

Supplemental Materials

Pilot Study

We conducted a pilot study in April 2020 to pre-test a series of narrative and expository messages about groups of people who were especially vulnerable during the COVID-19 pandemic at that time. The pilot study helped determine which groups of people the messages should focus on, the average time for participants to read the messages, and the sample size needed to power our hypotheses. The pilot ($N = 174$) included narrative and expository messages about healthcare workers, incarcerated people, and people struggling financially during March of the COVID-19 pandemic. The pilot study design matched the current study where participants were randomly assigned to a target group and narrative, expository, or a no message control group.

We tested the main direct effect hypotheses in the pilot study, and the smallest effect of interest was for H2 (i.e., the effect of condition on sharing), $r = 0.12$. We converted the Pearson's correlation r to Cohen's d with a website that converts effect sizes <https://www.escal.site/>, which resulted in a Cohen's d of 0.24. Then we used PANGEA power calculator (Westfall, 2016) to calculate our smallest possible sample size with a Cohen's d of 0.24 at 90% (see <https://osf.io/tfqhc/> for the PANGEA power calculator results).

In the final study, we decided to no longer include messages about people who were financially struggling during the pandemic for a number of reasons. One reason was that the consequences of COVID-19 described in the messages were not about risk of exposure which made them qualitatively different from the exposure risks described in the messages about healthcare workers and people in prison. Additionally, many of the MTurk workers were likely

facing financial struggles but were not healthcare workers or incarcerated. The possible moderating effects of different types of vulnerability and different target groups on intervention effects will be of interest in future investigations.

Outcome Measures: Beliefs and Behavior Intentions

Beliefs

Protecting Vulnerable Groups

Participants were given the following prompt: *If I stay home every day for the next two weeks, and avoid physical contact, even if I'm not sick:*

(Sliding Scale: 1 = strongly disagree, 7 = strongly agree)

- I will keep vulnerable people in my community safe.
- I will prevent others from getting COVID-19.
- I will protect more vulnerable people in our society.
- I will slow the spread of COVID-19.
- It will help stop the spread of COVID-19.
- It will help the healthcare system from being over flooded and enable people who need urgent medical care to receive it.

Perceived Vulnerability of Others

Participants were given the following prompt: *To what extent do you believe the following groups are vulnerable during the COVID-19 outbreak*

(Sliding Scale: 0 = not at all vulnerable, 100 = extremely vulnerable)

- People in prison
- Healthcare practitioners

- People who live in a house
- People working from home

Intentions to engage in prosocial behaviors

Participants were given the following prompt: *Please indicate the extent to which you intend to do the following things over the **next two weeks**.*

(Sliding Scale: 0 = Definitely will not, 100 = Definitely will)

Factor 1: Helping Friends and Family

- Share news updates about COVID-19 on social media
- Share information about how to support others during the COVID-19 pandemic on social media
- Call or text my friends or family who are particularly vulnerable during the COVID-19 pandemic (e.g. people with underlying medical conditions, over 65 years old, in prison, or are healthcare workers)
- Offer to help my friends and family who are struggling (for example, offering to send groceries or other household necessities)

Factor 2: Helping Vulnerable Groups

- Donate to reputable charities that assist healthcare workers during the COVID-19 pandemic. For example, #GetUsPPE, an organization that helps fund protective equipment purchases and delivery to healthcare workers in need.
- Donate to reputable charities that assist prisoners during the COVID-19 pandemic. For example, your local community bail fund to help to pay bail on inmates' behalf so they can be released and await trial at home.

- Send cards to people in prison

Did not load onto a factor:

- Postpone unnecessary in-person medical appointments to reduce burden on healthcare workers

Covariates in the Final Pre-Registered Models

Covariate selection

We pre-registered five possible covariates for each dependent variable that we expected might be correlated with the dependent variable. In line with our pre-registered procedures (see <https://osf.io/tfqhc/>), we tested the correlation between each candidate covariate and its corresponding dependent variable. Covariates that were significantly correlated with their dependent variables were included as additional independent predictors in our final confirmatory models.

The covariates included in the final models of each pre-registered hypothesis, and a table showing the results with and without covariates are listed below.

H1: Narrative messages (vs. expository messages) will lead to greater transportation into each message that participants read.

Final model controlled for: (1) empathic concern subscale from the Interpersonal Reactivity Index, and (2) fantasy subscale from the Interpersonal Reactivity Index.

Supplemental Table 1

Effect of narrative (vs. expository) messages on transportation with and without controlling for pre-registered covariates

	<i>b</i> (95% CI)	<i>p</i> - value
With Covariates	0.17 (0.04, 0.30)	0.009
Without Covariates	0.18 (0.04, 0.31)	0.012

H2: Participants in the narrative (vs. expository) condition will report greater intentions to share the messages they read in this study on their social media.

Final model controlled for: (1) empathic concern subscale from the Interpersonal Reactivity Index, (2) age, and (3) conservatism.

Supplemental Table 2

Effect of narrative (vs. expository) messages on sharing with and without controlling for pre-registered covariates

	<i>b</i> (95% CI)	<i>p</i> - value
With Covariates	0.00 (-0.14, 0.15)	0.953
Without Covariates	0.00 (-0.16, 0.13)	0.830

H3: (a) Higher transportation will mediate the tendency for narrative messages to increase beliefs about protecting vulnerable groups.

Final models controlled for: (1) empathic concern subscale from the Interpersonal Reactivity Index, (2) fantasy subscale from the Interpersonal Reactivity Index, (3) conservatism, and (4) frequency of watching political news.

Supplemental Table 3

Indirect effect of narrative (vs. expository) messages on beliefs that one can protect vulnerable groups via message transportation with and without controlling for pre-registered covariates

	<i>b</i> (95% CI)	<i>p</i> - value
With Covariates	0.06 (0.02, 0.11)	0.006
Without Covariates	0.08 (0.09, 0.14)	0.010

(b) Higher transportation will mediate the tendency for narrative messages to increase beliefs about perceived vulnerability of the target group described in the messages.

Final model controlled for: (1) empathic concern subscale from the Interpersonal Reactivity Index, (2) fantasy subscale from the Interpersonal Reactivity Index, (3) conservatism, and (4) frequency of watching political news.

Supplemental Table 4

Indirect effect of narrative (vs. expository) messages on beliefs that the target group was vulnerable via message transportation with and without controlling for pre-registered covariates

	<i>b</i> (95% CI)	<i>p</i> - value
With Covariates	0.04 (0.01, 0.07)	0.004
Without Covariates	0.05 (0.01, 0.10)	0.008

H4: Higher transportation will mediate the tendency for narrative messages to increase intentions for prosocial behaviors (e.g., calling/texting friends who are vulnerable to COVID-19, donating to reputable charities that benefit people who are vulnerable to COVID-19).

Factor 1 final model controlled for: (1) empathic concern subscale from the Interpersonal Reactivity Index, (2) fantasy subscale from the Interpersonal Reactivity Index, and (3) perceived stress after the onset of the pandemic.

Supplemental Table 5

Indirect effect of narrative (vs. expository) messages on intentions to engage in prosocial behaviors that help family and friends via message transportation with and without controlling for pre-registered covariates

	<i>b</i> (95% CI)	<i>p</i> - value
With Covariates	0.11 (0.04, 0.19)	0.006
Without Covariates	0.11 (0.02, 0.19)	0.020

Factor 2 final model controlled for: (1) empathic concern subscale from the Interpersonal Reactivity Index, and (2) perceived stress after the onset of the pandemic.

Supplemental Table 6

Indirect effect of narrative (vs. expository) messages on intentions to engage in prosocial behaviors that help vulnerable groups via message transportation with and without controlling for pre-registered covariates

	<i>b</i> (95% CI)	<i>p</i> - value
With Covariates	0.10 (0.03, 0.16)	0.004
Without Covariates	0.07 (0.02, 0.14)	0.020

Missing Data Treatment

The table below shows the total missing values and the percentage of the values that were missing for each variable in the statistical models of the paper. Due to there being only one missing value for two of the core outcome measures (1 out of 3180 observations) we used pairwise deletion in all statistical models to ensure all available data were used. The pairwise deletion method was conducted by the default missing row-wise deletion method in the statistical software R Version 4.0.3, which deletes the row with the missing value in our statistical model.

Supplemental Table 7
Missing values for variables in main models

Variable	n of Missing Values	Ratio of Missing Values
Average Transportation	1	0.00031
Intention to Share on Social Media	1	0.00031
Age	5	0.00157
Belief people from target group are vulnerable	0	0.00000
Beliefs that one can protect vulnerable groups	0	0.00000
Prosocial intentions that help family and friends	0	0.00000
Prosocial intentions that help vulnerable groups	0	0.00000
Empathic concern	0	0.00000
Fantasy empathy subscale	0	0.00000
Conservatism	0	0.00000
Frequency of watching political news	0	0.00000
Perceived stress after the onset of the pandemic	0	0.00000