

Coronaphobia or sinophobia: How journalistic practices in early COVID-19 coverage and online commentary affect anti-Chinese sentiment in the U.S.

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Abstract

Historically, pandemics have spurred an influx of disorganized information and escalated intergroup animosity, and COVID-19 is no exception. Pandemic reporting often features cues and testimonials to mark the distinction between “us” versus “them”; however, the influence of such journalistic practices on intergroup animosity remains largely unexplored during public health crises, let alone their potential interplay with ubiquitous user-generated comments that often accompany pandemic news stories in the digital era. We conducted an online survey experiment with a sample of U.S. participants ($N = 1428$) during the early phase of the COVID-19 pandemic, systematically varying the presence of stigmatizing outgroup cues, testimonials from in-versus outgroups, and social media comments either predominantly endorsing or condemning xenophobia. Our findings reveal that stigmatizing outgroup cues amplified the effects of testimonials detailing ingroup suffering, thus heightening anti-Chinese

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sentiment. These results underscore the importance of evaluating the implications of journalistic practices in public health reporting on intergroup dynamics and social solidarity. Additionally, we found that online comments predominantly condemning xenophobia moderated the effects of ingroup testimonials in the direction of inducing more positive sentiments, highlighting the vital role of an engaged audience in moderating the influences of public health news coverage.

Keywords

COVID-19, intergroup relation, intergroup threat, online commentary, public health crisis, sinophobia, testimonials

Introduction

The early stages of a public health crisis typically see a surge in public demand for trustworthy information that often outstrips the available supply. This gap compels journalists to assume the role of *de facto* public health spokespersons. Unlike in non-emergency periods when government agencies and public health practitioners have more time to carefully develop and test educational messages and communication campaigns before distribution (Brownson et al., 2018), such luxury is absent during a rapidly evolving crisis like the COVID-19 pandemic (Reynolds and Seeger, 2005). As a result, the informational void in the public communication environment is often filled by on-the-fly news production (Ogbodo et al., 2020; Reynolds and Seeger, 2005). Journalists, therefore, bear a significant responsibility to keep the public updated on the latest medical information while informing the public of the importance of adhering to recommended mitigation behaviors such as social distancing, masking, and vaccination (Larsson et al., 2003; Reynolds and Seeger, 2005). Concurrent with the onset of the COVID-19 pandemic, the U.S. witnessed an alarming surge in xenophobic and racist incidents against the Asian American and Pacific Islander (AAPI) communities, particularly targeting those of Chinese heritage (Brown et al., 2022; Gover et al., 2020; Yao, 2023). However, this rise in Sinophobia was not an isolated occurrence. Globally, other forms of xenophobia emerged. Notably, in Central- and Eastern-European nations, the pandemic-fueled blame was directed towards various ethnic or national groups, beyond just Asians or the Chinese (Petrescu-Mag et al., 2021). This global pattern suggests that the pandemic intensified long-standing prejudices, especially towards migrants. In light of these global patterns, scholars have underscored the need to explore the ramifications of pandemic news coverage beyond merely health perspectives, pressing for an examination of broader socio-political impacts and intergroup dynamics (Anwar et al., 2020; Sweet et al., 2020).

The journalistic practice of incorporating testimonials from individuals and their families about their suffering from the pandemic often stirs controversy (Sassenrath et al., 2018). In the early stages of COVID-19, it is not hard to find in news coverage distressing imagery of intubated patients struggling to breathe, poignant stories of lives lost, and narratives detailing the aftermath of brain fog, depression, and job loss, among others. In the U.S. context, the worsening U.S.-China relationship, coupled with journalists' disregard of the

stigmatizing power of outgroup labeling, led to the proliferation of pejorative terms such as “China virus,” “Wuhan virus,” and “the Kung flu”—in both partisan news and headlines from more centrist sources (e.g., [Griffiths and Gan, 2020](#)). Previous research has linked such stigmatizing outgroup cues to anti-Chinese attitudes and xenophobia ([Dhanani and Franz, 2021](#)). However, no study has yet investigated whether these cues, when combined with featured testimonials, might reinforce each other to exacerbate Sinophobia. Building on the stigma communication model ([Smith, 2007, 2012, 2014](#)) and the intergroup threat theory (ITT; [Stephan et al., 2009](#)), our first aim is to empirically assess whether the combination of testimonials portraying in- or out-group suffering and stigmatizing outgroup cues could amplify Sinophobia more than each component separately.

In today’s digital landscape, the traditional mass communication model for news production and consumption has been superseded by a more participatory ([Spyridou, 2019](#)) or masspersonal model ([O’Sullivan and Carr, 2018](#)). In this model, an engaged audience can shape the impacts of news through online interactions such as liking, sharing, and commenting. Although existing research has demonstrated how user-generated comments, particularly those problematic in nature (e.g., uncivil and toxic), can exert unique influences beyond the news stories they respond to ([Anderson et al., 2018](#); [Robinson, 2022](#); [Rösner and Krämer, 2016](#)), investigations into the interplay between comments and specific features of public health crisis coverage (e.g., stigmatizing labeling, testimonials) remain scarce, particularly for outcomes related to outgroup discrimination. Such studies can help assess whether online commentary, particularly pro-social comments denouncing xenophobia, may help mitigate the undesirable consequences of certain news coverage. To address this research gap, we conducted an online survey experiment among U.S. participants during the initial phase of the COVID-19 pandemic. We independently varied the presence of stigmatizing outgroup cues, in- versus out-group testimonials, and importantly, user-generated comments either predominantly endorsing or condemning xenophobia. We then assessed respondents’ post-exposure feelings towards Chinese people. Using COVID-19 and Sinophobia as a case study, our findings advance ITT ([Stephan et al., 2009](#)) and the stigma communication model ([Smith, 2007](#)) by elucidating how certain journalistic practices and the online discursive participation may jointly influence xenophobia during a public health crisis. We discuss how our findings can inform journalists in striking a better balance between the need for prompt distribution of public health information with the necessity of considering sociopolitical ramifications of their coverage, particularly in an increasingly interactive online environment. Furthermore, our findings also have implications for newsrooms as they consider managing online comment sections. Ensuring adequate moderation and facilitating constructive discourses in these spaces may provide an important opportunity to mitigate the unintended spread of xenophobia and improve the broader social impacts of public health reporting.

Literature review

Journalism during public health crises

Recognizing journalism’s crucial role in public health crisis communication underscores the normative significance of holding news media accountable during public health crises

(e.g., Sweet et al., 2020). During the H1N1 pandemic, journalists transitioned from a “watchdog” to a “collaborative” role, informing the public of the importance of following recommendations from public health professionals (Klemm et al., 2019). Similarly, during the early phase of the COVID-19 pandemic, local television news coverage from major urban media markets tended to feature the rapidly worsening health situation, and such coverage increased social distancing behavior among rural U.S. residents (Kim et al., 2020). However, in the face of an emerging public health crisis, the enormous pressure under which journalists strive to produce high-quality news stories, and often doing so on the fly, can sometimes conflict with the best practices in risk and crisis communication (La et al., 2020). Consequently, journalists often face criticism for inaccuracies, imbalances, and fear-mongering sound bites in their health crisis coverage (Muzzatti, 2005).

More concerning, news coverage of certain infectious diseases may inadvertently fan the flames of prejudice and xenophobia against an outgroup (Dhanani and Franz, 2021; McCauley et al., 2013; Muzzatti, 2005), especially news frames that underscore the source and transmissibility of an infectious disease. For example, some news stories erroneously traced the origin of H1N1 influenza to Mexican farms, amplifying the stigmatization of Latinx immigrants (McCauley et al., 2013). During the COVID-19 pandemic, especially in its early stages, numerous news stories employed frames and cues emphasizing the association between COVID-19 and Asian communities, particularly those of Chinese descent. These journalistic practices included extensive use of images depicting people of Asian descent wearing masks or suffering in hospital beds, of claims singling out China and Chinese people as the contagion’s source, and of stigmatizing language to label the disease—referring to it as the “Wuhan virus” or “China virus,” even in stories from reputable sources such as CNN, BBC, and The New York Times (e.g., Griffiths and Gan, 2020). These practices carry significant repercussions. A recent experimental study found that news stories emphasizing the China-as-origin frame heightened U.S. participants’ perceptions that Asian Americans pose a significant threat and general xenophobia, whereas news frames depicting health threats did not produce comparable negative consequences (Dhanani and Franz, 2021). Compared to the pre-COVID era, Asian communities in the U.S. have faced a significant increase in incidents of racial slurs, discriminatory confrontations, and even physical assaults since the pandemic’s onset (Brown et al., 2022; Gover et al., 2020; Yao, 2023).

Journalists need to be mindful of such potential consequences of their reporting strategies (e.g., deployment of frames, use of testimonials, selection of visual images) and research is needed to empirically examine the causal connections. In this study, we provide experimental evidence demonstrating both the positive and negative impacts of two prevalent news coverage strategies employed in the early days of the COVID-19 pandemic: the incorporation of stigmatizing outgroup cues and the use of patient testimonials in public health news stories.

Fueling sinophobia: how stigmatizing outgroup cues and testimonials may reinforce each other

The COVID-19 pandemic poses serious threats to the physical and economic well-being of any country, constituting a “realistic” threat in ITT terms (Stephan et al., 2009). The

disturbing increase in anti-Asian sentiment since the onset of the pandemic, which ranges from racist slurs to violence and hate crimes (Gover et al., 2020), serves as a stark reminder of the historical “othering” of contagious diseases, where the origin of diseases is often associated with a stigmatized outgroup (Muzzatti, 2005; Reny and Barreto, 2022).

The ITT suggests that when ingroup members perceive an outgroup as posing either a realistic or symbolic threat, they develop antagonistic attitudes, blame the outgroup for the perceived threat, and take punitive action (Stephan et al., 2009). This theory aligns with social identity theories that similarly emphasize humans’ tribalistic mindset—that is, the tendency to differentiate between groups when developing one’s self-consciousness (Tajfel et al., 1979). Consistently, as suggested by the stigma communication model (Smith, 2007), for an intergroup threat to induce the discrimination and stigmatization of an outgroup, an individual would first need to experience or observe *peril*—a symbolic or physical danger posed to the ingroup, similar to the concept of threat in ITT (Stephan et al., 2009)—and simultaneously attribute this peril to an outgroup (Smith, 2012). The news media can thus play a significant role in fostering outgroup stigmatization by using frames and cues that label an outgroup, mark “us” versus “them” differences, and emphasize the responsibility of the outgroup for posing peril (Smith, 2012). Therefore, evaluating the impacts of journalistic practices in pandemic coverage on intergroup relations is critical to holding journalism accountable during public health crises.

In this study, we empirically test the impacts of two commonly adopted journalistic practices on Sinophobic sentiment among a U.S. sample: the use of (a) stigmatizing outgroup labels against Chinese people (vs. absence) and (b) testimonials narrated by U.S. patients (vs. by Chinese patients). In particular, we argue that these two journalistic practices, frequently seen in COVID-19-related news, could reinforce each other to amplify Sinophobia among American readers. This interaction hypothesis is derived from the ITT (Stephan et al., 2009) and the stigma communication model (Smith, 2007) but has not been systematically investigated in prior research.

Firstly, the process of attributing blame can be inadvertently facilitated by journalists’ use of stigmatizing labels (e.g., “China virus”) or by quoting derogatory remarks from politicians (e.g., “Kung flu”). For instance, in early February 2020, several news articles published by reputable sources such as CNN and The New York Times used the term “Wuhan coronavirus” and included images that underscored the harrowing experiences of Wuhan citizens. Similarly, a BBC article published in January 2020 prominently featured the term “Chinese virus” in its headline. Despite the article’s efforts to debunk misinformation related to “bat soup” and “bioweapon” conspiracies, such stigmatizing labels could have already influenced attitudes towards this outgroup.

According to the stigma communication model (Smith, 2007), the use of a group label can lead to the marginalization of the labeled group from the broader community and encourage the creation of stereotypes (Hogg and Reid, 2006). The labeling of COVID-19 as the “China virus” also implies the attribution of responsibility for the pandemic to Chinese people, which can further intensify intergroup animosity (Smith, 2009). These concerns are substantiated by recent experimental studies that manipulated the presence of stigmatizing labels associating the origin of the COVID-19 pandemic with China and Chinese people (Dhanani and Franz, 2021). These stigmatizing outgroup cues, whether

unintentionally used due to the absence of an official term or, in some instances, deliberately chosen by political motivations, risk fanning the flames of deep-seated xenophobia among some Americans. Therefore, we hypothesize that:

H1. *U.S. participants viewing the news articles containing stigmatizing outgroup cues (vs. no stigmatizing outgroup cues) would report more negative sentiment towards Chinese people and immigrants.*

Secondly, as a popular approach to presenting health information (Slater et al., 2003), testimonials are routinely used in health communication (Sassenrath et al., 2018). Studies have found that testimonials from patients suffering from infectious or non-infectious diseases may help alleviate discrimination towards the patient group through empathy (Mehta et al., 2015). However, in a global pandemic, the impact of patient testimonials can be mixed, depending on the national identity of the person depicted in the testimonials. When an outgroup's suffering is detailed in the testimonials, although empathy may sometimes reduce discrimination towards the outgroup (Shih et al., 2013), such empathy tends to be limited to people perceived as close others, and not extending to outgroups (Cikara et al., 2014). Thus, we pose the research question regarding outgroup testimonials' effects on outgroup discrimination:

RQ1. *Will U.S. participants viewing the news articles containing outgroup testimonials portraying Chinese people's suffering (vs. the no-testimonial control) report more positive sentiment towards Chinese people and immigrants?*

On the other hand, vivid testimonials illustrating the suffering of ingroup members can stimulate empathy towards these ingroup members. This provides an opportunity for readers who have not yet contracted COVID-19 to vicariously experience the severe consequences of the disease, which in turn can intensify hostility towards the outgroup (Atwell Seate and Mastro, 2016). These testimonials also vividly highlight the peril posed to the ingroup by the stigmatized outgroup (Smith, 2007).

H2. *U.S. participants viewing the news articles containing ingroup testimonials depicting American people's suffering (vs. the no-testimonial control) would report more negative sentiment towards Chinese people and immigrants.*

In one previous experimental study on COVID-19 news coverage and anti-Asian hate, stigmatizing outgroup cues that attribute the threat of COVID-19 to China indeed increased Sinophobic beliefs and anti-Asian attitudes in general, and particularly among Republicans (Dhanani and Franz, 2021). But this study has not yet examined whether presenting ingroup testimonials portraying American patients' suffering might further amplify the deleterious impacts of stigmatizing outgroup cues.

According to the stigma communication model (Smith, 2007), messages that highlight certain elements, including marks, labels, responsibility, and peril, can elicit emotional reactions that foster stigmatizing attitudes towards the implicated outgroup. Following this theory, Smith (2012, 2014) found that the combination of responsibility and peril in

stigma communication messages led to higher perceived dangerousness of the stigmatized group and the likelihood of disseminating the stigmatizing message. In the case of COVID-19 news messages, stigmatizing outgroup cues acting as an indicator of potential “responsibility,” when accompanied by ingroup testimonials of suffering carrying the message of potential “peril,” may further elevate people’s tendency to blame the outgroup for the ingroup members’ misfortune and, thus, result in discrimination. Experimentally varying these two components helps clarify whether their combination might be particularly worrisome in the direction of fueling Sinophobia than either component alone.

During a public health crisis, this is important because “who to blame for the disease” often becomes a point of heated dispute. News stories can sometimes inadvertently amplify the attribution of blame to outgroups, even when the accusation is not explicit. Understanding whether both components are necessary to increase derogatory attitudes against an outgroup can elucidate the necessary conditions (combined or alone) for perceived threat in ITT (or the peril component in the stigma communication model) to translate into intergroup animosity.

***H3.** There will be a positive interaction between stigmatizing outgroup cues and ingroup testimonials portraying Americans’ suffering, such that the presence of stigmatizing outgroup cues will enhance the impact of ingroup testimonials (vs. the no-testimonial control) in the direction of producing even more negative sentiment among U.S. participants towards Chinese people and immigrants.*

The moderating roles of an active online audience

Journalism is increasingly practiced through the lens of a participatory culture (Singer et al., 2011) that integrates readers in the ongoing construction, diffusion, and contestation of news (Spyridou, 2019). Voices of the public can be easily found in comment sections available for most news websites and social media sites, where readers make their voices visible through likes, shares, and comments attached to news story posts (Stroud et al., 2016a). About 77.9% of Americans have read news comments at some point (Stroud et al., 2016b). The prevalence of participatory news consumption has inspired research on the influences of reader-contributed comments.

Empirical studies have suggested that news comments can affect readers’ perceptions of and responses to the issue presented in the news. Comments may lead to polarized public opinions—Lee et al. (2021) found that opinion-reinforcing (vs. opinion-challenging) comments led participants to overestimate the consistency between the position of the news story and their own issue stance and, by extension, the degree to which public opinions are on their side. Exposure to aggressive (vs. non-aggressive) online comments led readers to express more aggression in their own comments (Rösner and Krämer, 2016). In the context of public health, online comments can influence how people evaluate health promotional messages and form opinions about health issues. In an experiment, Liu and Shi (2019) found that exposure to online comments dominated by behavioral cues mentioning e-cigarette use led to perceptions more in favor of e-cigarette use than exposure to control comments mentioning nonuse. Studies also found that

derisive (vs. supportive) comments led readers to have poorer evaluations of an anti-marijuana public service announcement (Walther et al., 2010).

Given the documented role of comments in moderating the influences of the referenced news story, we expect that online news comments endorsing or calling out xenophobia may further shift how audiences may react to news stories varying in outgroup cues and testimonials. In the social media era, the attribution of the blame can be shaped not only by news stories but also by audience-contributed comments perceived to index public opinions and norms. On the one hand, anti-discrimination comments may reinforce the longstanding social norm that values equality and respect for all in the U.S., hence likely to offset certain Sinophobia-fueling news coverage (Allen et al., 2014). An active audience resolutely denouncing xenophobia may curb the tendency to attribute blame to the Chinese people and immigrants even after reading vivid portrayals of ingroup members' suffering, thus reducing antagonistic feelings towards this outgroup. On the other hand, if the comments predominantly reinforce the blame and openly support xenophobia, this may lead to an overestimation the prevalence of Sinophobic views in the public, hence justifying the blame and further increasing antagonistic feelings.

***H4a.** There will be a negative interaction between ingroup testimonials portraying American's suffering and predominantly anti-xenophobia comments, such that these comments will reduce the impacts of ingroup testimonials (vs. the no-testimonial control) in the direction of reducing U.S. participants' negative sentiment towards Chinese people and immigrants.*

***H4b.** There will be a positive interaction between ingroup testimonials portraying American's suffering and predominantly pro-xenophobia comments, such that these comments will amplify the impacts of ingroup testimonials (vs. the no-testimonial control) in the direction of increasing U.S. participants' negative sentiment towards Chinese people and immigrants.*

Method

Participants and study design

To investigate the causal impacts of journalistic practices and online comments, we conducted an online survey in summer 2020, sampling U.S. adults through the Qualtrics panel. Of the 2064 responses, we removed the 521 incompletes. An additional 115 outliers who had completing time exceeding $1.5 \times \text{IQR}$ (interquartile range) above the third quartile or below the first were excluded. This resulted in a final sample ($N = 1428$) comprising 65.1% females and 83.9% whites, with an average age of 54 ($SD = 18.1$). Notably, the exclusions did not significantly differ by condition.

Our study used a 2 (stigmatizing outgroup cues: present vs. absent) \times 3 (testimonial: Chinese vs. American vs. none) \times 3 (comments: dominated by pro-vs. anti-xenophobia comments vs. none) between-subject factorial design. After providing consent, participants answered covariate-related questions and were randomized to one of six news conditions, adjusting for outgroup cues and the origin of testimonials (American vs.

Chinese vs. none). Post exposure to the news article, they were assigned into one of three comment conditions: no comments, 10 comments predominantly opposing xenophobia, or 10 comments predominantly supporting xenophobia, specifically against the Chinese. Every news and comment combination was selected randomly from an extensive pool to counteract case-category confounding (Slater et al., 2015). Outcome variables and demographics were measured post-treatment. Figure 1 presents the flowchart of the study design.

Stimuli

Using mock news stories as treatment messages offers high reliability, validity, and external credibility (Kreps and Roblin, 2019). Our stimuli, modeled after real-world COVID-19 reports, consisted of at least two paragraphs: (1) an introduction on COVID-19 and the death count in spring 2020, advising on preventive actions, and (2) a conclusion of recent developments like testing capacities and contact tracing technologies. We crafted five variants for both paragraphs, presenting participants with a random combination. Social identity cues (stigmatizing outgroup: present vs. absent) were manipulated by varying the term referring to the pandemic and the accompanying image. In the stigmatizing cue condition, the “Chinese virus” term was used, paired by a photo of an Asian individual wearing a mask. In non-stigmatizing-cue condition, “coronavirus” was the term of choice, accompanied by a photo of black, Hispanic, or white subjects, chosen at random from an larger portrait collection.

Testimonials, detailing the patients’ and their family members’ personal experiences with COVID-19, were placed between the leading and concluding paragraphs. In the no testimonial condition, participants only saw the two main sections. The two testimonial conditions differed in the names of testimonial sources and referenced places to indicate group status (testimonials by Americans vs. Chinese), with all other content being consistent. We designed five distinct testimonials per condition from actual COVID-19 reports. Those in the treatment conditions received one of these versions randomly. The use of multiple stimuli messages per condition can mitigate the case-category confounding (Slater et al., 2015). Supplemental Materials Section 1 showcases example mock-up articles.

Alongside the news story, participants were also assigned to one of three comment conditions, mirroring real social media comment sections for external validity. In the no-comment condition, no comments were provided. In the pro- and anti-xenophobia conditions, participants viewed 10 comments with varying stances. In the predominantly pro-xenophobia condition, a majority of comments (6–9 out of 10) supported discrimination against Chinese, with the rest opposing it. The ratios flipped in the predominantly anti-discrimination condition. Comments, sourced from a broader 100-comment pool, and their display order, were randomized to offer participants a varied experience and reduce case-category confounding. We avoided a unanimous stance, considering its real-world scarcity (Liu and Shi, 2019; Shi et al., 2014). Comment stimuli, derived from real COVID-19 social media posts, were presented as tweets with the user information blurred. Full treatment messages are in Supplemental Materials Section 4.

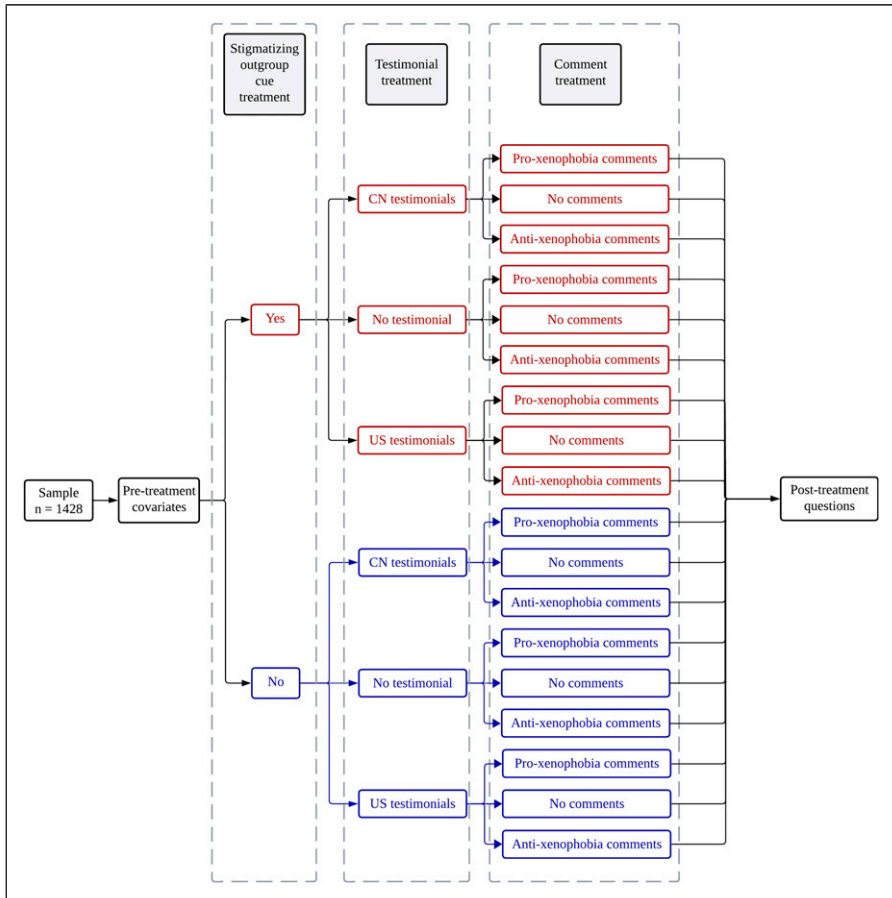


Figure 1. Flow chart of the study design.

Measurements and statistical analyses

Feeling thermometer. This study honed in on the affective dimension of outcomes stemming from perceived threat, particularly, American participants' adverse feelings towards Chinese individuals and immigrants (Stephan et al., 2009). Affective responses, preceding prejudiced thoughts and intergroup strife (Sears and Henry, 2003), remain understudied but are sensitive to contexts like news exposure (Atwell Seate and Mastro, 2016). They can offer early indications of impending biased actions (Talaska et al., 2008). We employed the feeling thermometer measures (Nelson, 2008), asking participants their sentiments toward (a) Chinese individuals and (b) Chinese immigrants in the U.S. on a scale ranging from -50 (*Extremely cold*) to 50 (*Extremely warm*). Responses were averaged given their strong correlation (Pearson's $r = 0.78$, $M = 13.88$, $SD = 20.72$).

Covariates. We also measured national identity, trait empathy, and demographics including age, gender, race, and education level. General national pride ($M = 4.73$, $SD = 1.31$, $\alpha = 0.83$) was measured using questions adapted from Smith (2009) on a scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). An example item is “I would rather be a citizen of the U.S. than of any other country in the world.” Trait empathy ($M = 5.32$, $SD = 1.00$, $\alpha = 0.82$), measured by the scale developed by Davis (1983) in a 7-point scale from 1 (*Clearly does not describe me*) to 7 (*Clearly describes me*), included items like, “I often have tender, concerned feelings for people less fortunate than me.”

Statistical analyses. We started with a multiple linear regression using robust standard errors to assess the main effects of the experimental factors ($H1-2$ and $RQ1$). Subsequently, the two-way interaction effects between group cues, testimonial types, and comments were analyzed separately in three models ($H3$ and $H4a-4b$) for easier interpretation. We also ran a three-way interaction model crossing all three factors and the results can be found in the Supplementary Materials (Table S1). All models included measured covariates to improve estimation precision.

Results

Testimonials and group cues: main and interaction effects

Results for $H1-H4$ and $RQ1$ are summarized in Table 1. Firstly, the use of outgroup cues alone did not significantly change Americans’ feelings toward Chinese individuals. Ingroup testimonials depicting Americans’ suffering also had no main effects. $H1$ and $H2$ were not supported. However, our findings indicated that testimonials highlighting the outgroup’s suffering fostered positive feelings toward the outgroup, consistent with previous literature on infectious disease. As presented in Model 1 in Table 1, compared to no testimonial control, exposure to testimonials portraying the suffering of Chinese people warmed feelings toward Chinese people and immigrants ($b = 2.53$, 95% CI [0.13, 4.94], $p = .039$).

Before reporting the two-way interactions, we first explored the potential three-way interaction between stigmatizing outgroup cues, testimonial conditions, and comment conditions. The results were non-significant (see Table S1 in the Supplementary Materials for more details).

Moreover, we found significant interaction effects between stigmatizing outgroup cues and ingroup suffering. As shown in Table 1, the negative coefficient for the interaction term (Model 2, $b = -6.03$, 95% CI [-11.14, -0.92], $p = .021$) suggest that compared to no testimonials, deploying testimonials of Americans’ suffering simultaneously with outgroup cues (vs ingroup cues) induced colder feelings toward Chinese, hence supporting $H3$.

Figure 2 illustrates the effects of ingroup/outgroup testimonials conditioned on the presence of stigmatizing outgroup cues, as detailed in Model 2, Table 1. The 84% CIs in the figure show conditional testimonial effects (vs no testimonial) on sentiments towards Chinese individuals. These bars represent between-group contrasts. According to

Table 1. Main effects and interaction effects of stigmatizing outgroup cues, testimonials, and comments on feeling towards Chinese people and immigrants.

	Dependent variable: Feeling thermometer towards Chinese people and immigrants		
	Model 1	Model 2	Model 3
Group cues in the news message			
Outgroup cues	-0.10 (-2.12, 1.92)	3.06 (-0.54, 6.66)	-0.11 (-2.12, 1.91)
Testimonials in the news message			
Chinese testimonials	2.53* (0.13, 4.94)	4.36* (0.84, 7.87)	2.33 (-1.69, 6.36)
US testimonials	1.18 (-1.38, 3.74)	4.18* (0.60, 7.75)	-0.27 (-4.58, 4.04)
User-generated comments			
Anti-xenophobia	1.23 (-1.24, 3.69)	1.22 (-1.25, 3.69)	-0.94 (-5.42, 3.54)
Pro-xenophobia	-1.09 (-3.57, 1.38)	-1.15 (-3.62, 1.32)	-0.68 (-4.98, 3.61)
Outgroup cues with testimonial conditions: interaction effects			
Outgroup cues × Chinese testimonials		-3.64 (-8.47, 1.20)	
Outgroup cues × US testimonials		-6.03* (-11.14, -0.92)	
Testimonials with user generated comments conditions: interaction effects			
Chinese testimonials × anti-xenophobia			0.21 (-5.73, 6.14)
US testimonials × anti-xenophobia			6.95* (0.70, 13.20)
Chinese testimonials × pro-xenophobia			0.80 (-5.04, 6.64)
US testimonials × pro-xenophobia			-1.97 (-8.12, 4.19)
Constant	-8.33* (-16.56, -0.11)	-10.03* (-18.48, -1.57)	-7.72 (-16.15, 0.71)

Notes. * $p < .05$; ** $p < .01$; *** $p < .001$.

In each model, the reference groups were the no outgroup cues, no testimonials, and no comments conditions, respectively. Models were estimated using robust standard errors. Covariates (national pride, trait empathy, age, gender, race, and educational levels) were included in all the models to increase estimation efficiency but omitted to simplify presentation.

Maghsoodloo and Huang (2010), non-overlapping 84% CIs can be interpreted to indicate a significant difference between conditional main effects. Here, overlapping CIs for Chinese testimonials indicated no significant moderation by stigmatizing cues. However, testimonials of Americans' suffering elicited more negative feelings with stigmatizing cues, evident from the disjoining CIs.

Moderation effects of comments

As shown in Model 1 of Table 1, neither the predominantly anti- nor pro-xenophobia comments significantly shifted feelings toward Chinese people and immigrants compared to the no-comment control. However, Model 3, Table 1, shows that exposure to predominantly anti-xenophobia comments moderated the impact of testimonials detailing Americans' suffering in the direction of inducing more positive feelings towards Chinese (interaction term: $b = 6.95$, 95% CI [0.70, 13.20], $p = .029$). Figure 3 displays the interaction between comment and testimonial conditions. Each 84% CI illustrates the causal effect of a specific testimonial type (vs no testimonial), with different comments conditions. The Chinese testimonials' effects were consistent across comment conditions. However, U.S. testimonials paired with predominantly anti-xenophobic comments

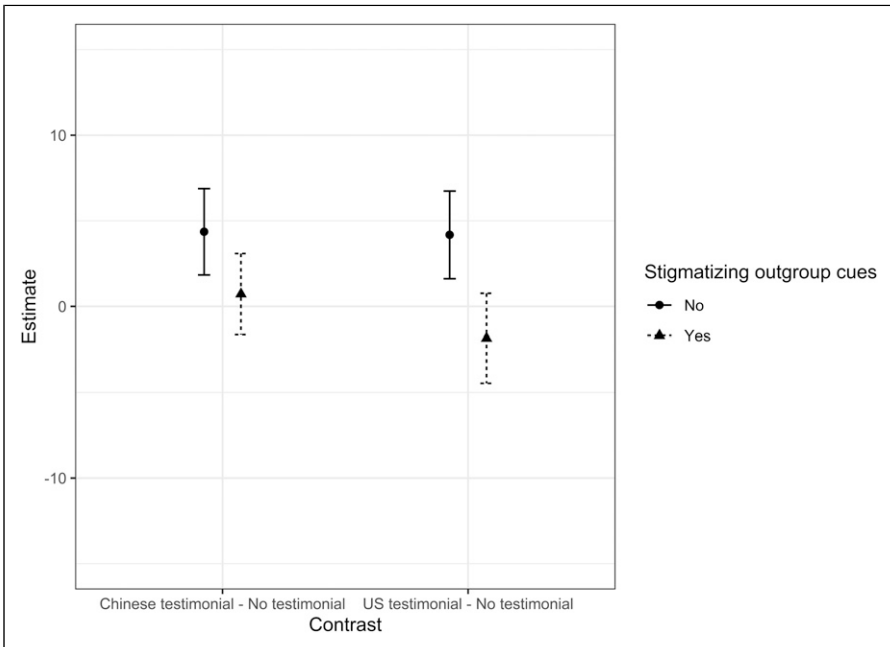


Figure 2. Effects of testimonials on feeling thermometer as moderated by stigmatizing group cues. Notes: Error bars represent 84% CIs of between-condition contrasts (for the statistical rationale, see Maghsoodloo and Huang, 2010), conditioned by the presence of stigmatizing outgroup cues.

yielded the warmest feelings towards Chinese people and immigrants, evident from the non-overlapping CIs.

Discussion

Racism and discrimination against people of Asian descent, particularly those of Chinese origin, have been longstanding issues in the U.S., and the COVID-19 pandemic has unfortunately exacerbated anti-Asia hate, including Sinophobia (Ziems et al., 2020). Our findings experimentally demonstrated the influences of certain journalistic practices in fueling anti-Chinese sentiment among Americans, emphasizing the need for news media accountability and contributing to our understanding of the roles of news media in potentially exacerbating intergroup tensions during public health crises (Finset et al., 2020). In this study, we systematically varied two commonly used news coverage strategies during the early days of the COVID-19 pandemic—the use of patient testimonials and the presence of stigmatizing outgroup cues—along with either predominantly pro- or anti-xenophobia reader-contributed comments. We found that these two journalistic practices, when combined in a news story, reinforced each other in fueling Sinophobic sentiment. On a positive note, when comment sections predominantly feature

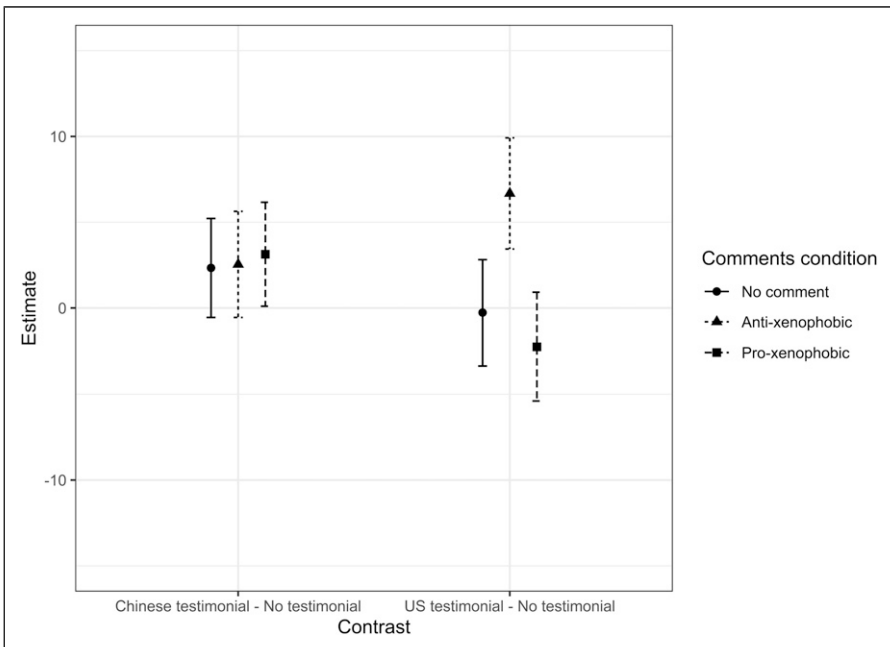


Figure 3. Effects of testimonials on feeling thermometer as moderated by user-generated comments. Notes: Error bars represent 84% CIs of between-condition contrasts (for the statistical rationale, see Maghsoodloo and Huang, 2010), conditioned by the presence of stigmatizing outgroup cues.

voices denouncing xenophobia, their pairing with U.S. testimonials induced more positive feelings toward Chinese than no comments or predominantly pro-xenophobia comments. This underscores the important role that participatory audiences play in shaping the social impacts of public health news coverage in today's media landscape. We discuss the theoretical and practical implications of our results below.

During public health emergencies such as the COVID-19 pandemic, journalists are expected to provide timely, credible, and accurate health information to counteract information scarcity. Ideally, news coverage of public health crises should adhere to best practices in health and risk communication, such as critically evaluating available information, identifying credible sources with expertise, and providing adequate frames to facilitate public understanding of the evolving crisis (Klemm et al., 2019). These normative standards call for closer scrutiny of the actual impacts of public health news coverage (e.g., Anwar et al., 2020; Sweet et al., 2020). Moreover, given that intergroup tension typically escalates rapidly during an outbreak of contagious disease (Muzzatti, 2005), it is crucial to study whether pandemic news coverage helps mend the ruptured social fabric or further tears it apart. Our study emphasizes the need to empirically evaluate the impacts of public health news coverage: journalists and news organizations need to be mindful of potential undesirable outcomes of journalistic practices that conflict with public interests.

Theoretically, our factorial experiment, manipulating stigmatizing outgroup cues and patient testimonials within news, offers insights into the conditions that can turn perceived outgroup threat into animosity (Stephan et al., 2009). Unlike Dhanani and Franz (2021), who found no interaction effects between outgroup attribution and threat information, our data indicates that when threat information was delivered using vivid ingroup patient testimonials (e.g., American patients) about personal suffering, such testimonials and stigmatizing outgroup cues would then reinforce each other to amplify Sinophobic sentiment. This effect was not observed with outgroup testimonials, emphasizing the power of news featuring both ingroup suffering and stigmatizing outgroup cues in fostering intergroup antagonism. The combined effect of these components seems crucial, as we detected no standalone effects. It is important to note that our stimuli were taken from centrist media, suggesting the possibility of observing more pronounced patterns in strongly partisan outlets supporting the "blame COVID-19 on China" narrative. Future studies are encouraged to explore partisan news coverage that heighten anti-Chinese and, more broadly, anti-Asian sentiments in the U.S.

Our findings also support the point made by Allen et al. (2014) that interactive media provide the affordances to offset the negative social impacts resulting from certain journalistic practices. Our findings show that online comments significantly moderated the effects of testimonials portraying Americans' suffering. Compared to being paired with no comments or predominantly pro-xenophobic comment environments, such testimonials, when accompanied by predominantly anti-xenophobia comments, tend to induce more positive sentiments towards Chinese. These findings align with the result of Liu and McLeod (2019), where comments challenging the news frame undermined the influence of the news article on readers' issue positions. Given that audience online discursive participation can alter news impact, future research should investigate what

factors and mechanisms might encourage pro-social commenting during health crises, especially those in the direction of safeguarding democratic values (e.g., denouncing xenophobia) and improving public health outcomes (e.g., sharing reasons to comply with public health guidelines). It should be noted that interactive media also bring the possibility of trolling, uncivil language, and other toxic forms of discursive participation, which pose challenges for news organizations (Wintterlin et al., 2020). Future studies should seek to pinpoint strategies enabling journalists to maintain democratic and professional standards with an engaged online audience (Wolfgang et al., 2020).

Our study, conducted during the early phase of the COVID-19 pandemic, focused primarily on how Americans perceived Chinese people and immigrants. However, xenophobia during this period was not limited to the U.S. Many countries faced their own xenophobic backlashes against various ethnic or national groups, as pandemics tend to exacerbate deep seated prejudices against “outgroups.” While our study focuses on the American context, the mechanisms we uncovered—the dynamic between ingroup testimonials, stigmatizing outgroup cues, and an active online audience—underscore the joint impacts of both responsible journalism and an active audience in safeguarding social solidarity during public health crises.

This study has several limitations. First, we did not examine the direct impacts of journalistic practices and online comments on discriminatory actions, but instead studied the affective antecedents to prejudicial behavior. This was driven by our intent to identify early warnings of worrisome, though perhaps inadvertent, consequences of news coverage during the initial phase of COVID-19. Future research should adopt a longitudinal design to track behavioral outcomes. Second, we did not explore the psychological mechanisms underlying the unique moderation effects of anti-xenophobia comments, though we hypothesize one possibility is such comments’ alignment with social norms that value equity and condemn discrimination. We encourage future studies to test this hypothesis and identify other mechanisms. While our focus was Sinophobia, prompted by rising anti-Asian sentiments during COVID-19 and U.S.-China tensions, previous research has highlighted xenophobia in earlier health crises (Reny and Barreto, 2022; Ziems et al., 2020). Our findings, therefore, are likely to generalize beyond COVID-19 and Sinophobia, underscoring the need to assess the combined effects of journalism and online commentary to better prepare for future health crises.

Conclusion

Utilizing a factorial between-subject design, our study independently varied the presence of stigmatizing outgroup cues, the use of ingroup versus outgroup testimonials, and the inclusion of predominantly pro-versus anti-xenophobia comments responding to news stories about the COVID-19 pandemic. Our findings show that stigmatizing outgroup cues amplified the effects of ingroup testimonials (i.e., those describing the suffering of American patients), thereby fueling “colder” feelings towards Chinese people and immigrants. However, comments predominantly denouncing xenophobia were found to moderate the effects of ingroup testimonials in the direction of inducing more positive pro-Chinese sentiments. Given the crucial role of health news coverage during public

health emergencies, our results underscore the need for empirical evaluation of the impacts of journalistic practices in health news. Such analysis should extend beyond health-related behaviors to consider implications for intergroup relationships and social solidarity. Importantly, our study highlights the potential of an active audience's discursive participation in mitigating the harmful impacts of certain pandemic news coverage. This points to a promising line of research examining the predictors and consequences of participatory news consumption during public health crises.

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Supplemental Material

Supplemental material for this article is available online.

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