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## News Attention and Social-Distancing Behavior Amid COVID-19: How Media Trust and Social Norms Moderate a Mediated Relationship

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### ABSTRACT

Despite the fact that social distancing is an effective mean to slow the spread of COVID-19, individuals often fail to practice this behavior. Major US news media provided information to the public about social distancing after COVID-19 was declared a pandemic, potentially spurring this preventative health practice. Using data from a representative sample of US residents, this study aims to understand the relationship between news media attention and social-distancing behavior via three potential mediators: perceived effectiveness of social distancing, perceived susceptibility to COVID-19 infection, and perceived negative consequences of infection. Media trust and social norms concerning social distancing were included as potential moderators of these relationships, along with political ideology. With multiple regression and mediation analyses, we found that news media attention was positively associated with social-distancing behavior during this period. Perceived effectiveness of social distancing mediated this relationship, while perceived susceptibility and negative consequences of COVID-19 did not. Notably, media trust negatively moderated news attention's impact on the perceived effectiveness of social distancing, with the relationship being more pronounced among those who have lower trust in media. Political ideology did not moderate the relationship between news attention and perceived effectiveness. Further, social norms negatively moderated the relationship between perceived effectiveness and social-distancing behavior, with this relationship growing stronger among those uncertain about the adoption of social-distancing norms in their circle. Overall, the study found news media to have an important role in promoting social-distancing behavior when they emphasized safety measures across the ideological spectrum.

Social distancing – maintaining a distance of at least 6 ft. between people – is an effective mean to slow the spread of COVID-19 (Center for Disease Control and Prevention, 2020; Matrajt & Leung, 2020). It is designed to reduce the odds of virus exposure by minimizing close interactions between people and communities during a pandemic (Wilder-Smith & Freedman, 2020). Scholars recommended that preemptive social-distancing measures be mandated when facing imminent community transmission of COVID-19 (Dalton et al., 2020). In the US., a study using Ferguson et al. (2020) simulation model of COVID-19 spread and mortality predicted that three to 4 months of moderate distancing, beginning in late March 2020 would potentially save 1.7 million lives by October (Greenstone & Nigam, 2020).

Despite the scientific consensus regarding the effectiveness of social distancing (e.g., Koo et al., 2020) and continual urging from the Centers for Disease Control and Prevention (Center for Disease Control and Prevention, 2020), the actual implementation and adoption of social-distancing behaviors were uneven (Miller, 2020). Ignoring guidelines and local directives, many people continued to dine out, drink at bars, and travel (Glanz et al., 2020; Pinsker, 2020). Medical experts remain concerned that a failure to social distance can spur community spread and exponentially increase COVID-19 in populations (Mandavilli, 2020). Understanding the factors and mechanisms

that contribute to social distancing will inform practical efforts for promoting this preventative health practice.

News attention is likely to have a major impact on social distancing. Previous research has emphasized the importance of news attention on individuals' implementation of preventive health measures during prior pandemics, such as H1N1, a novel influenza outbreak in 2009 (Chen & Murphy, 2011). News attention may affect the adoption of a health behavior by shaping beliefs about illness severity or susceptibility, as well as the perceived effectiveness of the behavior (Fishbein & Cappella, 2006; Jones et al., 2015).

In this study, we investigate whether and how attention to news media was related to social distancing, just after the World Health Organization declared COVID-19 a pandemic and the Trump administration affirmed the state of national emergency. Specifically, we test whether news attention is positively associated with social-distancing behavior and examine whether this relationship is mediated by relevant perceptions.

Three potential mediators merit attention: perceived effectiveness of social distancing perceived susceptibility to COVID-19 infection and perceived negative consequences of infection. Media trust and social norms concerning social distancing were included as potential moderators, along with political ideology, to examine the mechanisms by which the

perceived effectiveness of social distancing held sway (Allcott et al., 2020; Kozlowski et al., 2010; Taha et al., 2013). We use multiple regression and mediation analyses to examine these relationships with a representative sample of 2,251 respondents from a prerecruited survey panel collected between March 26 to April 1, 2020.

### News attention and health behavior

Mass media are considered to shape individuals' health behaviors in powerful ways (Wakefield et al., 2010). The media contributes to both preventing undesirable health behaviors and promoting desirable behaviors recommended by health experts (Hornik, 2002). For example, the research found that media attention to a policy supporting smoking cessation was significantly associated with quitting attempts and success (Nagelhout et al., 2015). Media can also enhance beneficial health behaviors, with the promotion of seatbelt usage motivating significant increases in seatbelt usage among both drivers and passengers (Vasudevan et al., 2009). Likewise, news coverage of breast cancer was positively associated with nonscreened women choosing to book mammography appointments (Chapman et al., 2005). When news attends to a health topic, so does the public.

Media coverage of the COVID-19 pandemic has been intensive, especially news coverage regarding information and justification for social distancing (Timothy, 2020). Our analysis of Media Cloud, an open-source platform that provides a searchable archive of a wide range of media sources used for studying media ecosystems (<https://mediacloud.org/>), confirms this coverage was widespread. As shown in Figure 1, it extended beyond centrist media to include both conservative and liberal outlets, with "social distancing" mentioned in 48,434 stories across the 24 news sources queried. Notably, by the middle of March, attention to social distancing rose dramatically, with 200 to 250 stories per day in left- and right-leaning media and 350 to 400 stories in centrist media.

Those attentive to the news would have encountered a great deal of content about social distancing to guide behavioral changes. There is sizable literature supporting the notion that individuals who pay greater attention to health-related news have more intentions to practice protective health behavior, such as avoiding unprotected sun exposure (Lovejoy et al., 2015). Similarly, Zambian women who recall messages from the

media advertising condom usage were more likely to use condoms to prevent HIV (Agha, 1998). As this suggests, amid health crises, news attention plays a particularly positive role in preventative health behavior. A panel survey about H1N1 showed that attention to news coverage regarding the risk of H1N1 viruses was positively related to self-prevention behavior (Cho et al., 2013). Similarly, exposure to media coverage of public health emergencies may increase individuals' adherence to everyday precautions, such as washing hands and avoiding close contact to slow pandemics like H1N1 (Chen & Murphy, 2011).

Thus, we hypothesize that people who pay more attention to the news would be more likely to practice social distancing during this period of acute attention, as follows:

Hypothesis 1: News attention during onset of the COVID-19 pandemic will be positively associated with social distancing behavior.

### Perceived effectiveness and risk

While some empirical studies have provided substantial evidence that media attention is positively associated with health behavior change (e.g., Hornik, 2002), other studies have shown that media exposure does not necessarily result in desirable health behaviors (Wakefield et al., 2010). For example, news attention related to the H1N1 flu was not a significant predictor for corresponding behavioral intentions of vaccination (Yang, 2015). One approach to explain these inconsistent findings is analyzing the underlying mechanisms through which media exerts an influence on health behavior. In other words, the media may change individuals' perception of health issues, which then changes their health behaviors (Fishbein & Cappella, 2006).

In the COVID-19 context specifically, news media may promote social distancing by altering the perceived effectiveness of engaging in social-distancing behaviors, the perceived likelihood of infection, or the negative consequences of infection. The perceptions' impact on social-distancing behavior is grounded in the Health Belief Model (HBM), which was developed to explain the reluctance of citizens to participate in programs for disease detection and prevention, and has served to predict and explain individuals' engagement in health behavior (Rosenstock, 1960; Skinner et al., 2015). HBM proposes that health behaviors can be explained by perceived

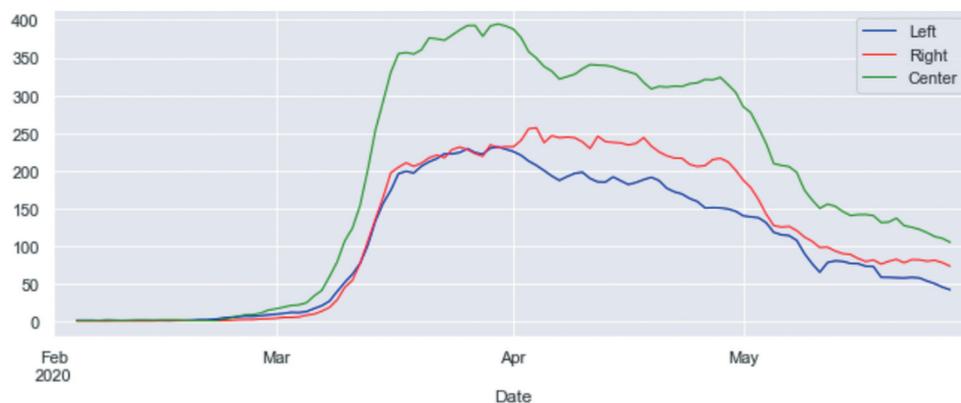


Figure 1. Daily article counts containing the phrase "social distancing" in left-leaning (blue), centrist (green) and right-leaning (red) media.

susceptibility and severity of the disease, as well as perceived benefits, and perceived barriers of behavior (Champion & Skinner, 2008). The constructs we examine regarding COVID-19 are based on major concepts in HBM. The first construct is the perceived effectiveness of social-distancing behavior; it corresponds to “perceived benefits” in HBM, which refers to individuals’ beliefs about the advantages of a recommended action to reduce threat (Jones et al., 2015). In addition, the perceived likelihood of COVID-19 infection pertains to “perceived susceptibility” in HBM – individuals’ beliefs about the likelihood of having a disease (Champion & Skinner, 2008). The last construct perceived negative health consequence of infection, corresponds to “perceived severity” in HBM, which concerns perceptions about the disease’s seriousness and consequence (Rosenstock et al., 1994).

These theories have been adapted to diverse contexts such as HPV vaccination (Donadiki et al., 2014), breast self-examination (Norman & Brain, 2005), mammography screening (Champion et al., 2000), as well as HIV needle risk practices among injection drug users (Falck et al., 1995). Of particular interest is the benefit perception in the HBM, which concerns beliefs about the effectiveness of a recommended action to reduce threat (Skinner et al., 2015). In the COVID-19 context, it is represented by the perceived effectiveness of social distancing. When an individual perceives social distancing as effective in COVID-19 prevention, he or she should practice the behavior more. This assumption is justified by previous empirical research, such as the study demonstrating that parents who perceive fewer benefits of vaccines either delay or refute children’s vaccination (Smith et al., 2011).

News media could shape this perceived effectiveness of health behavior, as previous literature indicated that exposure to media would affect individuals’ behavioral beliefs and outcome evaluations of the corresponding health behavior (Fishbein & Yzer, 2003). In the context of COVID-19, news attention during the onset of the pandemic in the US. should promote social distancing by influencing perceptions of a recommended behavior – people who are exposed to media coverage concerning social distancing will regard it as effective for COVID-19 prevention, and thus, are more likely to practice it.

Besides perceived effectiveness, perceived susceptibility, and perceived severity of the disease’s impact on health-related behavior are also documented in previous studies. For example, during H1N1, perceived risk susceptibility was related to H1N1 vaccination intention among pregnant women (Tucker Edmonds et al., 2011). Perceived severity of H1N1 was also associated with an intention to comply with advised preventive measures (Bults et al., 2011). News attention could shape these perceptions, as exposure to news media is positively correlated with risk perceptions of H1N1 influenza (Oh et al., 2015).

Thus, we hypothesize that the relationship of news attention and the practice of social distancing would be mediated through these three perceptions:

**Hypothesis 2a-c:** The statistical effect of news attention on social distancing behavior during onset of the COVID-19 pandemic will be mediated by the perceived effectiveness of social distancing (H2a), perceived likelihood of COVID-19 infection (H2b), and perceived negative consequence of COVID-19 infection (H2c).

### Media trust

The aforementioned associations between news media attention and social-distancing behavior via perceptions of social-distancing effectiveness and severity and susceptibility of infection in the context of COVID-19 might not be consistent across the population. Instead, media trust and social norms might moderate these mediated associations. With regard to media trust, previous research indicated a significant association between media trust and news exposure. For example, the research found that perceived newspaper credibility was positively associated with newspaper readership, and online news credibility was also tied to web use (Kioussis, 2001). Conversely, media skepticism was negatively related to mainstream news exposure but positively associated with nonmainstream news exposure (Tsfati & Cappella, 2003).

An individual’s perception of media coverage is related not only to news exposure but also media trust. This is because information sources with higher credibility tend to have more pronounced effects on attitude change (Petty & Cacioppo, 1986). Previous studies have shown that when people trust the media, they tend to orient toward the perception promoted by the media (Tsfati, 2003). For example, trust in news media had a positive association with an affective attitude about haze (e.g., a form of transboundary air pollution), such that people who trusted media worried about health problems caused by this form of pollution (Lin & Bautista, 2016). Research in the context of H1N1 also suggested that media trust played an important attitudinal role, especially when trust in media was low, individuals would turn against vaccination (Taha et al., 2013).

In the context of COVID-19, at least during the period of this study, news media across the political spectrum, both centrist and partisan sources paid considerable attention to the idea of social distancing, as shown in Figure 1. In addition, recent work found the usage of mainstream or alternative news sources is associated with higher levels of trust in the news (Kalogeropoulos et al., 2019). Given the sufficient media coverage of COVID-19, the typical association between media trust and news attention, as well as their potential impact on media effect, it is likely that media trust moderates the relationship between news attention and perception of the virus and social distancing in the COVID-19 context. When people have higher levels of trust in media, they might perceive social distancing as more effective, and perceive themselves as more vulnerable to COVID-19, as well as at risk of more negative consequences, if infected.

**Hypothesis 3 a-c:** Media trust will positively moderate the relationship between news attention and perceived effectiveness of social distancing (H3a), perceived likelihood of COVID-19 infection (H3b), and perceived negative consequence of COVID-19 infection (H3c).

### Social norms

Social norms are an established predictor of behavior since people are more inclined to act if they feel normative pressure to do so (e.g., Ajzen & Fishbein, 1980). Social norms have acted as a positive predictor for engaging in a range of health behaviors, including getting a mammography, having a colonoscopy,

and practicing a healthy diet (Fishbein, 2008). In previous influenza prevention efforts, researchers also observed that social norms affected preventative behaviors, with people more reluctant to wear masks and practice social distancing when they believe others were not practicing these behaviors (Kozlowski et al., 2010). Whether this is the case during the widespread community spread of COVID-19, especially among those who perceive themselves to be susceptible or who see the risks as severe, remains to be seen. The finding that social norms inconsistent with the behavior can hinder preventative actions, impeding implementation, suggests that social norms favoring behaviors, such as acceptance of social distancing, might have the opposite effect and promote said behaviors, making the impact on social distancing more pronounced. Putting this together, since social norms generally promote the corresponding behavior (Fishbein, 2008), and may alter how perceptions of benefits relate to behavioral intention (Rimal et al., 2005), we hypothesize that social norms will positively moderate the relationship of perceptions about COVID-19 on social-distancing behavior.

Hypothesis 4 a-c: Social norms will positively moderate the relationship between perceived effectiveness of social distancing (H4a), perceived likelihood of COVID-19 infection (H4b), and perceived negative consequence of COVID-19 infection (H4c) and the practice of social distancing.

## Methods

### Data and measures

Responding to widespread “community transmission” within the US. (the virus being transmitted by individuals with no travel history) in mid-March 2020, a survey was rapidly assembled and collected by a cross-disciplinary team of researchers at a large Midwestern university. Data were collected from March 26 to April 1, 2020, using a Qualtrics panel, a representative sample of US residents based on a prerecruited pool of panelists ( $N = 2251$ ). This sample also contained a probability sub-sample of residents of the Midwestern state in which the sponsoring university is located. After dropping participants that have too many missing values, there are 2196 in total. Participants had a mean age of 46.6 ( $SD = 17.0$ ), 51.9% were female, and 68.9% were White. In terms of education, 22.4% had some high school education or a high school diploma, 21.4% had some college but no degree, 35.8% had an associate’s or bachelor’s degrees, and the rest have a professional or advanced degree.

### Social distancing behavior

Participants indicated the frequency with which they engaged in social distancing through a series of eight questions on a 5-point scale (1 = *not at all*, 5 = *all the time*) such as how frequently they “keep 6–8 ft between yourself and others outside the home,” “avoid group gathering of more than 10 people,” and “avoid socializing in crowded spaces.” The mean of the eight items was used to measure community social-distancing behavior ( $\alpha = .93$ ,  $M = 4.49$ ,  $SD = .79$ ).

### News attention

Participants were asked to answer the following question: “how much attention do you pay to news stories about the following topics” on a 5-point scale (1 = *none* to 5 = *a lot*). They rated their attention to the news for “national government and politics,” “science and technology,” and “public health issues.” These three items were averaged to create the “news attention” variable ( $\alpha = .79$ ,  $M = 3.82$ ,  $SD = .93$ ).

### Perceived effectiveness of social distancing

Four items were used to assess the perceived effectiveness measure on a 5-point scale (1 = *not at all effective*; 5 = *very effective*). Participants were asked “how effective do you think physical distancing is for you,” “how effective do you think physical distancing is for the prevention of the spread of the COVID-19 coronavirus,” “how much will avoid public places reduce your own risk of getting the COVID-19 coronavirus,” and “how much will maintain 6’ distance between you and others reduces your own risk of getting the COVID-19 coronavirus.” The items were averaged to get the perceived effectiveness of social-distancing variable ( $\alpha = .82$ ,  $M = 4.28$ ,  $SD = .76$ ).

### Perceived likelihood of infection

Participants were asked to choose their perceived likelihood of getting coronavirus by answering a single item on a 5-point scale (1 = *very unlikely*; 5 = *very likely*): “How likely do you think you are to catch the coronavirus in the next month?” ( $M = 2.60$ ,  $SD = 1.11$ ).

### Perceived negative health consequence of infection

This item assessed the perceived severity of consequences if infected on a 5-point scale (1 = *not at all serious*, 5 = *very serious*): “How serious do you think the negative health-related consequences will be for you if you were to get infected with the COVID-19 coronavirus?” ( $M = 3.87$ ,  $SD = 1.12$ ).

### Media trust

It is measured by gauging the extent to which participant trust news media as a source of information about COVID-19 on a 5-point scale (1 = *do not trust at all*, 5 = *trust very much*): “Do you trust the information you hear about the COVID-19 coronavirus from the news media.” ( $M = 3.11$ ,  $SD = 1.22$ ).

### Social norm

Participants were asked to respond to four questions on a 5-point scale (1 = *none or nearly none*; 5 = *all or nearly all*): “How many of your friends currently practice physical distancing?” “How many of your family members currently practice physical distancing?” “How many “people similar to you” (people with similar age and cultural background in your area) do you think currently practice physical distancing?” and “How much do people you care about think you should practice physical distancing?” Their answers were averaged to gauge social norms ( $\alpha = .79$ ,  $M = 4.27$ ,  $SD = .76$ ).

### Demographic and ideological variables

For control purposes and to guard against alternative explanations, demographic characteristics and ideological orientations

were also incorporated into the analysis. Age, gender, education level, and whether the respondent lived in an urban community were consistently included as controls. Political ideology served as an additional moderator of news attention on the perception variables to consider the possibility that differences in partisan media diet altered this relationship. Political ideology was assessed by asking respondents two questions on a 5-point scale (1 = *very liberal*, 5 = *very conservative*): “How would you describe your political views on social issues,” and How would you describe your political views on economic issues ( $\alpha = .89$ ,  $M = 3.07$ ,  $SD = 1.07$ ).

### Analytic strategy

First, linear regression analysis was used to examine the association between news attention and social-distancing behavior, with the “lmSupport” package in R. Second, the mediating role of perceived effectiveness of social distancing, susceptibility to COVID-19, and perceived negative consequence of infection for the association between news attention and social distancing were tested using the “lavaan” package in R. To test the mediation relationship, we tested both the indirect effect and the two-component paths a and b, following suggestions in recent publications (Fiedler et al., 2018; Yzerbyt et al., 2018). For the indirect effect specifically, we followed the recommendations by Preacher and Hayes and tested the indirect effect using nonparametric percentile bootstrapping (Preacher & Hayes, 2008). Next, we examined the moderating roles of media trust by testing the interaction between media trust and news attention in predicting perceived effectiveness of social distancing, perceived likelihood of COVID-19 infection, and perceived negative consequence of COVID-19 infection. We then repeated this analysis with political ideology as the moderator in place of media trust to examine if the relationship observed for news attention was more pronounced among conservatives or liberals. Last, we tested the interactive effect between social norm and the perceived effectiveness, perceived likelihood, and perceived severity on social-distancing behavior, always controlling for demographic characteristics.

### Results

We first established that news attention is positively associated with community social-distancing behavior after controlling for demographic features ( $b = .28$ ,  $p < .001$ ,  $t(1855) = 14.70$ ,  $\eta_p^2 = .10$ ). Thus, H1 is supported. This result suggests with every one unit of increase in news attention, the frequency of social-distancing behavior increases by .28. In addition, being older ( $b = .01$ ,  $p < .001$ ,  $t(1855) = 7.53$ ,  $\eta_p^2 = .03$ ) and female ( $b = .14$ ,  $p < .001$ ,  $t(1855) = 4.18$ ,  $\eta_p^2 = .01$ ) were also positively related with social distancing.

### Mediational analysis

We next ran three separate mediating models for perceived effectiveness of social distancing, perceived likelihood of COVID-19 infection, and perceived negative consequence of infection on the association between news attention and social

distancing to test H2a-c. Consistent with established standard (Fiedler et al., 2018; Judd et al., 2014), we only claim that the data are consistent with the hypothesized mediational relationship if the following conditions are met: news attention has an effect on community social-distancing behavior (IV→DV), news attention has an effect on the mediator (IV→mediator), the mediator has an effect on social-distancing behavior (when controlling for news attention) (mediator→DV), and the indirect effect is significantly different from zero.

All requirements for mediation relationships were met only when the perceived effectiveness of social distancing was used as a mediator, but not perceptions of susceptibility and severity. For this mediation model, news attention was a significant predictor of social-distancing behavior ( $b = .30$ ,  $p < .001$ ,  $t(1860) = 15.96$ ,  $\eta_p^2 = .12$ ) (IV→DV), and it was also a significant predictor of perceived effectiveness ( $b = .31$ ,  $p < .001$ ,  $t(2103) = 18.38$ ,  $\eta_p^2 = .14$ ) (IV→mediator). Perceived effectiveness was a significant predictor of social-distancing behavior after controlling for news attention,  $b = .43$ ,  $p < .001$ ,  $t(1795) = 18.31$ ,  $\eta_p^2 = .16$ ) (mediator→DV). The R package “lavaan” was used for testing the indirect effect of news attention on social-distancing behavior through the perceived effectiveness of social distancing ( $b = .13$ , 95% CI = [0.102, 0.161]). Given that the confidence interval does not contain zero, the indirect effect is significant. Taken together, these results show the perceived effectiveness of social distancing is a significant mediator, providing support for H2a. Analysis with the same process showed perceived likelihood of infection was not a significant mediator, since the likelihood of infection was not a significant predictor of social-distancing behavior after controlling for news attention ( $b = -.02$ ,  $p = .23$ ,  $t(1855) = -1.19$ ,  $\eta_p^2 = .001$ ). The mediation effect of the perceived negative consequence of infection was not supported either, because the indirect effect was not significant ( $b = .009$ , CI = [.000, .019]). Thus, there was no evidence in favor of H2b and H2c.

### Moderation analysis

Moderators of the significant mediating relationship – perceived effectiveness of social distancing – were assessed with multiple regression, mean-centering the main predictors. Media trust negatively moderated the relationship between news attention and perceived effectiveness ( $b = -.03$ ,  $p < .05$ ,  $t(2100) = -2.36$ ,  $\eta_p^2 = .003$ ), and social norm negatively moderated the relationship between perceived effectiveness and social-distancing behavior ( $b = -.11$ ,  $p < .001$ ,  $t(1684) = -5.73$ ,  $\eta_p^2 = .02$ ). The mediated relationship and the moderation of this mediated process are presented in Figure 2, absent any demographic controls.

We further examined the moderating role of media trust for the relationship between news attention and the other perceptions – likelihood of having COVID-19, negative consequence of having COVID-19 – that were not significant mediators, as we did for perceived effectiveness of social distancing. These interactions were assessed via moderation regression analysis with mean-centered main predictors. After accounting for demographic variables – age ( $b = .01$ ,  $p < .001$ ,  $t(2095) = 6.15$ ,  $\eta_p^2 = .02$ ) and female gender ( $b = .11$ ,  $p$

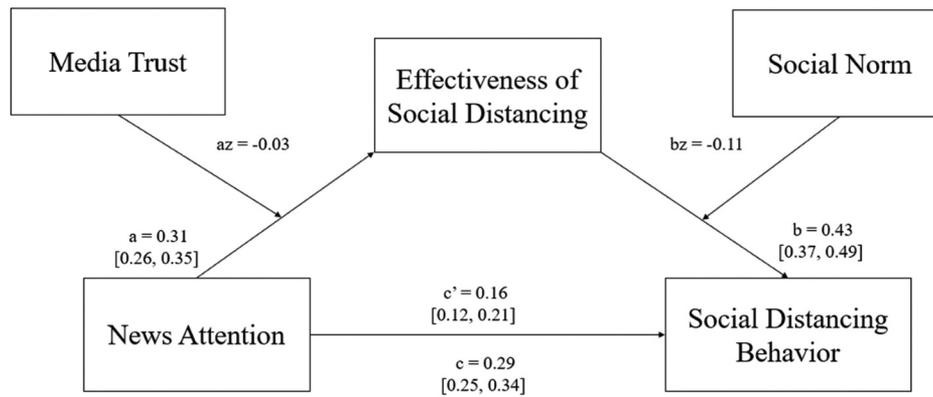


Figure 2. Moderated mediation model for social distancing.

$< .001$ ,  $t(2095) = 3.68$ ,  $\eta_p^2 = .01$ ) were significant positive predictors of perceived effectiveness of social distancing – news trust again negatively moderated the relationship between news attention and perceived effectiveness of social distancing ( $b = -.03$ ,  $p < .05$ ,  $t(2095) = -2.10$ ,  $\eta_p^2 = .002$ ). That is, the less individual trust media, the stronger the relationship between news attention and perceived effectiveness (see Figure 3). H3a was hence rejected because it predicted a positive interaction. Media trust's moderating role for news attention was also examined in models predicting perceived likelihood of infection ( $b = .04$ ,  $p = .05$ ,  $t(2180) = 1.97$ ,  $\eta_p^2 = .002$ ) and perceived infection consequences ( $b = .01$ ,  $p = .51$ ,  $t(2181) = .66$ ,  $\eta_p^2 = .00$ ), after controlling for demographic variables; neither was significant. These results yielded little support for H3a-c.

As a form of supplemental analysis, we repeated this analysis with political ideology as the moderator in place of media trust to assess whether ideology shape news attention's effect on the three perceptions, controlling for demographic characteristics. Results showed that ideology did not have a significant interaction effect with news attention when predicting

perceived effectiveness of social distancing ( $b = .001$ ,  $p = .98$ ,  $t(1925) = .03$ ,  $\eta_p^2 = .00$ ), perceived likelihood of COVID-19 infection ( $b = -.01$ ,  $p = .62$ ,  $t(1991) = -.49$ ,  $\eta_p^2 = .0001$ ), nor perceived consequence of COVID-19 infection ( $b = -.03$ ,  $p = .19$ ,  $t(1992) = -1.32$ ,  $\eta_p^2 = .001$ ).

Finally, we examined the moderation effect between the three perceptions – effectiveness of social distancing, perceived likelihood of infection, and perceived infection consequences – and social norms on social-distancing behavior, while controlling for demographic characteristics. Several demographics were significant predictors in this model, such as age ( $b = .005$ ,  $p < .001$ ,  $t(1679) = 4.94$ ,  $\eta_p^2 = .01$ ), education ( $b = .02$ ,  $p < .05$ ,  $t(1679) = 2.56$ ,  $\eta_p^2 = .004$ ), and gender ( $b = .07$ ,  $p < .05$ ,  $t(1679) = 2.20$ ,  $\eta_p^2 = .003$ ), with older, more educated and females reporting engaging in social distancing more frequently. There was, once again, a significant negative moderation effect of social norm on the association between perceived effectiveness of social distancing and Social distancing behavior ( $b = -.13$ ,  $p < .001$ ,  $t(1679) = -6.30$ ,  $\eta_p^2 = .02$ ) (Figure 4). That is, social norms negatively moderated the relationship between perceived effectiveness and social-distancing behavior, with

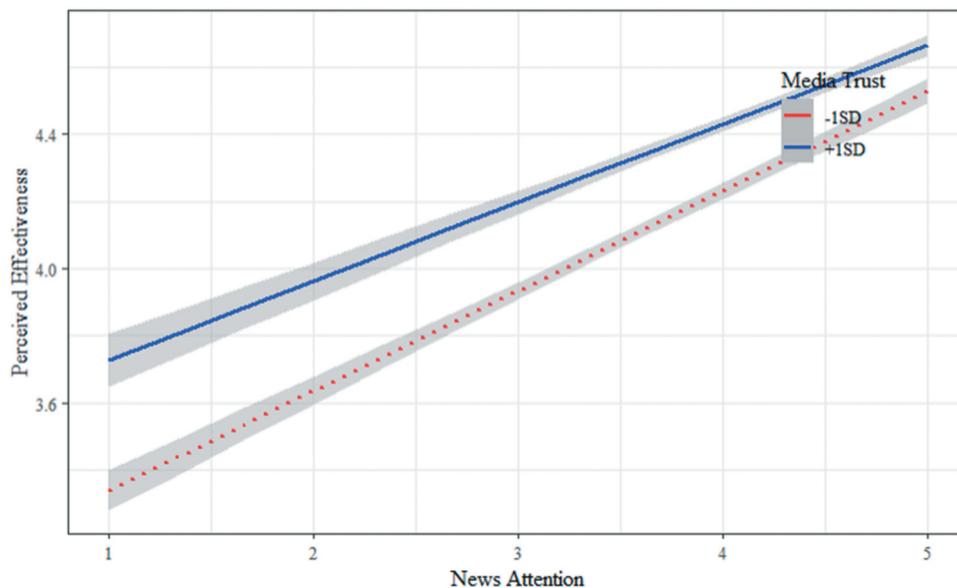
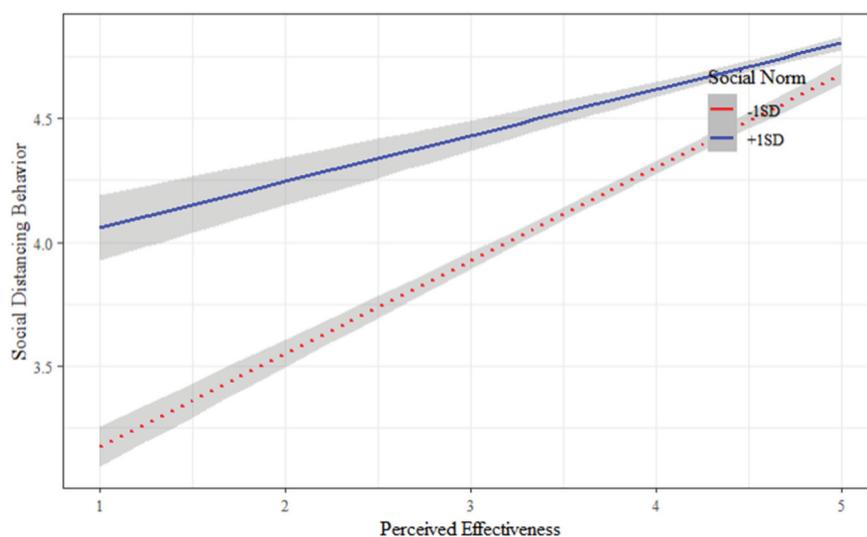


Figure 3. Media trust' moderating effect on news attention's influence on perceived effectiveness of social-distancing behavior (upper line is 1SD higher, lower line is 1SD lower).



**Figure 4.** Social norm's moderating effect on perceived effectiveness' influence on social distancing behavior (upper line is 1SD higher, lower line is 1SD lower).

this relationship stronger among those who do not perceive others around them as adopting social distancing as a norm. No significant interaction was detected between perceived likelihood of COVID-19 infection and social norms ( $b = -.03$ ,  $p = .12$ ,  $t(1704) = -1.57$ ,  $\eta_p^2 = .001$ ). However, the interaction effect between perceived severity of COVID-19 infection and social norm in prediction of social-distancing behavior was negative and significant ( $b = -.12$ ,  $p < .001$ ,  $t(1705) = -7.72$ ,  $\eta_p^2 = .03$ ). These results, including the negative interactions, do not support H4a-c.

## Discussion

This study found that news attention was related, directly and indirectly, to individuals' engagement with social distancing. The mechanisms underlying this association were tested using perceptions of the effectiveness of social distancing and perceived susceptibility and severity of COVID-19 as mediators, while also considering the potential moderating role of media trust, ideology, and social norms. Our analyses found the perceived effectiveness of social distancing mediated news attention's relationship with social-distancing behavior, while the perceived likelihood of being infected and the negative consequence of infection did not.

Further, two sets of moderation effects were observed: (1) media trust negatively moderated the relationship between news attention and perceived effectiveness of social distancing, with the relationship being stronger among those who have lower trust in media, and (2) social norm negatively moderated the relationship between perceived effectiveness and social-distancing behavior, with the relationship being stronger among those less certain about the adoption of social-distancing norms in their circle. Social norms also negatively moderated the relationship between the perceived severity of COVID-19 infection and social-distancing behavior. While none of these relationships was in the expected direction, the pattern of interactions in the context of COVID-19 is revealing.

Our finding showed the important role of news attention on the adoption of social-distancing behavior, especially during the onset of the pandemic when media attention to social distancing was ubiquitous across news media. This finding is consistent with previous work regarding the media's contribution to promoting health behaviors (Wakefield et al., 2010), and it also has implications for literature regarding media effects during pandemics. It contributes to our understanding of the role news media play in helping people to cope with a novel virus through guidance about preventative health practices, specifically in the COVID-19 context.

The perceptual mediators of news attention's association with social-distancing behavior yielded mixed results. Perceived effectiveness of social distancing was a significant mediator, while both perceived likelihood of COVID-19 infection and perceived seriousness of negative consequence of infection was not. This mediation analysis resonates with previous scholars' calling for the exploration of mechanisms in message effect, rather than being satisfied solely with the media's effect on health behaviors (Slater, 2006). Specifically, our results showing the significant mediating role of perceived effectiveness provide support for the Health Belief Model (Champion & Skinner, 2008), which advocates the perceived effectiveness of recommended health behavior as a core predictor. However, the perceived likelihood and consequence of coronavirus infection, as components of the HBM did not serve as mediators predicting social distancing. This finding corresponds to studies that found perceived vulnerability and severity to HIV/AIDS did not encourage condom use (Hounton et al., 2005). The results also resonate with work on defensive processing of threat – perceptions of threat may trigger defensive reactions to the message concerning the threat, and hence cause a negative attitude toward adaptive behaviors (Roskos-Ewoldsen et al., 2004). Together, they suggest that promoting the effectiveness of a recommended health behavior may be more empowering than addressing the negativity of the health issue.

Additionally, it is possible that perceived effectiveness of social distancing had a meaningful mediating effect relative to the perceived susceptibility and seriousness of COVID-19 because it more closely concurs with the focal behavior. This is consistent with the principle of compatibility (Ajzen & Fishbein, 2005), referring to that measuring an attitude and behavior at the corresponding level of specificity maximizes its predictive power. These results also have implications for framing research, specifically how presenting positivity (e.g., effectiveness) might enhance desirable health behavior more than describing negativity (e.g., susceptibility, negative consequence).

Notably, media trust had a small, negative moderating effect on the relationship between news attention and the perceived effectiveness of social distancing. This finding implies trust in media is not a prerequisite for media exposure to exert an effect on perceived effectiveness, but this may be a function of the specific pattern of reporting on social distancing that news media across the partisan divide adopted at the outset of the pandemic and national emergency declaration in the United States. This finding is consistent with work that notes some media effects can take place in the absence of media trust (Tsfati, 2002). The fact that those less trusting of media closed gaps in perceived effectiveness when attentive to the news during this period shows the power of news when it aligns to emphasize a protective practice.

Social norm's negative interaction with perceived effectiveness (and with perceived severity of COVID-19 infection) on social-distancing behavior is also at odds with the hypothesis but understandable in the context of COVID-19. It reveals that if an individual believes those in their social circle do not feel normative pressure to perform social distancing, they compensate by engaging in the behavior if they believe it is effective or if they believe the consequences of the illness are severe. Conversely, if they believe the social norm to practice social distancing is strong in their circle, the relationship between perceptions of effectiveness and severity and the practice of social distancing are weaker. These results imply perceptions of social-distancing effectiveness and perceptions of COVID-19 severity are especially important for social distancing in communities that do not have salient social norms. This finding adds to the existing literature on social norms and behavior (Ajzen & Fishbein, 1980; Montañó & Kasprzyk, 2015).

The results presented here have implications for news media's effect on preventive behavior at the outset of a health crisis. It incorporated mediators and moderators to enhance understanding of the process between news media attention and corresponding health behavior. These findings also have practical implications for media campaign design. Compared to emphasizing the risk and negative consequences of coronavirus, promoting the effectiveness of social-distancing might be a better strategy for persuading people to follow social distancing as a way to alleviate the spread of COVID-19.

### **Limitations and future directions**

This study has several limitations. First, there are limitations in measurement. As social distancing was self-reported, some

people might overrate the frequency of social-distancing behavior due to social desirability concerns. Observation studies using geolocation data (e.g., Painter & Qiu, 2020) could be conducted to validate respondents' social-distancing behavioral patterns in the future work. Another limitation of this study is its reliance on single-item measures to assess the perceived likelihood of infection, negative health consequences of infection, and media trust. Each of these concepts would benefit from multi-item measurement, but space limitations on a multi-investigator survey precluded that in this rapidly fielded study. Future studies should measure these constructs with multiple items and these results should be accepted cautiously.

Second, there is a limitation in our assessment of news attention. We used a measure of attention to the news in general, though this may obscure differences across partisan news sources. We validated this approach by tracking social-distancing related news coverage in left, right, and centrist media at the time period of launching the questionnaire, and showing that media spanning the ideological continuum attended to the topic, and we included a supplementary test that showed ideology was not a significant moderator for news attention when predicting perceived effectiveness of social-distancing behavior, as well as perceived susceptibility, and severity of COVID-19. Nonetheless, the way these media characterized social distancing may have varied and shaped attitudes toward the behavior differentially.

Third, the moderating effect of media trust and social norm differs from our predictions. These findings indicate a complex influence of news attention on the perceived effectiveness of social distancing, as well as perceived effectiveness' influence on social-distancing behavior. Future studies are needed to unpack the negative interaction pattern and examine whether they are restricted to the outset of the COVID-19 crisis. Any conclusions should also be restricted to a period of seemingly ubiquitous media attention to social distancing across partisan outlets, and may not extend to periods where disputes across news media hamper efforts to encourage a common set of preventative health behaviors.

### **Conclusion**

This research provides important insights into preventative health behavior during a pandemic based on a positive association between news attention and social-distancing behavior. Moreover, news attention appears to exert its influence via enhancing the perceived effectiveness of social distancing. However, the perceived likelihood of COVID-19 infection or negative consequence of potential infection was not significant mediators. In addition, media trust and social norms moderate the relationship of perceived effectiveness with news attention and social-distancing behavior, respectively, with those distrustful of media and uncertain about social norms closing gaps with the more trusting and certain.

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