Christian traditions were combined due to their small sample sizes. Evangelical Protestant was determined based on respondents’ answers to the following question, “Which of the following terms describe your religious or spiritual identity?—Evangelical.” Possible responses were (1) not at all, (2) not very well, (3) somewhat well, and (4) very well. Respondents who indicated that they were “Protestant” or “just Christian” and who reported that evangelical described their religious or spiritual identity somewhat or very well were coded as evangelical Protestant. Those who reported being “Protestant” or “just Christian” but did not indicate that evangelical described them somewhat or very well were coded as non-evangelical Protestant. Individuals’ view of the Bible is assessed with a question asking, “Which of the following comes closest to describing your feelings about the Bible?” Possible responses were (1) The Bible is the actual word of God and is to be taken literally, word for word, (2) The Bible is the inspired word of God but not everything in it should be taken literally, word for word, and (3) The Bible is an ancient book of fables, legends, history, and moral codes.

Frequency of religious service attendance (“How often do you attend religious services?”) is measured on nine points ranging from (1) never to (9) several times a week. Frequency of prayer (“About how often do you pray?”) is measured on six points ranging from (1) never to (6) several times a day. Because some of the religious responses to the pandemic are prayer-focused, it is particularly important to account for an individual’s overall prayer frequency to distinguish between pandemic-specific prayer and overall prayer.

Finally, several studies have linked a religiously infused ideology called Christian nationalism with COVID-19-related behaviors. To account for this, we include a measure from a question asking, “To what extent do you agree or disagree that the federal government should declare the United States a Christian nation?” Possible responses were (1) strongly disagree, (2) somewhat disagree, (3) neither agree nor disagree, (4) somewhat agree, or (5) strongly agree.

COVID-19 attitudes and behaviors have also been closely tied to political partisanship (Allcott et al. 2020; Clinton et al. 2021). We include a measure representing the individual’s political party identification, which comes from a series of questions first asking whether the individual considers themselves to be a Democrat, Republican, Independent, or none of these. A follow-up question then asks those identifying as Independent, whether they lean more toward Democrats
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or Republicans (or don’t lean). Responses are then coded as (1) Democrat, (2) Lean Democrat, (3) Don’t Lean/Independent/None, (4) Lean Republican, and (5) Republican.

We also include controls for individuals’ education and income. Education is measured on five points ranging from (1) less than a high school degree to (5) post-graduate study or professional degree. Household income is measured on nine points ranging from (1) under $10,000 to (9) $150,000 or more. The danger of COVID-19 is associated with individuals’ age (Barek, Aziz, and Islam 2020; Liu et al. 2020). We include a seven-point measure of age ranging from (1) 18–24 to (7) 75 or older.

We control for individuals’ race and ethnicity through a measure with six categories: (1) White, non-Hispanic, (2) Black, non-Hispanic, (3) Asian, non-Hispanic (4) Other, non-Hispanic, (5) Hispanic, and (6) More than one race, non-Hispanic. This measure is produced from a series of questions asking about what races the individual identifies with and whether they are of Spanish, Latino, or Hispanic descent. Gender is measured with a question asking, “Which best describes your current gender identity?” with offered responses of (1) Woman, (2) Man, or (3) Something else (e.g., nonbinary, gender fluid, agender, genderqueer, and gender nonconforming). Region of residence is controlled for with a measure corresponding to the Census regions of (1) Northeast, (2) Midwest, (3) South, and (4) West.

**Method**

Results were computed using Stata’s complex survey command (svy), which weights the data to be nationally represented. We estimate ordinary least squares (OLS) regression models and linearized standard errors. Missing cases were deleted listwise.

**Results**

Table 1 presents descriptive statistics for all the measures used in this study. We see that the mean for the medically recommended COVID-19 responses scale—that is, the combined responses on the mask wearing and physical distancing items—is 3.48. This is between the “sometimes” and “often” responses on the items contained in the scale. The means for the two religious-responses scales are lower. The prayer-based COVID-19 responses scale’s mean is 2.36, or between the “rarely” and “sometimes” responses on the two items in the scale. The mean for the religious resource-based COVID-19 responses scale is 1.38, or between the “never” and “rarely” responses.

Table 2 presents the frequency of responses to the individual items contained within our scales measuring religious and medically recommended responses to the COVID-19 pandemic. Remember that religious responses consist of two subscales: prayer-based responses and religious resource-based responses. Of these two types of religious responses, we see that prayer-based responses are more common. About 30% of respondents said that they have prayed “often” for the COVID-19 pandemic to end and about 25% have prayed “often” for someone to be healed from COVID-19. Around 60% of the sample said they have prayed about the pandemic at least “rarely” or more, which means that about 40% of respondents have “never” engaged in prayer-based responses to the pandemic.

In contrast, about 75% of the sample have never read religious texts in response to the COVID-19 pandemic, about 85% have never worn or carried a spiritual item for protection from COVID-19, and 75% have never spoken to a religious leader about the pandemic. At the other end of the response scale, only about 4–5% of respondents have “often” read religious texts to understand the pandemic, carried spiritual items for protection, or spoken to a religious leader about COVID-19.
Table 1: Descriptive statistics

|                                | Mean or percentage | Linearized standard error | Min–max |
|--------------------------------|--------------------|----------------------------|---------|
| Prayer-based COVID-19 responses scale | 2.36                | 0.03                       | 1–4     |
| Religious resource-based COVID-19 responses scale | 1.38                | 0.02                       | 1–4     |
| Medically recommended COVID-19 responses scale | 3.48                | 0.02                       | 1–4     |
| Bible view                      |                     |                            |         |
| Fables, moral lessons           | 31.05%              | –                          | –       |
| Inspired word                   | 45.20%              | –                          | –       |
| Actual word                     | 23.75%              | –                          | –       |
| Prayer frequency                | 3.56                | 0.06                       | 1–6     |
| Religious service attendance    | 3.73                | 0.14                       | 1–9     |
| Evangelical identification      | 1.71                | 0.03                       | 1–4     |
| Christian nationalism           | 2.49                | 0.04                       | 1–5     |
| Religious tradition             |                     |                            |         |
| Evangelical Protestant          | 27.98%              | –                          | –       |
| Non-evangelical Protestant      | 18.34%              | –                          | –       |
| Catholic                        | 14.74%              | –                          | –       |
| Non-Christian                   | 4.63%               | –                          | –       |
| Agnostic                        | 6.72%               | –                          | –       |
| Atheist                         | 7.61%               | –                          | –       |
| Nothing in particular           | 14.88%              | –                          | –       |
| Something else                   | 5.1%                | –                          | –       |
| Political party                 |                     |                            |         |
| Democrat                        | 37.74%              | –                          | –       |
| Lean Democrat                   | 9.67%               | –                          | –       |
| Don’t Lean/Independent          | 17.49%              | –                          | –       |
| Lean Republican                 | 9.05%               | –                          | –       |
| Republican                      | 26.05%              | –                          | –       |
| Education                       | 3.04                | 0.04                       | 1–5     |
| Income                          | 5.44                | 0.07                       | 1–9     |
| Age                             | 3.84                | 0.06                       | 1–7     |
| Gender identity                 |                     |                            |         |
| Woman                           | 51.40%              | –                          | –       |
| Man                             | 47.36%              | –                          | –       |
| Something else                   | 1.23%               | –                          | –       |
| Race and ethnicity              |                     |                            |         |
| White, non-Hispanic             | 63.62%              | –                          | –       |
| Black, non-Hispanic             | 11.18%              | –                          | –       |
| Asian, non-Hispanic             | 4.95%               | –                          | –       |
| Other, non-Hispanic             | 1.19%               | –                          | –       |
| Hispanic                        | 16.58%              | –                          | –       |
| Multiple, non-Hispanic          | 2.43%               | –                          | –       |
| Region                          |                     |                            |         |
| Northeast                       | 17.40%              | –                          | –       |
| Midwest                         | 20.86%              | –                          | –       |

(Continued)
Both forms of religious responses to the pandemic, though, trail behind individuals’ medically recommended responses. We see that just under 60% of the sample have “often” limited physical interactions and 80% have often worn a mask due to the pandemic. Of course, individuals’ participation in some of these medically recommended responses was likely mandated by employers, schools, and businesses.

Predicting the Prayer-Based COVID-19 Responses Scale

Table 3 presents OLS regression models predicting scores on the two scales measuring individuals’ engagement with religious responses to the COVID-19 pandemic. The first model examines the prayer-based response scale. Perhaps unsurprisingly, our various measures of religiosity and religious conservatism are all positively and independently associated with an individual’s use of prayer-based responses to the COVID-19 pandemic. We see that, relative to individuals who view the Bible as a book of fables and moral lessons, individuals viewing the Bible as the inspired or actual word of God are significantly more likely to have engaged in prayer-based responses to the pandemic. We find that individuals who report more frequent prayer in general (i.e., not specific to the pandemic) are significantly more likely to have engaged in pandemic-specific prayer. The analysis also shows that frequency of religious service attendance and agreement with Christian nationalist ideology are all positively associated with prayer-based responses to the COVID-19 pandemic. Net of these measures, non-Christians are significantly more likely than evangelical Protestants to engage in prayer-based responses to the pandemic.

Interestingly, our analysis finds that political ideology influences the use of prayer in response to the pandemic. Specifically, we find that political independents and Republicans are significantly less likely to say they have prayed in response to the COVID-19 pandemic relative to Democrats. Keep in mind that this is independent of the measures of religiosity. So, if we found two individuals who are equal on measures of religiosity and other variables, we would expect the Republican individual to be less likely to say they have prayed in response to the pandemic than the Democrat. This suggests that even religious responses to COVID-19 are highly politicized, with Republicans potentially seeing any response—religious or medically recommended—as unnecessary.

Looking further down this model, we see that education is negatively associated with the prayer-based COVID-19 responses scale, although income is not significantly associated with this outcome. We also do not find a significant association between age and prayer-based responses to COVID-19. We do find, however, that women are significantly more likely to say they have used prayer-based responses to the pandemic relative to men and those identifying with some other gender. Given that the model accounts for general prayer frequency and other measures of religiosity, these differences cannot be explained as simply a general difference in prayer or religiosity between genders.

This model finds that, relative to White individuals, Asian, non-Hispanic individuals are significantly more likely to have used prayer in response to the COVID-19 pandemic. Finally, the
Table 2: Frequency of engagement in religious and medically recommended responses to the COVID-19 pandemic

|                      | Religious responses to COVID-19 pandemic | Medically recommended responses to COVID-19 pandemic |
|----------------------|------------------------------------------|-----------------------------------------------------|
|                      | Prayer-based | Religious resource-based | Masks and distancing |
| How often have you done the following in response to the COVID-19 pandemic? | I have prayed for the COVID-19 pandemic to end. | I have read religious texts to better understand the COVID-19 pandemic. | I have limited physical interaction with other people to protect myself from COVID-19. |
|                      | I have prayed for someone to be healed from COVID-19. | I have worn spiritual items to protect myself from COVID-19. | I have worn a mask to protect myself from COVID-19. |
| Never                | 38.07%       | 74.15%                  | 8.79%                                           |
| Rarely               | 10.26%       | 12.61%                  | 10.73%                                          |
| Sometimes            | 22.19%       | 8.77%                   | 23.18%                                          |
| Often                | 29.48%       | 4.47%                   | 57.30%                                          |
| Total                | 100%         | 100%                    | 100%                                            |
| Cronbach’s alpha for combined scale | 0.85 | 0.70 | 0.74 |

Note: N = 1882. All analyses are weighted.
Table 3: Ordinary least squares regression models predicting engagement in religious responses to the COVID-19 pandemic

| Frequency of engagement in religious responses to COVID-19 | Prayer-based COVID-19 response scale | Religious resource-based COVID-19 response scale |
|----------------------------------------------------------|--------------------------------------|-----------------------------------------------|
| Bible view                                               |                                      |                                               |
| Fables, moral lessons (ref.)                            | -                                   | -                                             |
| Inspired word                                           | .33**                               | .08                                           |
| Actual word                                             | .36**                               | .19*                                          |
| Prayer frequency                                         | .29**                               | .03*                                          |
| Religious service attendance                            | .03**                               | .05**                                         |
| Christian nationalism                                   | .06**                               | .09**                                         |
| Religious tradition                                     |                                      |                                               |
| Evangelical Protestant (ref.)                           | -                                   | -                                             |
| Non-evangelical Protestant                              | .10                                 | - .01                                         |
| Catholic                                                | .09                                 | .03                                           |
| Non-Christian                                           | .34*                                | .49**                                         |
| Agnostic                                                | -.16                                | .04                                           |
| Atheist                                                 | .01                                 | .12                                           |
| Nothing in particular                                   | .05                                 | .10                                           |
| Something else                                           | -.07                                | .05                                           |
| Political party                                         |                                      |                                               |
| Democrat (ref.)                                         | -                                   | -                                             |
| Lean Democrat                                           | -.04                                | -.11*                                         |
| Don’t Lean/Independent                                  | -.24**                              | -.16**                                        |
| Lean Republican                                         | -.22**                              | -.22**                                        |
| Republican                                              | -.21**                              | -.21**                                        |
| Education                                               | -.06**                              | -.04*                                         |
| Income                                                  | -.01                                | -.02**                                        |
| Age                                                     | .01                                 | -.05**                                        |
| Gender identity                                         |                                      |                                               |
| Woman (ref.)                                            | -                                   | -                                             |
| Man                                                      | -.34**                              | -.01                                          |
| Something else                                           | -.33**                              | .01                                           |
| Race and ethnicity                                       |                                      |                                               |
| White, non-Hispanic (ref.)                              | -                                   | -                                             |
| Black, non-Hispanic                                     | .06                                 | .12                                           |
| Asian, non-Hispanic                                     | .48**                               | .20                                           |
| Other, non-Hispanic                                     | -.10                                | -.30*                                         |
| Hispanic                                                | .02                                 | .08                                           |
| Multiple, non-Hispanic                                  | -.01                                | .01                                           |
| Region                                                  |                                      |                                               |
| Northeast (ref.)                                        | -                                   | -                                             |
| Midwest                                                 | -.03                                | -.08                                          |
| South                                                   | .03                                 | -.01                                          |
| West                                                    | -.18**                              | -.05                                          |

(Continued)
Table 3: (Continued)

|                              | Frequency of engagement in religious responses to COVID-19 |
|------------------------------|----------------------------------------------------------|
|                              | Prayer-based COVID-19 response scale                     |
|                              | Religious resource-based COVID-19 response scale         |
| $R^2$                        | 0.58                                                     | 0.28                                                     |
| $N$                          | 1882                                                     | 1882                                                     |

Note: All analyses are weighted.

* $p < .05$

** $p < .01$.

Regional indicators show that, relative to individuals residing in the Northeast, individuals residing in the West are significantly less likely to have engaged in prayer in response to the pandemic.

**Predicting the Religious Resource-Based COVID-19 Responses Scale**

The second column in Table 3 presents an OLS regression model predicting the religious resource-based COVID-19 responses scale. There are some notable differences between the predictors of this outcome and that for the prayer-based responses scale. We do find some of the same religious associations—religious service attendance, prayer frequency, and Christian nationalism are all positively associated with the religious resource-based COVID-19 responses scale.

We also see differences across the other social and demographic predictors. Income and age were not associated with prayer-based religious responses, but they are negatively associated with the religious resource-based COVID-19 responses scale. Asian, non-Hispanic respondents do not significantly differ from White, non-Hispanic respondents in their religious resource-based COVID-19 responses, whereas other, non-Hispanic race respondents are significantly less likely to engage in religious resource-based COVID-19 responses. And, while there were significant gender differences in the use of prayer-based responses, we do not find such differences for this outcome. There are also no regional differences in religious resource-based COVID-19 responses.

**Predicting the Medically Recommended COVID-19 Responses Scale**

Having examined the predictors of engaging in religious responses to the COVID-19 pandemic, we now turn to considering how those religious responses are associated with engaging in medically recommended responses, such as physical distancing and mask wearing. Table 4 presents OLS regression models predicting our scale measuring individuals’ use of these medically recommended responses.

Model 1 presents findings before we include any of the measures for religious responses to the pandemic. We find relatively few independent significant associations between our measures of religiosity and religious identity and engaging in medically recommended responses to COVID-19. An exception is our measure of adherence to Christian nationalist ideology, which is significantly associated with reduced engagement in medically recommended responses to the pandemic. This is in line with the findings of other studies (Perry, Whitehead, and Grubbs 2020; Whitehead and Perry 2020a). However, an individual’s view of the Bible, prayer frequency, and religious service attendance are all unrelated to the use of medically recommended responses. Catholics and agnostics are significantly more likely than evangelical Protestants to engage in medically recommended COVID-19 responses.
Table 4: Ordinary least squares regression models predicting engagement in medically recommended COVID-19 responses

| Frequency of engagement in medically recommended COVID-19 responses (mask wearing and physical distancing) | Model 1 | Model 2 | Model 3 | Model 4 |
|--------------------------------------------------------------------------------------------------------|---------|---------|---------|---------|
| Prayer-based COVID-19 response                                                                         | –       | .19**   | –       | .19**   |
| Religious resource-based COVID-19 response                                                            | –       | –       | .09**   | .03     |
| Bible view                                                                                             |         |         |         |         |
| Fables, moral lessons (ref.)                                                                          | –       | –       | –       | –       |
| Inspired word                                                                                         | –.01    | –.08    | –.02    | –.08    |
| Actual word                                                                                            | –.04    | –.11    | –.06    | –.12    |
| Prayer frequency                                                                                       | .02     | –.03    | .02     | –.03    |
| Religious service attendance                                                                          | –.01    | –.01    | –.01    | –.01    |
| Christian nationalism                                                                                  | –.08**  | –.10**  | –.09**  | –.10**  |
| Religious tradition                                                                                    |         |         |         |         |
| Evangelical Protestant (ref.)                                                                          | –       | –       | –       | –       |
| Non-evangelical Protestant                                                                             | .01     | –.01    | .01     | –.01    |
| Catholic                                                                                                | .13*    | .11     | .13*    | .11     |
| Non-Christian                                                                                         | –.01    | –.08    | –.06    | –.09    |
| Agnostic                                                                                                | .16*    | .19*    | .15     | .18*    |
| Atheist                                                                                                | .17     | .17     | .16     | .17     |
| Nothing in particular                                                                                  | –.01    | –.01    | –.01    | –.02    |
| Something else                                                                                         | .02     | .03     | .01     | .03     |
| Political party                                                                                        |         |         |         |         |
| Democrat (ref.)                                                                                        | –       | –       | –       | –       |
| Lean Democrat                                                                                         | –.05    | –.04    | –.03    | –.03    |
| Don’t Lean/Independent                                                                                 | –.34**  | –.29**  | –.32**  | –.29**  |
| Lean Republican                                                                                        | –.49**  | –.44**  | –.47**  | –.44**  |
| Republican                                                                                             | –.47**  | –.42**  | –.44**  | –.42**  |
| Education                                                                                              | .04     | .05*    | .04*    | .05*    |
| Income                                                                                                | –.01    | .01     | .01     | .01     |
| Age                                                                                                    | .08**   | .08**   | .08**   | .08**   |
| Gender identity                                                                                        |         |         |         |         |
| Woman (ref.)                                                                                            | –       | –       | –       | –       |
| Man                                                                                                    | –.17**  | –.10*   | –.17**  | –.10**  |
| Something else                                                                                         | –.24    | –.18    | –.24    | –.18    |
| Race and ethnicity                                                                                     |         |         |         |         |
| White, non-Hispanic (ref.)                                                                             | –       | –       | –       | –       |
| Black, non-Hispanic                                                                                    | .03     | .01     | .01     | .01     |
| Asian, non-Hispanic                                                                                    | .41**   | .32**   | .39**   | .31**   |
| Other, non-Hispanic                                                                                    | –.08    | –.06    | –.05    | –.05    |
| Hispanic                                                                                                | –.03    | –.03    | –.03    | –.03    |
| Multiple, non-Hispanic                                                                                 | .13     | .13     | .13     | .13     |

(Continued)
As with religious responses, we find strong partisan differences in individuals’ engagement with medically recommended responses to COVID-19. Specifically, individuals identifying as independent or Republican are significantly less likely to have engaged in medically recommended responses relative to individuals identifying as Democrat. The findings in model 1 do not show a significant association between education or income and use of medically recommended responses to the pandemic. The model does show, though, that older individuals are significantly more likely to have engaged in medically recommended responses, while men are significantly less likely relative to women to have taken such medical steps. Looking at the race and ethnicity indicators, we see that Asian individuals are significantly more likely to say they have used medically recommended responses to the COVID-19 pandemic when compared to White individuals. We do not find significant regional differences in engagement with medically recommended responses, though.

Model 2 enters our prayer-based COVID-19 responses scale. Remember that the model also controls for an individual’s general prayer frequency. So, in addition to the survey questions explicitly asking about pandemic-related prayer, this model is statistically focusing on the association of this scale with pandemic-specific prayer. We see that the prayer-based COVID-19 responses scale is significantly associated with increased engagement in medically recommended responses. All else being equal, an individual who is praying about COVID-19 is also more likely to be engaging in steps like mask wearing and physical distancing.

Model 3 enters our religious resource-based COVID-19 responses scale. For this model, we remove the prayer-based COVID-19 responses scale. We see, again, that engagement in these religious responses to the COVID-19 pandemic is significantly associated with increased engagement in medically recommended responses to the pandemic.

Model 4 enters both religious response scales simultaneously into the analysis. We find that the prayer-based COVID-19 responses scale continues to have a significant positive association with the medically recommended COVID-19 responses scale. To present this finding more clearly, Figure 1 presents individuals’ predicted scores on the medically recommended COVID-19 responses scale based on their score on the prayer-based COVID-19 response scale. Individuals with a score of 1 on the prayer-based scale—that is, responding “never” on both of the pandemic prayer items—have a predicted score of 3.22 (95% confidence interval = 3.13, 3.32) on the medically recommended COVID-19 response scale. This equates to a little over an average response of “sometimes” on the items about mask wearing and physical distancing. Individuals

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**Table 4: (Continued)**

| Region          | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------|---------|---------|---------|---------|
| Northeast (ref.)| –       | –       | –       | –       |
| Midwest         | –.03    | –.02    | –.02    | –.02    |
| South           | –.01    | –.02    | –.01    | –.02    |
| West            | –.05    | –.02    | –.05    | –.02    |
| \(R^2\)         | 0.24    | 0.28    | 0.25    | 0.28    |
| \(N\)           | 1882    | 1882    | 1882    | 1882    |

*Note:* All analyses are weighted.

*\(^*\)p < .05

*\(^{**}\)p < .01.
who score a 4 on the prayer-based response scale—that is, responding “often” to the two pandemic prayer items—have a predicted score of 3.80 (95% confidence interval = 3.71, 3.90) on the medically recommended COVID-19 response scale. This approaches the “often” response on the items about mask wearing and physical distancing.

On the other hand, once we account for an individual’s prayer-based responses to the COVID-19 pandemic, the religious resource-based COVID-19 responses scale is no longer significantly associated with the medically recommended COVID-19 responses scale. That is, individuals engaging in these other types of religious responses also tend to be using prayer, and prayer appears to be the primary mechanism leading to increased use of medically recommended steps in response to the pandemic. Looking at the other predictors in model 4, we find similar associations and differences as those found in model 1. However, education has become significantly associated with increased use of medically recommended COVID-19 responses in this model and Catholics no longer significantly differ from evangelical Protestants in their use of medically recommended COVID-19 responses.

**Discussion**

Medically recommended responses to COVID-19 are important for mitigating its spread. But they are not the only possible response to COVID-19; religious responses in terms of religious behaviors directed toward COVID-19 are another form of response. We found that those who believe the Bible is the actual Word of God and who attend religious services more regularly are more likely to engage in religious responses to COVID-19. As Schnabel and Schieman (2021) note, televangelists Jim Bakker and Kenneth Copeland encouraged their audience to pray the pandemic away and to touch their television screen to be healed. These practices, on the surface, seem like they might conflict with medically recommended responses. If one thinks praying or touching a television screen can heal one from COVID-19 or prevent its spread, why engage in medical preventative measures? However, the current study finds the opposite. Net of political
party and various measures of religiosity, religious responses to COVID-19 are positively associated with medically recommended COVID-19 responses. This suggests that religious people who are concerned about COVID-19 are willing to use whatever strategies are available to them both religious and medically recommended, which supports hypothesis 2 and fails to support hypothesis 1. This is important because it means that religious responses to COVID-19 are not replacing medically recommended responses.

Christian nationalists, however, are the exception. While they are significantly more likely to engage in religious responses to COVID-19, they are significantly less likely to engage in medically recommended responses. This may be because Christian nationalists believe that God will protect Americans if they defend their Christian identity as a nation and uphold biblical principles (McDaniel, Nooruddin, and Faith Shortle 2011; Whitehead and Perry 2020b). Christian nationalists believe “the solution to the crisis is not to take behavioral precautions like hand-washing, mask-wearing, or social distancing, but to increase America’s collective devotion, attending religious services and repenting of national sins (e.g., abortion, homosexuality, general lawlessness)” (Perry, Whitehead, and Grubbs 2020:407). This belief would lend itself to religious responses to COVID-19 but not medically recommended responses as we found in this study.

Political party identification is associated with both religious and medically recommended responses to COVID-19. Net of religiosity, Republicans are significantly less likely to engage in any response to COVID-19, whether religious or medically recommended, compared to Democrats and Independents. This is likely because Republicans are more likely to believe COVID-19 is a hoax or no worse than the common flu (Calvillo et al. 2020; Hamel et al. 2020; Heath 2020; Pennycook et al. 2020; Shepherd, MacKendrick, and Mora 2020). If someone does not believe in the threat of COVID-19, it does not make sense to respond in any way to it whether religious or not. This may also explain why men are significantly less likely to engage in both prayer-based COVID-19 responses and medically recommended responses to the pandemic. It is important to note that these political party differences are the net associations after accounting for differences in religiosity between the political party identities. If we exclude our measures of prayer frequency, religious service attendance, Bible view, Christian nationalism, and religious tradition from the models (models not shown), then we find that Republicans are significantly more likely than Democrats to have engaged in prayer-based COVID-19 responses and do not significantly differ from Democrats in their religious resource-based responses to COVID-19. In other words, these findings indicate that—given their higher religiosity relative to Democrats—Republicans are less likely to engage in religious-based responses to the pandemic than we would expect.

Education is both negatively associated with religious responses to COVID-19 and positively associated with medically recommended COVID-19 responses. This may be because, net of religiosity, those who are more educated lean more toward scientific responses to COVID-19. Asian, non-Hispanic respondents were significantly more likely than White, non-Hispanic respondents to engage in prayer-based COVID-19 responses and medically recommended COVID-19 responses. This may be because the pandemic has been particularly costly for Asian Americans both in terms of discrimination and violence toward them as well as the higher rates of Asian Americans working in labor sectors that are more vulnerable to COVID-19 (Young and Cho 2021). While we can only speculate, this may lead them to be more likely to engage in whatever strategies (both religious and medical) that might lead to mitigating or ending this pandemic.

As with any study, this one has its limitations. In particular, the cross-sectional nature of our data does not allow us to infer causality. Additionally, the medically recommended responses to COVID-19 measures focused on whether the respondent engaged in the responses to “protect themselves from COVID-19,” whereas only one of the religious responses indicated that. It is possible that some respondents may have engaged in medically recommended responses to protect others from COVID-19, which our measures are unable to capture. Future studies would benefit from including religious and medically recommended responses to COVID-19 that are self-directed as well as other-directed. Even still, the results highlight how religious and medically
recommended responses to COVID-19 are not mutually exclusive, but, in fact, may complement each other. It also reaffirms prior research findings that Christian nationalists are in many ways distinct from other types of religious people (Perry, Whitehead, and Grubbs 2020b, 2020a). Future research would benefit from further exploring other types of religious responses to COVID-19 and whether they are associated with scientific views toward COVID-19, COVID-19 vaccine uptake, and related outcomes. Additionally, we know at the organizational level that there is mixing of religious and secular responses to social problems (Bartkowski and Grettenberger 2018). Future research should examine how people respond to other health-related issues, whether religious-only, medically recommended-only, or combined responses, and how that relates to health outcomes.

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**Supporting Information**

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Table S1: Ordinary least squares regression models predicting medically recommended responses by religious and other responses.