The Messenger Matters: Religious Leaders and Overcoming COVID-19 Vaccine Hesitancy

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ABSTRACT Experts agree that vaccination is the most effective way to bring the COVID-19 pandemic under control. Nevertheless, vaccination rates have slowed nationwide and substantial segments of the population report an unwillingness to get vaccinated. We conducted an online survey experiment to investigate whether endorsement messages from various types of leaders can encourage the unvaccinated population to receive the vaccine. We surveyed 709 unvaccinated registered voters in South Dakota in April 2021 and presented them with identical messages endorsing vaccination from a political, religious, or medical leader. Our results show that messaging from a religious leader had a positive and statistically significant effect on interest in getting vaccinated, whereas messages from a political or medical leader had no statistically significant effect. These results strongly suggest that religious leaders are more effective messengers than other potential messengers and that public health officials would be well served to coordinate their efforts with leaders in faith communities.

The COVID-19 pandemic is one of the most significant public health emergencies in decades. Virtually everyone in society has been affected in some way by the pandemic. Vaccination is considered key to bringing the pandemic under control (Centers for Disease Control and Prevention 2021). However, vaccines have gone unused and vaccination centers are closing around the country. Lack of interest and even hostility toward vaccination threaten to prolong the pandemic. Experts believe that well-crafted messages could increase the public's trust and confidence in COVID-19 vaccines and boost interest in vaccination (Chou and Budenz 2020; Finset et al. 2020).

To investigate how messages from leaders affect vaccination intentions, we conducted a survey experiment on a sample of 709 unvaccinated registered voters in South Dakota in April 2021. Participants received identical messages from a political, religious, or medical leader encouraging vaccination and then answered questions about their vaccination intentions. We found that religious messengers had a positive and statistically significant impact on interest in receiving a vaccine.

Our results suggest that religious leaders may be the most effective messengers. Given the fact that evangelical Christians demonstrate more vaccine hesitancy than the rest of the population (Public Religion Research Institute 2021), public health officials should consider collaborating with religious leaders. Despite the fact that people take cues from political elites on a range of other issues, we found the political messenger to be ineffective. The results also suggest that medical leaders are not always successful messengers.

OVERCOMING VACCINE HESITANCY

Experts estimate that at least 80% of society must be vaccinated to achieve so-called herd immunity and bring the pandemic under control. Although interest in the United States and worldwide was strong at the beginning of vaccination efforts, the rates have been slowing, possibly due to the prevalence of conspiracy theories, widespread misinformation, and politicization surrounding COVID-19 mitigation efforts (Romer and Jamieson 2020). Some groups, including Republicans, evangelical Christians, white

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people, and residents of rural areas, have displayed strong reluctance toward vaccination. Of greater concern is that a significant percentage of unvaccinated people show little interest in getting vaccinated (Pew Research Center 2021). Vaccine hesitancy has emerged as a central challenge in bringing the coronavirus pandemic under control (Dror et al. 2020; Khubchandani et al. 2021).

How can people be encouraged to get vaccinated? Experts believe that effective communication could increase the public's confidence and trust in COVID-19 vaccines (Chou and Budenz 2020; Finset et al. 2020; Ratzan et al. 2021). Evidence shows that changes in the wording of messages that encourage vaccination can affect vaccination willingness (Palm, Bolsen, Kingsland 2021). One study found that messages emphasizing "personal health risks and collective health consequences of not vaccinating significantly increase Americans' intentions to vaccinate" (Motta et al. 2021, 1). Other studies, however, do not report a relationship between providing detailed information on the efficacy or safety of COVID-19 vaccines and the willingness to get vaccinated (Duquette 2020; Kerr et al. 2021). Transparency about the pros and cons of the vaccine is necessary but not sufficient to convince people to get vaccinated (Petersen et al. 2021). Special care must be taken in crafting these messages; previous experience indicates that incorrect messaging makes skeptics even more reluctant to get vaccinated (Nyhan and Reifler 2015). Overall, scholars have explored how the wording of messages can affect the willingness to get vaccinated with mixed results.

Existing studies on how to overcome vaccine hesitancy examined the content of messages, giving less attention to the presenters. Findings in social and behavioral sciences, however, suggest that the messenger may have a greater effect on shaping attitudes on an issue than the content of the message (Kuklinksi and Hurley 1994; Slothuus and Bisgaard 2021). For example, evidence has shown that characteristics of the messenger affect popular tolerance of free speech (Doherty and Stancliffe 2017). It also has been shown that the perceived ideological background of a news station shapes how people consume political news (Turner 2007). We suspect that a similar mechanism also may influence the formation of COVID-19 vaccination attitudes. People might evaluate a message encouraging COVID-19 vaccination not based solely on its content but rather on their view of the messenger. An unfavorable perception of the messenger might serve as a cognitive block that prevents the audience from processing the information in the message. In other words, the content of a message might be overwhelmed by the messenger. Encouragement from a trusted messenger may be the key to overcoming vaccine hesitancy. However, which messenger is the most effective?

THE IMPACT OF THE MESSENGER ON VACCINATION PREFERENCES

This study examines the effectiveness of political, religious, and medical leaders in increasing public favorability toward vaccination. Given the extent to which COVID-19 has been politicized, we suspected that messages from political leaders would encourage people to get vaccinated. Evidence shows that they take cues from political leaders on many social, medical, and environmental issues (Behaghel and Blau 2012; Slothuus and Bisgaard 2021). Despite being a medical issue, the coronavirus pandemic quickly became politicized in several countries, particularly those with populist leadership (Pevehouse 2020). In the United States, the Democratic Party took a pro-vaccination stance; the Republican Party was more skeptical. Former Republican President Trump openly dismissed and downplayed the threat of COVID-19. Evidence shows that both Democratic and Republican voters were taking cues from the party elites regarding COVID-19 mitigation behaviors, such as mask wearing and social distancing (Allcott et al. 2020). One study found that unvaccinated Republicans were more likely to receive a vaccine after viewing an endorsement from a Republican leader (Pink et al. 2021). A message from a political leader could positively affect attitudes toward vaccination. Therefore, we expected that:

H1: A message from a political leader will make unvaccinated people more interested in receiving a COVID-19 vaccination.

Religious messengers also could affect attitudes on COVID-19 vaccination. Research has demonstrated the importance of religion as a frame through which people perceive the world (Glazier 2013), which extends to how they assess COVID-19 mitigation efforts (Djupe and Burge 2020; Perry, Whitehead, and Grubbs 2020). Religious figures have relatively high standing among people. Academic research suggests that churchgoers often are receptive to political cues from religious elites (Margolis 2018). Evidence also shows that religious leaders can improve the participation of their congregation in public health and even vaccination acceptance (Ruijs et al. 2013; Toni-Uebari and Inusa 2009), as well as mask wearing among evangelicals (DeMora et al. 2021). Religious cue taking also has been shown to work in the opposite direction: opposition from religious figures has hampered vaccination efforts (Renne 2006). Survey evidence suggests that a significant majority considers clergy to be trustworthy and that most churchgoers generally agree with their clergy on political matters (Pew Research Center 2019). A majority also state that they would turn to clergy for information on vaccination (Public Religion Research Institute 2021). However, the same Pew findings show that religious people seem less willing to take advice from clergy in matters outside of religion. Research also indicates

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that cue taking from clergy rarely shapes their congregants' opinions on political issues (Buckley 2020; Djupe and Gilbert 2009), especially when those religious cues run counter to partisan messaging (Newmann 2018). Although the extant research is hardly definitive, we believe that, on balance, a message from a religious leader will have a positive effect on attitudes about COVID-19 vaccination. Thus:

H2: A message from a religious leader will make unvaccinated people more interested in receiving a COVID-19 vaccination.

We proposed that encouragement from medical leaders also could help overcome vaccine hesitancy. COVID-19 is fundamentally a medical issue, and medical doctors are considered the central agents in building the public's trust in vaccines (Coustasse, Kimble, and Maxik 2021; Paterson et al. 2016). Their knowledge and expertise make them ideal messengers. Evidence shows that conversations with medical experts had a positive effect on a person's willingness to receive the H1N1 vaccine (Borah and Hwang 2021). One study reported that an endorsement from Dr. Anthony Fauci increased interest in the vaccine among all groups (Bokemper et al. 2021). We suggest that a message from a medical leader will have a positive effect on attitudes about COVID-19 vaccination. Therefore:

H3: A message from a medical leader will make unvaccinated people more interested in receiving a COVID-19 vaccination.

RESEARCH DESIGN

Using original data collected from a statewide poll in South Dakota, we conducted a survey experiment to evaluate our theoretical expectations (Viskupič and Wiltse 2022).

Sample

Our sample was drawn from a survey fielded between April 12 and 25, 2021; it contained 709 unvaccinated residents of South Dakota. The experiment was part of a larger survey of 3,057 registered voters in South Dakota about the impact of the COVID-19 pandemic. We randomly selected 44,000 people from a list of registered voters in the state, who received a letter inviting them to complete an online survey via the QuestionPro survey platform. The response rate of 6.9% is similar to other statewide surveys using this method (Barber et al. 2014).[1] Some of the most vaccine-resistant subgroups in the United States include white people, rural residents, evangelical Christians, and Republicans. For these reasons, South Dakota was a good population for testing which of the messengers would have the greatest impact on attitudes about vaccination. At the time of the survey's fielding, South Dakota had opened vaccinations to all residents 16 years and older, with widespread availability in community vaccination centers, pharmacies, grocery stores, hospitals, and clinics. Given that more than 75% of those sampled in our survey had been vaccinated, we assumed that most respondents who had not received at least one dose were exhibiting some degree of vaccination hesitancy.

Experimental Design

The 709 unvaccinated participants were randomly assigned to four groups for the study: three treatment groups and one control group (see figure S1 in the online supplementary materials). Participants in the treatment groups read a short message encouraging COVID-19 vaccination from either a political (N=149), religious (N=149), or medical leader (N=172) (see the online supplementary materials for the full text). The content of the messages was identical and delivered by Republican Senator John Thune; Constanze Hagmaier, Bishop of the Evangelical Lutheran Church in America (ELCA) South Dakota Synod; or Dr. Benjamin Aaker, President of the South Dakota State Medical Association (SDSMA). Senator Thune was chosen because of his long service and near-universal name recognition in the state. Bishop Hagmaier was chosen because the ELCA is the largest denomination in the state. Dr. Aaker was chosen because the SDSMA is the state affiliate of the American Medical Association and a well-known medical advocacy group.[2] Each of these individuals independently articulated the content of our message; we simply reworked the language to be identical among treatments. The control-group participants (N=158) read a message of the same length that was unrelated to the coronavirus pandemic and did not originate from a specific messenger.[3]

Measures

After reading the message, all participants were asked: "How interested are you in getting a COVID-19 vaccine?" Interest in vaccination was measured on a 1–5 scale ranging from "not at all interested" to "very interested." Participants were asked a standard battery of demographic and political questions: age, gender, political affiliation, education, evangelical identity, and feeling thermometers for the three messengers (see tables S4–S7). The survey also included an instructional manipulation check, which 97.4% of participants answered correctly.[4]

RESULTS

Does a message from a leader affect the public's attitudes about COVID-19 vaccination? First, we conducted a difference-in-means test to estimate the impact of messengers on the interest in vaccination (see table S2). We found that compared to the control group, the religious messenger was the only treatment that was in the expected direction and was statistically significant (i.e., p=0.0495, two-tailed test). Thus, we found empirical support for hypothesis H2 but not for hypotheses H1 and H3. To obtain a more complete understanding of the effect of the messenger on vaccination attitudes, we also estimated an ordinary least squares (OLS) regression using the question that asked about interest in getting a vaccination as the dependent variable. The results are presented in figure 1. The three treatments were included as binary indicators. To control for the effects of attitudes about the individual messengers, we included thermometers (ranging from 0 to 100) on Senator Thune, the ELCA, and the SDSMA.[5] The model also included control variables that were associated with vaccination hesitancy—and COVID-19 attitudes more generally—including three-point partisan identification, age (in years), male indicator, education, trust in government, knowing someone who died from COVID-19, and evangelical self-identification (see table S3).[6]

Of the three messengers tested relative to the control message, we again found positive results for the religious messenger, which supports hypothesis H2 but not hypotheses H1 and H3. Respondents who read an encouragement message from the religious messenger showed a statistically significant and substantive

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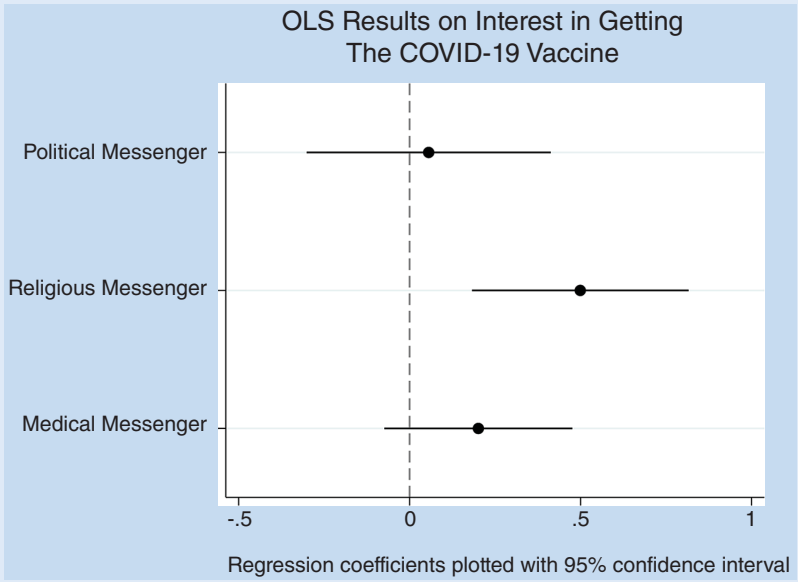
Figure 1

Regression Results on Interest in Vaccination (Two-Tailed Test)



increase of interest in vaccination: 0.51 on a 5-point scale. Interest in getting vaccinated also was clearly driven by partisan identification. The scale ranged from Democrats coded "1" to Republicans coded "3," which comported with our expectations. We were slightly surprised that the political messenger did not resonate with unvaccinated voters, given that the unvaccinated public skewed heavily toward Republican identifiers. Also unexpected was that the effect of evangelical identification was insignificant after we controlled for partisan identification. We also found that trust in government and knowing someone who died from COVID-19 had a statistically significant effect on interest in vaccination.

To understand who was most receptive to these messengers, we conducted difference-in-means tests on different sample subgroups (see table S9). Subgroup analysis enabled us to provide more specific advice to public health officials about how to best frame and direct their messaging on vaccination promotion. Contrary to what many would expect, given the popular perception that evangelical Christians are among the most resistant population, all of the messengers had a statistically significant effect on interest in vaccination among self-identified evangelicals; the effect of the religious messenger was particularly strong (i.e., p=0.0047, two-tailed test). We also found that the religious messenger had an effect on interest in vaccination among people younger than 65 (i.e., p=0.0420, two-tailed test). This finding is encouraging given that younger people are vaccinated at lower rates compared to the older population. Of particular note, the men and women in our sample were not reacting to our religious messenger very differently; both reacted to the treatment in the hypothesized direction. The various messengers had no effect on those participants who identified as Republicans and Independents, suggesting that the only explicitly partisan messenger, Senator Thune, fell flat among his own supporters.

DISCUSSION

We believe that these results will aid public health officials in crafting strategies to increase public interest in vaccination. Whereas most of the research has focused on the content of messaging, the messenger clearly matters for encouraging people who are hesitant about COVID-19 vaccines. This article shows that using religious messengers has real potential for influencing attitudes. In fact, because we used a single messenger from a specific ecclesiastical institution, we believe that these results may *underestimate* the potential for religious messengers. If the messaging targeted specific religious communities with messengers from those groups, the impact could be even more significant. These results also cast doubt on the effectiveness of messengers who have credentials from medical organizations among the unvaccinated population. Medical leaders (e.g., Dr. Fauci) have become part of the political skirmish surrounding COVID-19 mitigation strategies, which has made the unvaccinated population skeptical of medical experts and their opinions. Using other messengers may be more effective, particularly if the messenger is from a faith community.

Whereas most of the research has focused on the content of messaging, the messenger clearly matters for encouraging people who are hesitant about COVID-19 vaccines.

Several issues remain, providing the foundation for future research. First, our sample was composed of residents of South Dakota. Given the fact that white people, rural residents,

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Republicans, and evangelical Christians show less interest in vaccination, we believe that this focus is justified; however, it may limit the generalizability of our findings to more heterogeneous areas.

Second, our messenger choice of Bishop Hagmaier introduced gender variation among the messengers, which may have affected the results. It is noteworthy that among churchgoers during the pandemic, men have taken a more defiant stance to COVID-19 regulation (Smothers, Burge, and Djupe 2020). This complicates the treatment effects because men may not take cues from women in church leadership as readily as women parishioners. Although our subgroup analysis suggests that this bias was not at work in our study, additional analysis that disentangles these two factors in cue taking is warranted.

Third, all three messengers in our study were state-level figures. In future studies, scholars should explore the role of local-level officials, such as a city mayor or a pastor of a local church. Local officials often are more trusted than state and federal officials, and messages encouraging vaccination from local leaders could be more effective.

Fourth, contrary to existing scholarship, this study used the same message and varied the messenger. Moreover, our study's control group did not have a COVID-19 message or a specific messenger. It would be interesting to combine differently framed messages with different messengers. This is beyond the scope of our study, but scholars should explore it in the future.

Fifth, the finding that a message from a medical leader had decidedly marginal effects should prompt further research. Doctors and experts representing major public health organizations may have been entangled in the political melee surrounding COVID-19 and mitigation efforts. It is plausible that they have been viewed increasingly as political figures rather than scientists, which compromised their effectiveness as messengers.

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DATA AVAILABILITY STATEMENT

Research documentation and data that support the findings of this study are available at the *PS: Political Science & Politics* Harvard Dataverse at https://doi.org/10.7910/DVN/XIMJMM.

SUPPLEMENTARY MATERIALS

To view supplementary material for this article, please visit http://doi.org/10.1017/S104909652200004X. ■

NOTES

1. Our sample was generally representative of the state, with the exception of age and COVID-19 vaccination status. Older and vaccinated residents were more likely to respond to our survey invitation. This occurred despite the fact that we fielded the survey when the COVID-19 vaccination rate in South Dakota had reached 50%. In this study, we were looking only at unvaccinated participants; therefore, the fact that the overall survey population had higher vaccination rates did not affect our findings. Nevertheless, to address the imbalances in our overall sample, we used entropy balancing to weight the sample by gender, age, region within South Dakota, COVID-19 vaccination status, and political-party affiliation toward population parameters (Hainmueller 2012).
2. Neither Bishop Hagmaier nor Dr. Aaker has a partisan reputation in the state.
3. Analysis indicated that the demographic characteristics between the treatment and control groups showed little variation (see table S8).
4. The results of our statistical analysis were unaffected by the exclusion of those who failed the manipulation check. All statistics reported are derived from unvaccinated respondents.
5. Because Bishop Hagmaier and Dr. Aacker do not have the near-universal name recognition in the state compared to Senator Thune, we instead measured thermometer feelings for the institutions that they represent. We believe that the effects of these messengers were based more on people's views of their institutions than the two individuals.
6. As a robustness check, we ran an OLS regression without the weights. No variable moved above or below statistical significance as a result, and the coefficients were similar in magnitude. Additionally, we estimated ordered logit and ordered probit models with the same dependent and independent variables, without any significant change. We also conducted an equality-of-coefficients test on the experimental coefficients and found that the religious messenger had an effect distinct from the other messengers.

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