



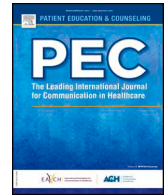
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Vaccine for yourself, your community, or your country? Examining audiences' response to distance framing of COVID-19 vaccine messages

Shupei Yuan^{a,*}, Haoran Chu^b^a Department of Communication Northern Illinois University DeKalb, IL 60008, USA^b College of Journalism and Communications University of Florida, Gainesville, FL 32611, USA

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ABSTRACT

Objective: This study explored the effects of COVID-19 vaccine promotion messages highlighting the benefit at individual, community, and country levels. Based on the cultural theory of risks, we investigated how individuals' valuation of individualism vs. communitarianism and hierarchical vs. egalitarian social structure affect their responses to vaccine messages.

Methods: An online experiment (N = 702) with four video message conditions (individual-centered, community-centered, country-centered, and no message) was conducted. Participants were asked about their cultural cognition worldview, then were randomly assigned to view one message. Participants also reported their willingness to receive COVID-19 vaccines and support for vaccine mandate.

Results: Respondents were more likely to get vaccinated and support vaccine mandates after viewing an individual-centered message, less with a community-centered message. Individuals who value individualism were more likely to respond positively to individual-centered messages, but those who believe more in communitarianism value were less likely.

Conclusion: Results showed that individuals are motivated selectively to respond to certain claims that cohere with their worldview and therefore respond differently to vaccine benefit frames.

Practice Implications: The results point to the importance of understanding audiences' worldviews. By identifying this process through hierarchical and individualistic values, properly designed health promotion messages can maximize the desired outcomes.

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1. Introduction

1.1. Background

The Novel Coronavirus Disease 2019 (COVID-19) pandemic has led to severe public health and economic challenges across the world. As no effective treatment for the disease has been identified so far, wide adoption of preventive measures such as vaccination is critical to control the spread of the disease. Now the COVID-19 vaccines are becoming widely available in the U.S., and experts estimate that an immunization rate of 50–70% is required to decelerate the spread of the disease given its current transmission rate [1]. However, polls showed that a significant portions of populations in countries such as the U.S. hesitate to get vaccinated [2]. It is critical to identify strategies that effectively promote COVID-19 vaccination. In addition, knowledge generated from such inquiry could inform

future vaccination campaigns preventing a resurgence of existing vaccine-preventable diseases (VPDs) and other pandemics.

Vaccination campaigns often focus on enhancing public knowledge of vaccine safety and effectiveness [3,4]. However, simply providing information about the vaccine may not be sufficient to increase the vaccination rate. Criticisms around such a "deficit model" [5] suggest that communicators need to seek message strategies to enhance the persuasiveness of the message beyond providing information. Meanwhile, the heated debate over political issues and other social issues have brought the discussion on individualism, communitarianism, and patriotism to conversations such as vaccine acceptance [6]. The question then becomes, how do individuals perceive the pro-COVID-19 vaccine messages which emphasize "vaccinating for yourself", "vaccinating for your community", and "vaccinating for your country" differently. As the health belief model [7] suggests, people engage in health behaviors to avoid risk and increase benefit. Just as the risks of COVID-19 are multifaceted, different aspects of the benefits of vaccination may also function differently to influence people's vaccination intention. To

* Correspondence to: Reavis Hall, Room 117, DeKalb, IL, USA.

E-mail addresses: syuan@niu.edu (S. Yuan), chu.h@ufl.edu (H. Chu).

untangle the complex interplay of vaccine benefits in shaping the U.S. public's vaccination behavior, we focused on three aspects of vaccine benefits: individual, community, and country benefits. First, the individual or personal benefits such as protecting personal health and gaining access to public facilities have long been identified as important motivators of vaccination [8,9]. Second, research indicates that people vaccinate themselves or their children not only for personal gains, but also to safeguard the wellbeing of their community [10]. Supporting such claim, perceived community benefits of a vaccine were found to promote vaccination behaviors [11], and such effects were especially salient when a vaccination campaign's success could eliminate the threats of a VPD [12]. Third, as an effective means to address the national emergency, the discussion on COVID-19 vaccine is closely associated with its benefits for the country as a whole [13]. Further, to achieve herd immunity, reaching high vaccination uptake need collective efforts country wide and beyond. Therefore, the vaccine's benefits for the country would also be an important factor in people's vaccination decision making. Considering that no theory or research has formalized the relationship between different types of vaccine benefits and vaccination behavior [8], the current study offers a novel contribution to our understanding of factors motivating vaccine uptake intention. Also worth highlighting is that the three types of benefit we examine are not mutually exclusive, the difference is on the scope (the community benefit covers the individual benefit, while the country benefit covers the community and the individual benefit) and how individuals weigh the benefit.

In the current study, we argue that these three types of benefit frames represent the relationship between audiences and the social contexts in which they situate, which we predict will motivate individuals to get vaccinated. Specifically, we intend to analyze if messages highlighting the COVID-19 vaccine's benefit to oneself, one's community, and one's country would influence their intention to get vaccinated.

Additionally, we argue that individuals' cultural cognition may affect how audiences process these framed messages. Cultural cognition describes individuals' values and predisposition regarding the relationship between a person, the government, and society [14]. Researchers found that the view of one's relationship with society affects the development of anti-vaccination attitudes [15].

The current study proposed a series of hypotheses centered around the mechanisms of benefit framing in messages promoting the COVID-19 vaccine. An online experiment with four conditions (no message, vaccinate for yourself, vaccinate for your community, vaccinate for the country) was conducted to test the effects of different benefit frames on individuals' willingness to vaccinate themselves and to share the vaccine-promotion message.

1.2. Framing the benefit

Research shows that people engage in risk preventive behaviors not only to protect themselves but also for the wellbeing of others [16,17]. However, studies also find that individuals are less likely to act on issues distant to themselves or where they live [18]. Considering the enormous scale of the COVID-19 pandemic and its unequal impacts on people in different socioeconomic groups, it is meaningful to explore if messages highlighting the COVID-19 vaccine's impacts on different levels of personal relevance influence individual vaccine-related decision making. Health communication researchers have found that framing the message to fit audiences' needs is effective in promoting desired health behaviors [19]. However, most framing studies focused on individual's motives to protect themselves, such as personal gain or loss related to the health behaviors [20] or the immediate and future impacts of these behaviors [21]. Few have studied the benefit outside of the personal scope.

Therefore, we first explore how individuals respond to these three types of message frames. More specifically, we seek to identify these message frames' influences on two outcomes: willingness to get vaccinated and support for vaccine mandate as they are important actions to mitigate COVID-19.

RQ1. : How does an individual's willingness to vaccinate differ after viewing (a) individual-centered, (b) community-centered, (c) country-centered message about the COVID-19 vaccine?

RQ2. : How does an individual's support for vaccine mandates differ after viewing (a) individual-centered, (b) community-centered, (c) country-centered message about COVID-19 vaccine?

1.3. Cultural cognition

Despite the messages' possible main effects, people may not respond to the frames in the same way. Individual traits such as cultural cognition may interact with the effects of messages highlighting the personal, community, and national benefits of the COVID-19 vaccine. Particularly, when viewing the COVID-19 as a risk issue and COVID-19 vaccine promotion as the mitigation strategy, the pandemic creates a putative societal risk in which individuals' decisions impact beyond themselves. However, how individuals process risk information is not merely based on what information is provided. It also relates to their prior belief of how societal risk should be handled. We thus argue that cultural cognition, which is "the tendency of individuals to fit their perceptions of risks and related factual beliefs to their shared moral evaluations of putatively dangerous activities" [22], would also affect audiences' response to COVID-19 vaccine messages. Cultural cognition thesis (CCT) addresses an individual's cultural values, such as the behavior they find socially beneficial, which reflects their understanding of how a society should be organized [14]. Correspondingly, such values shape people's perception of risks and the corresponding mitigation activities, depending on how congruent they are with an ideal social structure. In terms of COVID-19 and the COVID-19 vaccine, due to their strong relevance to the individual and collective wellbeing, cultural cognition should also affect an individual's perception of a public health message promoting the COVID-19 vaccine.

Researchers further argue that people's cultural cognition varies on two dimensions: hierarchy-egalitarianism and individualism-communitarianism. More specifically, persons with individualistic values are more likely to dismiss societal risks, if the mitigation actions restrict commerce and industry; while individuals who hold high egalitarian values would see commerce and industry as indictments of elites and therefore need more regulations [14,22]. Although it is not yet applied to COVID-19 vaccine communication, previous studies have applied CCT in understanding an individual's behavior and decision regarding other health and environmental risks such as HPV vaccination and climate change [22,23]. Similar to these risks, COVID-19 mitigation requires action from all society members.

The rationale of proposing the cultural cognition dimensions as moderators of benefit frames is that individuals with different levels of hierarchical and individualistic perception may weigh the benefit of an individual, community, and country-level differently, and therefore viewing individual-centered, community-centered, or country-centered may affect their decision on vaccination and vaccine mandate. In the current study, we argue that these two dimensions of cultural cognition would moderate how individuals process messages with different motive frames. More specifically, individuals who hold more individualistic values, are more likely to agree with the message that addresses personal benefit (vaccinate for yourself) compared with messages that focus on group benefits such as the community and the country.

H1. : People's individualism- communitarianism value would affect their perception of COVID-19 messages. More specifically, those upholding communitarian values are more likely to vaccinate after viewing (a) community-centered and (b) country-centered messages; those who uphold individualistic values are more likely to vaccinate after viewing (c) individual-centered messages.

H2. : People's individualism-communitarianism value would affect their perception of COVID-19 messages. More specifically, individuals with higher communitarian perception are more likely to support vaccine mandate after viewing (a) the community-centered and (b) country-centered messages than; individuals with higher individualism perception are more likely to get vaccinated after viewing (c) the individual-centered message.

Meanwhile, individuals who value a hierarchical social structure tend to be more skeptical of societal risks that require more governmental regulations (Kahan, et al., 2010). We predict that such individuals are more likely to weigh personal benefit than community or country levels. Therefore, they may be more likely to respond positively to individual-centered messages highlighting the personal benefit of a COVID-19 vaccine.

H3. : People's hierarchy-egalitarianism value would affect how they perceive COVID-19 vaccine messages. More specifically, those who favor a hierarchical social structure will be less likely to vaccinate themselves after viewing (a) community-centered and (b) country-centered messages; while those who favor an egalitarian social structure are less likely to get vaccinated after viewing (c) the individual-centered message.

H4. : People's hierarchy-egalitarianism value would affect how they respond to COVID-19 vaccine messages. More specifically, those who favor a hierarchical social structure will be less likely to support vaccine mandate after viewing (a) community-centered and (b) country-centered messages; while those who favor an egalitarian social structure are less likely to support vaccine mandate after viewing (c) the individual-centered message.

2. Method

Upon IRB approval at the lead author's institution, a between-subject experiment with four message conditions (individual-centered, community-centered, country-centered, and no message) was conducted online with a sample recruited from Prolific. co in March 2021. To understand how different types of messages motivate individuals to vaccinate themselves, we only recruited participants who have not received any COVID-19 vaccine through the pre-screening mechanism enforced on Prolific.co. A total of 702 participants who were residing in the U.S. when taking the survey completed the questionnaire and passed the attention checks.

2.1. Stimuli and Procedure

The research team created three videos respectively encouraging viewers to get vaccinated with the COVID-19 vaccine when it becomes available to them. The individual-centered message focused on the benefit of the vaccine on protecting themselves. The community-centered message focused on the vaccine's ability to protect the community in which the viewers live. The country-centered message illustrates the country-level benefit of the COVID-19 vaccine. The videos feature similar footage and are of similar length (49–51 s). A manipulation check was included, which asked participants to choose the highlighted benefit and the significant differences¹ between conditions, the results indicate that the manipulation was successful.

After providing informed consent, participants were asked to view a video regarding the COVID-19 vaccine. Before the video, participants were asked to answer a series of questions regarding their cultural cognition. After the video, they were asked to answer questions regarding their future behavioral intentions and policy support indicated below. We asked to provide their demographic information, including age, gender, political ideology, etc. Participants were debriefed in the end.

2.2. Key measures

Individual-communitarianism is measured by 6 items adopted from a previous study [22], including “The government interferes far too much in our everyday lives”, “Sometimes government needs to make laws that keep people from hurting themselves” (reversed coded), “It's not the government's business to try to protect people from themselves”, “The government should stop telling people how to live their lives”, “The government should do more to advance society's goals, even if that means limiting the freedom and choices of individuals” (reversed coded), and “The government should put limits on the choices individuals can make so they don't get in the way of what's good for society” (reversed coded), ($M = 2.99$, $SD = 0.91$, Cronbach's $\alpha = 0.88$).

Hierarchy-egalitarianism is measured by 6 items on a 5-point scale from strongly disagree to strongly agree [22], including “We have gone too far in pushing equal rights in this country”, “it seems like blacks, women, homosexuals, and other groups don't want equal rights, they want special rights just for them”, “society as a whole has become too soft and feminine”, “sometimes government needs to make laws that keep people from hurting themselves” (reverse coded), “the government should do more to advance society's goals”, even if that means limiting the freedom and choices of individuals” (Reverse coded), and “the government should put limits on the choices individuals can make so they don't get in the way of what's good for society” (Reverse coded). (Mean = 1.91, $SD = 1.01$, Cronbach's $\alpha = 0.91$).

Two dependent variables, *willingness to get vaccinated* and *support vaccine mandate* were measured by a single item question respectively on the scale of 1 (very unlikely) to 5 (very likely): consider getting the COVID-19 vaccine, and support COVID-19 vaccine mandate across the country.

2.3. Statistical analysis

To answer RQ1 and RQ2, we conducted an ANOVA with a post-hoc test to examine the effects of three message conditions on an individual's willingness to get vaccinated for COVID-19, in addition to the three message conditions, we also included a no message condition as control. PROCESS Macro was utilized to test the moderation hypotheses (H1–H4) with effect-coded message conditions [24]. The effect-coded condition variable allows us to examine the main effects and interactions of specific message conditions given the balanced distribution of message conditions. PROCESS for SPSS can estimate the coefficients of a model using OLS regression as well as generating the conditional effects in moderation. Specifically, the no message condition was included as the control, and the regression coefficients of the condition variables represent the difference

¹ Participants were asked to choose the sentence that best describes the video they just watched, from “1 =COVID-19 vaccine protects you from the disease” “2 =COVID-19 vaccine protects your community from the disease” “3 =COVID-19 vaccine protects out the nation from the disease” “4 =COVID-19 vaccine protects the world from the disease”. The result showed that participants are able to recognize the framed benefit in the assigned video message ($F(2, 567) = 209.19$, $p < .01$). Participants in individual condition mostly choose 1 as the answer ($M = 1.5$, $SD = 1.01$), same for community condition ($M = 2.01$, $SD = 0.46$), and country condition ($M = 3.03$, $SD = 0.47$).

between each experimental message condition and the grand mean of all conditions on the predicted outcomes.

3. Results

3.1. Demographics

Among the 702 participants, 43% identified as female and 3% identified as other genders. The average age was 33 (SD = 12). About 68% of the participants identified as White, 10% African American, 13% Asian, and 10% Hispanic or Latino. In terms of education, about one third (33%) of participants received a bachelor's degree, followed by some college education (27%), high school (13%), master's degree (11%), and others. About one-third (34%) consider themselves as somewhat liberal, 28% as very liberal, 21% as moderate, 13% as somewhat conservative, and 5% as very conservative.

3.2. Effects of three benefit frames

RQ1 and RQ2 asked about the effects of individual-centered, community-centered, and country-centered COVID-19 vaccine promotion messages on individuals' willingness to vaccinate and support for vaccine mandate. The results showed no significant difference between these four conditions on individual's willingness to vaccinate themselves ($F(3, 698) = 0.32, p = .81$), nor support vaccine mandate ($F(3, 698) = 0.43, p = .73$).

3.3. Effects of cultural cognition factors

The results of the moderation model ($F(11,690) = 33.30, R^2 = .35$) showed two significant main effects of message conditions on willingness to vaccinate. Specifically, compared with the overall sample, the individual-centered message had a positive effect on willingness to vaccinate ($b = 0.62, p < .05$), while community-centered message resulted in lower willingness to vaccinate ($b = -0.62, p < .05$). Meanwhile, significant negative effects of the hierarchical ($b = -0.49, p < .01$) and individualistic ($b = -0.46, p < .01$) worldviews were observed on willingness to get vaccinated. Additionally, the interaction between community-centered message and hierarchical worldview yielded a positive effect ($b = 0.19, p < .05$), while interactions between individual-centered message and individualism yielded a negative effect on willingness to vaccinate ($b = -0.21, p < .05$). Therefore, H1c is supported, and H3a is supported as well (Fig. 1).

A similar test was conducted in response to H2 and H4, with support for COVID-19 vaccine mandates as the dependent variable. The results showed very similar findings with individuals' willingness to vaccinate. The results of this moderation model ($F(11,690) = 45.31, R^2 = .42$) revealed two significant main effects on willingness to receive a COVID-19 vaccine. More specifically,

compared with the overall sample, individual-centered message had positive effect on support for vaccine mandate ($b = 0.58, p < .05$), while community-centered message resulted in lower willingness to vaccinate ($b = -0.70, p < .05$). Meanwhile, significant negative effects of hierarchical worldview ($b = -0.70, p < .01$) and individualistic value ($b = -0.49, p < .01$) were observed in support of the vaccine mandate. Additionally, interactions between individual-centered messages and the individualistic worldview yielded a negative effect on vaccine mandate support ($b = -0.24, p < .05$). Therefore, H4c is supported as well, no significant moderating effect of hierarchical value was observed, H2 is not supported (Fig. 2).

More specifically, to understand the moderation effect of cultural cognition worldviews, we further break down these two moderators as high, medium, and low (Mean-SD, Mean, Mean +SD), and present the moderation effects at different levels. By probing into the simple effects of three message frames conditioned by different levels of hierarchical and individualistic values, we found that the three types of benefit framed messages had some significant effects on individuals' vaccination decisions with certain types of individuals. Specifically, an individual-centered message is more likely to motivate individuals who prefer a hierarchical social structure but with a moderate affinity to individualistic values. Further, individuals who endorse social hierarchical and individualistic values are less likely to get vaccinated after viewing a community-centered message, while those valuing communitarianism and egalitarianism were more receptive to such a message. Lastly, respondents who rated lower on the individualism dimension but preferred a more hierarchical social structure were less likely to vaccinate themselves after viewing a country-centered message. Meanwhile, individuals who uphold communitarian values (i.e., low individualism) but with moderate to the high valuation of hierarchical social structure were more likely to support vaccine mandate after seeing an individual-centered message, while those with more hierarchical value and low/moderate egalitarian value are less likely to support vaccine mandate after viewing community-centered message. Table 1 shows the effect of three message conditions with participants with high (Mean + SD), medium (Mean) and low (Mean - SD) individualistic and hierarchical values.

4. Discussion and Conclusion

4.1. Discussion

Findings from the current study unveiled that individual's cultural cognition worldview affected their response to the messages. Although a previous study suggests that the importance of community benefit increase when a vaccination success can lead to disease control [12], We found that the individual-centered message was in general more persuasive than the other frames, while a community-centered message is less. No significant effect was

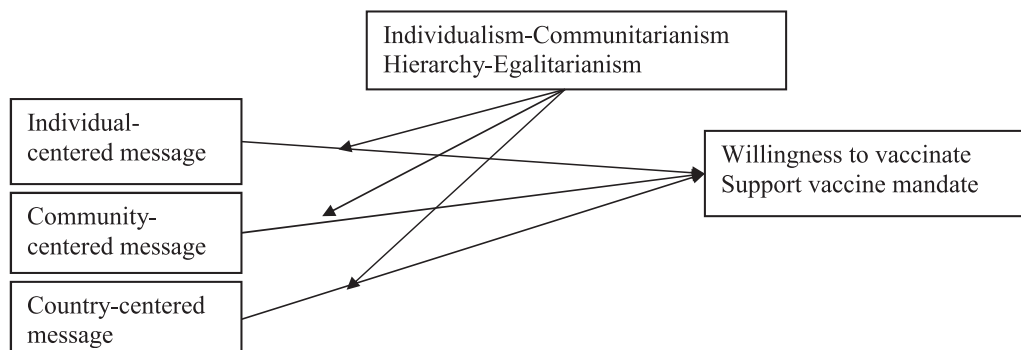


Fig. 1. Conceptual framework.

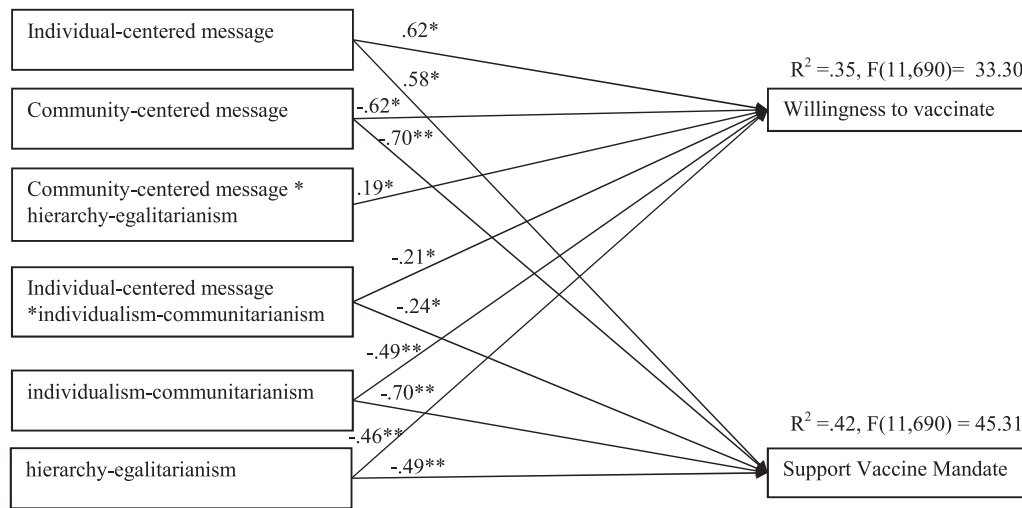


Fig. 2. estimated coefficient of Significant paths. (Note: Insignificant paths are omitted for the sake of parsimony).

observed with a country-centered message, compared with the sample grand mean. As our results show, cultural cognition played an important role in decisions regarding the COVID-19 vaccine. The mechanism behind such finding may be that individuals who are attracted to certain worldviews would credit the current risk in different ways and be motivated to solve it accordingly [22]. The significant positive interaction between community-centered message and hierarchical worldview suggests that individuals upholding egalitarian values were more likely to get vaccinated and support vaccine mandates than those who prefer a hierarchical social structure when viewing a community-centered message. The negative interaction between individual-centered messages and the individualistic value suggests that individuals who valued individualism were more likely to respond positively to individual-centered messages, while individuals who believe more in communitarianism were less likely.

The findings cohere with what previous studies suggest, that cultural cognition worldview not only guides individuals' political opinion and policy deliberation, it also affects an individual's commitment to contested decisions of the society, such as vaccination acceptance and vaccine mandate [14]. Individuals who subscribe to individualistic views may weigh the personal benefit and choice more and therefore prefer individual-centered messages but are less likely to respond to the community- or country-centered messages. In the current study, we further broke down the non-individual-oriented messages and examined community-centered and country-centered themes separately. However, we did not find any significant effects of the country-centered message on the outcome variables compared with the overall average. The possible reason is that as each state issues its policy and regulation regarding the COVID-19 vaccine, the mitigation towards COVID-19 is scaled at the state level. Therefore, the perception of vaccination benefits for the country may

Table 1
Conditional effects of the focal predictor at values of the moderator.

| | Individual-communitarianism | hierarchy-egalitarianism | Willingness to vaccinate | | Support vaccine mandate | |
|---------------------|-----------------------------|--------------------------|--------------------------|--------------|-------------------------|---------------|
| | | | B | SE | B | SE |
| Individual-centered | Mean - 1 SD | Mean - 1 SD | 0.22 | .11 * | 0.17 | 0.12 |
| | | Mean | 0.26 | .12 * | 0.27 | .13 * |
| | | Mean + 1 SD | 0.30 | 0.18 | 0.38 | .20 * |
| | Mean | Mean - 1 SD | 0.03 | 0.11 | -0.04 | 0.12 |
| | | Mean | 0.06 | 0.07 | 0.05 | 0.08 |
| | | Mean + 1 SD | 0.11 | 0.12 | 0.16 | 0.13 |
| | Mean + 1 SD | Mean - 1 SD | -0.16 | 0.17 | -0.26 | 0.18 |
| | | Mean | -0.12 | 0.12 | -0.16 | 0.12 |
| | | Mean + 1 SD | -0.08 | 0.11 | -0.05 | 0.12 |
| Community-centered | Mean - 1 SD | Mean - 1 SD | -0.26 | .11 * | -0.32 | .12 ** |
| | | Mean | -0.07 | 0.12 | -0.16 | 0.12 |
| | | Mean + 1 SD | 0.12 | 0.17 | 0.01 | 0.18 |
| | Mean | Mean - 1 SD | -0.19 | 0.11 | -0.22 | .11 * |
| | | Mean | 0 | 0.08 | -0.07 | 0.08 |
| | | Mean + 1 SD | 0.2 | 0.11 | 0.1 | 0.12 |
| | Mean + 1 SD | Mean - 1 SD | -0.11 | 0.16 | -0.13 | 0.17 |
| | | Mean | 0.07 | 0.12 | 0.02 | 0.12 |
| | | Mean + 1 SD | 0.27 | .11 * | 0.19 | 0.12 |
| Country-centered | Mean - 1 SD | Mean - 1 SD | -0.05 | 0.11 | -0.03 | 0.12 |
| | | Mean | -0.19 | 0.11 | -0.17 | 0.12 |
| | | Mean + 1 SD | -0.33 | .16 * | -0.32 | 0.17 |
| | Mean | Mean - 1 SD | 0.04 | 0.11 | 0.13 | 0.12 |
| | | Mean | -0.08 | 0.07 | -0.01 | 0.07 |
| | | Mean + 1 SD | -0.23 | .11 * | -0.17 | 0.12 |
| | Mean + 1 SD | Mean - 1 SD | 0.14 | 0.17 | 0.28 | 0.18 |
| | | Mean | 0.02 | 0.12 | 0.14 | 0.12 |
| | | Mean + 1 SD | -0.12 | 0.11 | -0.01 | 0.12 |

Note: N = 702, * p < .05, ** p < .01.

not be salient for audiences, at least in March 2021 by the time we collected data. Although the data was collected in the U.S., the framework developed could also be applied to other countries, particularly with countries with different cultures.

This study is not without limitation, the first one is that the survey sample may not represent the population in the U.S. the conclusion needs to be carried out with caution. Second, the message was tested when COVID-19 vaccine just became widely available, the findings may be affected by the time difference as well.

4.2. Conclusion

As the COVID-19 pandemic poses severe threats to each person, their communities, as well as their countries, the COVID-19 vaccine will benefit all of us on these three levels. However, what was unclear is highlighting which of these benefits would be more effective to motivate people to vaccinate themselves. This study demonstrated that highlighting different aspects of the benefits associated with the COVID-19 vaccine may motivate individuals with cultural cognition worldviews to receive the vaccine and support for vaccine mandates. Specifically, emphasizing the personal benefit of the COVID-19 vaccine appealed more to those upholding individualistic values. Results from this study not only contributes to the global push for COVID-19 vaccination but may also inform future campaigns promoting vaccination and other preventive health measures to the public.

4.3. Practice implications

The findings of the current study help government officials, health organizations, and health communicators pinpoint the general worldviews of audiences they need to know when developing health promotion messages facing audiences with different characteristics. For instance, based on one's sociocultural background or political ideology, message creators can confront the public concerns over this particular risk more effectively. As message tailoring is an important strategy to make health communication persuasive, this study adds value to guide culture-driven messages on other vaccine promotion in the future.

CRedit authorship contribution statement

Both S.Y. and H.C. developed the study survey. S.Y. collected and analyzed the data, and prepared the manuscript. Both authors were involved in interpreting the results of analysis and revised the manuscript.

Declaration of Competing Interest

The authors have no conflict of interest in the authoring of this manuscript.

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