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The Impact of Public Health Organization and Political Figure Message Sources on Reactions to Coronavirus Prevention Messages



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INTRODUCTION

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has emerged as a global health emergency. Currently, there are no effective vaccines, and there are limited biomedical treatment options. Multiple countries, including the U.S., have not implemented effective testing, tracing, or isolation and quarantine efforts. Consequently, behaviors such as using face coverings are crucial to averting substantial morbidity and mortality. Government officials, the Centers for Disease Control and Prevention (CDC), and health departments across the U.S. have used a variety of messaging approaches to promote these behaviors. One early effort, "President Trump's Coronavirus Guidelines for America," included a postcard mailed to every U.S. household at a cost to the U.S. Postal Service of \$28 million.¹ Each card was branded in large text with President Trump's name and with small White House and CDC logos. As part of a larger study to identify the effective coronavirus prevention message elements, the authors experimentally assessed the effect of message source on perceived message effectiveness (PME) and reactance (an oppositional reaction to a message).

METHODS

From May 31 to June 16, 2020, the authors conducted an online experiment that systematically varied coronavirus prevention messages by desired behavior (wash your hands, stay 6 feet away from others, avoid social gatherings, wear a mask, stay home), messaging frame, ordinance violation penalty, and message source (President Donald Trump and CDC, President Donald Trump, CDC, state health department, local health department, or no source). Each participant (N=934) rated 5 randomly assigned messages from a pool of 2,652 messages (e.g., "Protect the people who need it most. Wear a mask. This message is brought to you by President Donald Trump."). This nested stimuli design² has been used previously to inform public health messaging strategies.^{3,4}

Qualtrics Research Services used quota sampling, a nonprobability stratified sampling method common in public health

research, which resulted in a U.S. adult sample diverse on gender, age, race, ethnicity, educational attainment, and geographic region. Outcomes were a 3-item PME scale ($\alpha=0.86$) and a 3-item message reactance scale ($\alpha=0.88$; Table 1 note provides item wording). The authors tested unadjusted and adjusted multilevel models with message source predicting PME and reactance, which are important predictors of behavior and were derived from validated scales and existing literature.⁵⁻⁸ Adjusted models controlled for message-level characteristics and person-level characteristics (gender, age, race, ethnicity, and education). The adjusted models also controlled for trust in President Trump, CDC, the state health department, the local health department, and the government. This study examined whether the effect of source differed for those with higher trust in that source (source X trust interaction). The UConn Health IRB reviewed this study and deemed it exempt (#20X-222-2).

RESULTS

Participants were 50.9% female and 60.7% White, with a mean age of 41.7 (SD=18.0) years. Of the sample, 23% voted for Trump and 37.8% for Clinton in the 2016 U.S. presidential election. As shown in Table 1, message source significantly predicted PME and reactance. Compared with the postcard campaign source (President

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0749-3797/\$36.00

<https://doi.org/10.1016/j.amepre.2020.08.001>

Table 1. Association Between Message Source and Ratings of Messages, N=934, U.S. Adults, May 31–June 16, 2020

Message source	Perceived message effectiveness scale		Message reactance scale	
	Unadjusted b (95% CI)	Adjusted b (95% CI)	Unadjusted b (95% CI)	Adjusted b (95% CI)
President Trump and CDC (ref)	—	—	—	—
President Trump	−0.21 (−0.30, −0.11)	−0.21 (−0.31, −0.12)	0.08 (−0.02, 0.18)	0.10 (−0.004, 0.20)
CDC	0.38 (0.29, 0.48)	0.37 (0.28, 0.47)	−0.28 (−0.38, −0.17)	−0.26 (−0.36, −0.16)
State health department	0.41 (0.31, 0.50)	0.40 (0.31, 0.49)	−0.38 (−0.49, −0.28)	−0.37 (−0.47, −0.27)
Local health department	0.34 (0.24, 0.43)	0.33 (0.24, 0.42)	−0.28 (−0.38, −0.18)	−0.28 (−0.38, −0.18)
None	0.20 (0.10, 0.29)	0.19 (0.10, 0.28)	−0.26 (−0.36, −0.15)	−0.25 (−0.35, −0.15)

Note: Boldface indicates statistical significance $p < 0.001$; unbolded text indicates $p > 0.05$.

The 3 PME items were as follows: This message is informative; . . .credible; . . .persuasive. The 3 reactance items were as follows: This message is trying to manipulate me; . . .annoys me; . . .is trying to interfere with my personal freedom. Response options were as follows: -2 =strongly disagree, -1 =somewhat disagree, 0 =neither agree nor disagree, 1 =somewhat agree, and 2 =strongly agree. Adjusted models control for message-level characteristics (requested behavior: wash your hands, stay 6 feet away from others, avoid social gatherings, wear a mask, stay home) and person-level characteristics (gender, age, race, Latino/Hispanic ethnicity, and education). The adjusted models also controlled for trust in President Trump, CDC, the state health department, the local health department, and the government. Response options were 0 =not at all, 1 =a little, 2 =some, 3 =a moderate amount, and 4 =a lot. Intercepts for the adjusted models are $b=0.21$ and $b=-0.28$ for effectiveness and reactance, respectively. The multilevel models had a random intercepts; all other terms were fixed. CDC, Centers for Disease Control and Prevention.

Donald Trump and CDC), CDC, the state health department, the local health department, and no source elicited more positive responses to the message. The source of President Trump, however, resulted in even lower PME and equivalently higher levels of reactance. For those reporting a little to a lot of trust in President Trump, responses to messages ascribed to President Trump were not improved; however, for those reporting no trust in President Trump (54.8%), responses to messages were significantly worse. No other significant source X trust interaction was observed.

DISCUSSION

The credibility of message sources is important to message efficacy.⁹ The effectiveness of the White House postcard campaign was likely undermined by highlighting President Trump as the primary message source. These findings suggest that the campaign would have been more effective if it came from CDC alone or from the state or county health departments; even omitting any source would have been more effective and elicited less reactance. Study limitations include not testing the actual postcard and use of a nonprobability-based online sample; however, findings from experiments using similar sampling methods generalize well.^{10,11}

CONCLUSIONS

Taken together, these results indicate that attaching the names of certain political figures to expensive, lifesaving coronavirus messaging efforts may be a missed opportunity to leverage the credibility of public health institutions and can undercut the impact of the messages.

These findings may have important implications for school opening and vaccine uptake messages. Messaging strategies should privilege credible information endorsed by sources trusted by the widest segment of the public.

ACKNOWLEDGMENTS

The study described in this letter was supported by funding from the University of Connecticut Institute for Collaboration on Health, Intervention, and Policy.

No financial disclosures were reported by the authors of this paper.

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