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Highlighting COVID-19 racial disparities can reduce support for safety precautions among White U.S. residents[☆]

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ABSTRACT

U.S. media has extensively covered racial disparities in COVID-19 infections and deaths, which may ironically reduce public concern about COVID-19. In two preregistered studies (conducted in the fall of 2020), we examined whether perceptions of COVID-19 racial disparities predict White U.S. residents' attitudes toward COVID-19. Utilizing a correlational design ($N = 498$), we found that those who perceived COVID-19 racial disparities to be greater reported reduced fear of COVID-19, which predicted reduced support for COVID-19 safety precautions. In Study 2, we manipulated exposure to information about COVID-19 racial disparities ($N = 1,505$). Reading about the persistent inequalities that produced COVID-19 racial disparities reduced fear of COVID-19, empathy for those vulnerable to COVID-19, and support for safety precautions. These findings suggest that publicizing racial health disparities has the potential to create a vicious cycle wherein raising awareness reduces support for the very policies that could protect public health and reduce disparities.

During oral debates over the legality of Wisconsin's shelter-in-place order in May 2020, Governor Evers cited the 1,200% increase in COVID-19 cases within two weeks in one county. Wisconsin Supreme Court Chief Justice Roggensack interjected, arguing that the increase was isolated to the meatpacking plant and that it was not "just regular folks" (Flynn, 2020). Thus, the Chief Justice dismissed the outbreak among meatpacking plant workers (who are predominantly people of color) as irrelevant to the debate. U.S. media began reporting on the dramatic racial disparities in COVID-19 infection and mortality rates—resulting from structural inequalities, persistent racial health disparities, and overrepresentation of people of color among essential workers—in April of 2020 (Akhtar, 2020; APM Research Lab Staff, 2021; Hawkins, 2020; Jewett, 2020; National Academies of Sciences, Engineering, & Medicine, 2017; Nguyen et al., 2020). Publicizing these racial disparities has the potential to establish cognitive associations between COVID-19 and people of color, which, from a social psychological perspective, could have unintended consequences. The current work aimed to examine how White U.S. residents' perceptions of COVID-19 racial disparities relate to their fear of COVID-19 and support for COVID-19 safety precautions. We propose that describing COVID-19 as disproportionately impacting people of color may lessen White U.S. residents' concerns

about COVID-19.

Race is central to U.S. social organization, wherein society affords the most power, privilege, and status to people who are categorized as White (Roberts and Rizzo, 2020; Skinner-Dorkenoo et al., 2021). Socialization in this context encodes associations between status and race, such that individuals become accustomed to thinking and behaving in ways that reinforce the hierarchy (Roberts and Rizzo, 2020). Both children and adults show the tendency to reinforce the status quo, believing that the way things are is how they should be (Roberts et al., 2017a, 2017b, 2018), but this inclination seems to be particularly prevalent among members of high status groups (Rizzo and Killen, 2020). As such, U.S. residents—especially those who are White—may be less concerned about social issues (e.g., police violence, environmental contaminants, health conditions) that predominantly impact people of color because this is how they expect things to be. Thus, despite the fact that White people make up the majority of COVID-19 deaths in the U.S. (Gold et al., 2020), perceptions that the COVID-19 pandemic disproportionately impacts people of color could reduce public concern about the virus. Next, we consider other psychological processes that may shape White U.S. residents' perceptions of COVID-19 when confronted with information about COVID-19 racial disparities.

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1. Social comparisons and construal level theory

Although the elevated rates of COVID-19 infection and mortality among people of color in the U.S. do not objectively reduce the risks of infection among White people, they may reduce perceptions of risk by serving as a source of downward comparison. When people compare themselves to others who are less well off (downward comparison), they tend to feel more satisfied with their current situation (Rheu et al., 2021; Suls et al., 2002). When confronted with threatening health concerns, people often spontaneously engage in downward comparisons as a means of coping (Wood et al., 1985), which has been shown to reduce engagement in health protective behaviors (Mahler et al., 2010). Therefore, news stories about COVID-19 racial disparities may facilitate downward comparison among White U.S. residents, reducing the perceived threat of the virus and endorsement of safety precautions.

Awareness of COVID-19 racial disparities could also influence how psychologically distant White U.S. residents feel from COVID-19. According to construal level theory, when people and things are more psychologically distant from us socially, in time, or in space, they seem more abstract and less concerning (Trope and Liberman, 2010). For example, framing climate change as a diffuse threat (to the entire world) rather than a proximal threat (to one's local community) reduces support for climate change mitigation policies (Brügger et al., 2016). Threats can also seem more psychologically distant when they impact others who are less familiar, or more distinct from one's own group (e.g., in culture, race, language, religion). For instance, Dutch Twitter posts were more likely to mention fear of Ebola in reference to outbreaks among socially closer populations in North America, versus socially distant populations in West Africa (van Lent et al., 2017). Data obtained from both laboratory and field experiments show that when threats appear more distant, they elicit less concern and support for action (Ahn, 2015; Brügger et al., 2016; Kim and Kim, 2018; Trope and Liberman, 2010; van Lent et al., 2017). Thus, given persistent social and residential segregation in the U.S. (Lichter et al., 2016), associating COVID-19 with people of color could make COVID-19 seem more distant from White U.S. residents, therefore, reducing concern about the virus and support for government mitigation policies (e.g., mask mandates).

When groups seem relatively distant, people also tend to be less attuned to their suffering and feel less empathy for them (Cikara et al., 2011; Gutsell et al., 2012; Mathur et al., 2010; Seger et al., 2009; Thornton et al., 2019). In general, people tend to have less empathy for members of social groups that they do not belong to, which is thought to contribute to intergroup conflicts around the world (Batson and Ahmad, 2009). For instance, people show a dampened neural response when viewing racial outgroup (vs. ingroup) members in pain (Mathur et al., 2010), and White adults (and children) in the U.S. generally believe that Black people feel less pain than White people (e.g., Dore et al., 2014; Hoffman and Trawalter, 2016; Mathur et al., 2014; Trawalter et al., 2012; Waytz et al., 2015).

Taken together, evidence from several psychological theories converges to suggest that news about COVID-19 racial disparities could decrease fear of COVID-19, reduce empathy for those who are most vulnerable, and dampen support for COVID-19 safety precautions among White U.S. residents. Indeed, evidence has already begun to emerge indicating that among those with anti-Black racial biases, information about COVID-19 racial disparities reduces concern about COVID-19 and support for safety precautions (Harell and Lieberman, 2021; Stephens-Dougan, 2022).

2. Systemic knowledge

Yet, information about COVID-19 racial disparities may not have the same effect for all White U.S. residents. Prior research has shown that U.S. residents who are more knowledgeable about past racial injustices tend to be more aware of and concerned about systemic inequalities and racism in the present (Bonam et al., 2019; Nelson et al., 2012). These

findings suggest that White U.S. residents who are more knowledgeable about the systemic and structural inequalities that led people of color to be harder hit by COVID-19 may also be more concerned about COVID-19 racial disparities. This line of thinking suggests that systemic knowledge of contributors to COVID-19 racial disparities would be associated with greater concern about COVID-19 and increased support for safety precautions.

2.1. The current research

Across two studies, we tested whether White U.S. residents' perceptions of and exposure to information about COVID-19 racial disparities in the U.S. predict fear of COVID-19 and support for COVID-19 safety precautions. In Study 1 our preregistered hypothesis was that perceiving COVID-19 racial disparities to be greater would be associated with reduced fear of COVID-19 and support for COVID-19 safety precautions. In Study 2 our preregistered hypothesis was that exposure to information about COVID-19 racial disparities would reduce fear of COVID-19 and support for COVID-19 safety precautions. We included an exploratory measure of empathic concern in Study 2, as past research shows that empathy is particularly relevant in predicting willingness to make personal sacrifices for the good of others (Batson et al., 2015). Data collected from several Western countries has provided evidence that empathic concern is predictive of motivation to adhere to COVID-19 safety recommendations (Pfattheicher et al., 2020). In both studies, we accounted for knowledge of systemic contributors to COVID-19 racial disparities—which was anticipated to predict increased fear of COVID-19 and support for safety precautions. We also report exploratory analyses for both studies that include political orientation as a statistical control. In addition to this, we also assessed and preregistered hypotheses related to associations between perceived COVID-19 racial disparities and racial biases and social distancing. Although our hypotheses were generally supported (see supplemental materials), similar findings have already been reported elsewhere (see Lu et al., 2021) and, given the space constraints and scope of the journal, we do not report them here. Both studies were approved by the University of Georgia IRB and complied with all ethical regulations.

2.1.1. Study 1

In Study 1, we assessed White U.S. residents' (a) perceptions of COVID-19 racial disparities, (b) systemic knowledge of contributors to COVID-19 racial disparities, (c) fear of COVID-19, and (d) support for COVID-19 safety precautions. We predicted that among White U.S. residents, perceiving COVID-19 racial disparities to be greater would be associated with reduced fear of COVID-19 and decreased support for COVID-19 safety precautions. We also tested an exploratory mediation model to examine whether fear of COVID-19 statistically mediated the relation between perceptions of COVID-19 racial disparities and support for COVID-19 safety precautions.

3. Method

3.1. Participants

We recruited 500 participants based on a G*Power analysis indicating that a sample of 496 was needed to detect a small effect size (linear regression, $f^2 = 0.02$) with 80% power. English-speaking, White U.S. adults (18 years or older) were recruited from MTurk between September 5th and 8th, 2020 in exchange for \$2.50. After excluding participants who failed more than one of our four data quality checks ($n = 2$; see Open Science Framework, OSF), our final sample of 498 participants (from 48 different states; $M_{\text{age}} = 40.56$, $SD_{\text{age}} = 12.08$) consisted of 58% men and 41% women (three non-binary participants) with a median income of \$40,000 to \$49,999.

3.2. Procedures

Participants accessed the study online and provided informed consent before answering two data quality check questions (used to screen for bots and people who were not reading the questions). Next, participants reported their perceptions of racial disparities in COVID-19 and their systemic knowledge of contributors to COVID-19 racial disparities. Participants were then presented with the following set of measures in a randomized order: fear of COVID-19, support for COVID-19 safety precautions, intentions to socially avoid people of different races, and racial attitudes. Before being debriefed, participants responded to demographic questions and two additional data quality measures. See [Open Science Framework](#) for full materials (including exploratory measures of colorblindness, news consumption, and behavioral changes in response to COVID-19), data, and statistical syntax.

3.3. Measures

Perceived COVID-19 Racial Disparities. Using a scale ranging from 1 (*the impact on White people is worse than the impact on people of color*) to 7 (*the impact on people of color is worse than the impact on White people*), participants reported their perceptions of the impact of COVID-19 with respect to “COVID-19 infection rates” and “COVID-19 related deaths” ($r = 0.67$). The two items were averaged to create a composite measure of perceived racial disparities.

Systemic Knowledge. Using a six-item measure ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), participants indicated their agreement with true statements about the systemic and structural contributors to COVID-19 racial disparities. Items included: “Longstanding racial health disparities in the U.S. have led people of color to be harder hit by COVID-19;” “Relative to White people in the U.S. people of color are disproportionately employed as ‘essential workers’—increasing their risk of exposure to COVID-19;” “As a result of structural inequalities, people of color in the U.S. are more likely to become infected with COVID-19;” “Relative to White people in the U.S. people of color tend to have more limited access to quality healthcare, increasing the impact of COVID-19 on people of color;” “People of color in the U.S. are less likely to have access to drive-through testing services (relative to White people), which increases the spread of COVID-19 among people of color;” and “People of color are less likely to have access to protective gear (masks, gloves, hand sanitizers) than White people in the U.S. increasing the likelihood of spreading COVID-19 among people of color.” Responses to these six items were averaged ($\alpha = 0.93$) to create a composite measure of knowledge of the systemic and structural contributors to COVID-19 racial disparities.

Fear of Contracting COVID-19. Using [Ahorsu and colleagues’ \(2020\)](#) seven-item measure, participants indicated their fear of contracting COVID-19 (e.g., “I cannot sleep because I am worrying about getting COVID-19”) on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*). To assess participants’ fear of friends and relatives contracting COVID-19, we added the following two-items adapted from Ahorsu and colleagues’ scale: “I am afraid of family members or friends losing their lives because of COVID-19” and “My heart races or palpitates when I think about family and friends getting COVID-19.” We averaged the seven items from the original scale ($\alpha = 0.92$) and the two additional items ($r = 0.57$) separately to create two composite scores indexing fear for oneself and fear for loved ones.

Support for COVID-19 Safety Precautions. Endorsement of COVID-19 precautions was measured using two sets of items designed to capture support for (a) government-issued safety measures and (b) the adoption of safety precautions by the public. The first set of items measured participants’ support (1 = *completely unsupportive* to 5 = *completely supportive*) for the following public health policies: “limiting the maximum capacity of public spaces,” “public mask requirements,” “international travel restrictions,” “closing non-essential businesses,” and “stay at home order” ($\alpha = 0.90$). The second set of items assessed

participants’ level of personal agreement (1 = *strongly disagree* to 5 = *strongly agree*) that the U.S. public should abide by the following public health recommendations: “social distancing (staying 6 feet away from other people),” “wearing masks in public spaces,” “avoiding non-essential travel,” “avoiding large/crowded public gatherings,” and “staying at home/avoiding public spaces” ($\alpha = 0.93$).

4. Results

Those who are knowledgeable about the systemic causes of COVID-19 racial disparities could be expected to show greater concern about COVID-19 and increased support for safety precautions, but they are necessarily aware of COVID-19 racial disparities themselves. This means that by including knowledge of the systemic causes of COVID-19 racial disparities in our models, we are able to estimate the association between perceptions of COVID-19 disparities and concern about COVID-19 (e.g., fear, support for safety precautions) that is unrelated to knowledge of systemic causes of disparities. Bivariate correlations between all variables and results without systemic knowledge included as a covariate (which looked markedly different) are reported in the Supplemental Materials.

4.1. Fear of COVID-19

A multivariate analysis was used to examine the association between the two independent variables (perceived COVID-19 racial disparities and systemic knowledge) and fear of COVID-19 (for self and for loved ones). As predicted, those who perceived COVID-19 racial disparities to be greater reported reduced fear of COVID-19 ($b = -0.22$, $SE = 0.07$, 95% CI $[-0.36, -0.08]$, $\beta = -0.25$, $t(991) = -3.06$, $p = .002$). In contrast, greater systemic knowledge predicted *increased* fear of COVID-19 ($b = 0.28$, $SE = 0.04$, 95% CI $[0.21, 0.35]$, $\beta = 0.44$, $t(495) = 7.62$, $p < .001$).

When political orientation (a composite measure of social and economic conservatism) was added to the model, perceiving COVID-19 racial disparities to be greater still predicted reduced fear of COVID-19 ($p = .002$). Increased conservatism predicted reduced fear of COVID-19 ($B = -0.10$, $SE = 0.03$), $t(494) = -3.22$, $p = .001$.

4.2. Support for COVID-19 safety precautions

We used a multivariate analysis to test the association between the two independent variables and support for COVID-19 safety precautions (government-issued safety measures and adoption of safety precautions by the public). Individual differences in perceived COVID-19 racial disparities did not predict support for COVID-19 safety precautions ($p = .410$). However, greater systemic knowledge predicted increased support for COVID-19 safety precautions ($b = 0.30$, $SE = 0.03$, 95% CI $[0.24, 0.36]$, $\beta = 0.47$), $t(495) = 9.84$, $p < .001$.

When political orientation was added to the model, perceptions of COVID-19 racial disparities still did not predict support for COVID-19 safety precautions ($p = .239$). Increased conservatism predicted reduced support for COVID-19 safety precautions ($B = -0.23$, $SE = 0.02$), $t(494) = -9.86$, $p < .001$.

4.3. Exploratory mediation analysis

We speculated that perceiving COVID-19 racial disparities to be greater may only reduce support for safety precautions if it leads to a reduction in fear of COVID-19. To test this, we standardized our variables ($M = 0$, $SD = 1$) and conducted an exploratory mediation analysis using the PROCESS MACRO (model 4; [Hayes, 2017](#)) for SAS. Results from 10,000 bootstrap samples (bias corrected, statistically controlling for systemic knowledge) indicated that fear of COVID-19 predicted increased support for safety precautions, $b = 0.32$ ($SE = 0.03$), 95% CI $[0.26, 0.39]$, $t(495) = 9.52$, $p < .001$. The indirect effect was -0.05

(bootstrap $SE = 0.02$), bootstrap 95% CI $[-0.08, -0.02]$. The confidence interval did not contain zero, indicating that fear of COVID-19 statistically mediated the effect of perceived COVID-19 racial disparities on support for safety precautions (see Fig. 1).

5. Discussion

Study 1 provided initial support for our preregistered hypotheses. We found that White U.S. residents who perceived there to be greater racial disparities in COVID-19 were less fearful of COVID-19. In addition, an exploratory mediation analysis indicated that this reduced fear of COVID-19 may decrease support for safety precautions. Thus, these findings suggest that publicizing racial disparities in COVID-19 could possibly lead the public to be less supportive of safety measures that could limit the spread of COVID-19. In contrast, systemic knowledge of contributors to COVID-19 racial disparities predicted increased fear and support for COVID-19 safety precautions—such that greater systemic knowledge seemed to reflect increased awareness and concern about systemic inequalities and racism.

5.1. Study 2

In Study 2, we used a between-subjects design to manipulate exposure to information about COVID-19 racial disparities among White U.S. residents. Given known tendencies for people to perceive the status quo as just (Kay et al., 2009) and recent evidence of racist interpretations of COVID-19 racial disparities in the U.S. (Crist and Schlegel, 2021; Perry et al., 2021)—indicating that they are a result of biological susceptibility or irresponsible behavior—we chose to test the effect of two slightly different messages about racial disparities in COVID-19. One message framed COVID-19 racial disparities as a product of persistent health inequalities (providing an explanation for COVID-19 racial disparities) whereas the other did not provide any explanations for COVID-19 racial disparities. Communications scholars have highlighted the potential benefits of framing racial health disparities in terms of structural contributors (Niederdeppe et al., 2008). Thus, given that systemic knowledge of the contributors to COVID-19 racial disparities was associated with more fear of COVID-19 and support for safety precautions in Study 1, we reasoned that framing COVID-19 racial disparities as a product of persistent health inequalities could alter the impact of exposure to information about COVID-19 racial disparities. We also included an exploratory measure of empathy for those vulnerable to COVID-19, as this has previously been found to predict motivation to adhere to COVID-19 safety recommendations (Pfattheicher et al., 2020). In addition, we tested an exploratory mediation model to see if fear of

COVID-19 or empathy for those vulnerable to COVID-19 statistically mediated the relation between experimental conditions and support for COVID-19 safety precautions.

6. Method

6.1. Participants

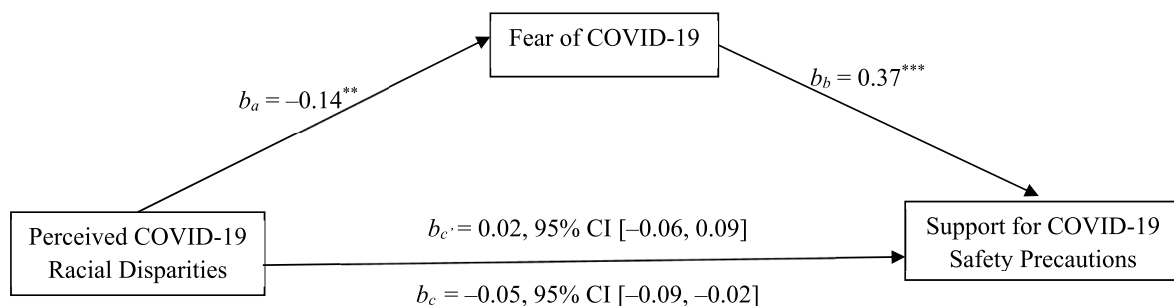
We tripled the Study 1 sample size, which provided sufficient power to reliably detect a small effect size ($f = 0.07$) with 80% power and used the same inclusion criteria and recruitment methods as Study 1 (excluding participants who completed Study 1). A total of 1,515 White U.S. residents completed the study between October 25th, 2020 and November 3rd, 2020 in exchange for \$1.75. After exclusions ($n = 10$), our final sample of 1,505 (representing all 50 states and Washington D. C.; $M_{age} = 41.58$, $SD_{age} = 12.83$) consisted of 46% men and 54% women (7 non-binary participants) with a median income of \$50,000-\$59,999.

6.2. Procedure

After consenting to the study, participants were randomly assigned to read one of three articles about the impact of COVID-19 on the U.S. public, which were based on COVID-19 public health data from the months leading up to data collection (see OSF materials). The articles in both experimental conditions focused on COVID-19 racial disparities, opening with “For months, news reports have emphasized the serious negative impact of COVID-19 on the health of Americans, noting a disproportionate number of infections and deaths in racial and ethnic minority populations.” However, only one of them framed racial disparities as a product of persistent health inequalities, stating that: “Prior to the spread of the virus, research had shown that persisting racial inequalities contributed to disparities in health care services. These inequalities translated into reduced access to appropriate health care services, greater incidences of chronic illnesses, and heightened distrust of the healthcare system and related institutions among racial minority populations in the U.S. Federal data suggests that existing racial disparities have exacerbated the spread of COVID-19 among racial minority groups in the U.S.” In the control condition, the article made no mention of racial disparities, instead focusing on infections in the general U.S. population. All measured variables were identical to Study 1, with the addition of an exploratory measure of empathy for those most vulnerable to COVID-19.

6.3. Measures

All scales showed similar levels of internal consistency to Study 1



Note. b_c is the indirect effect of X on Y and b_c' is the direct effect of X on Y when the path through the mediator is included in the model, $**p < .01$, $***p < .001$

Fig. 1. Study 1 mediation model for the effect of perceived COVID-19 racial disparities on support for COVID-19 safety precautions through fear of COVID-19. Note. b_c is the indirect effect of X on Y and b_c' is the direct effect of X on Y when the path through the mediator is included in the model, $**p < .01$, $***p < .001$

(see Supplemental Materials for details).

Empathy. We used Pfattheicher and colleagues' (2020) three-item empathy scale ($\alpha = 0.94$) to measure participants' ability to relate to those most vulnerable to COVID-19 (e.g., "I am very concerned about those most vulnerable to coronavirus (COVID-19)") on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

7. Results

Statistical models were parallel to those used in Study 1, but instead of having individual differences in perceived disparities predict our outcomes, experimental condition was included as the key independent variable (see Table 1 and Fig. 2 for results). Participants in both experimental conditions perceived racial disparities in COVID-19 to be greater than participants in the control condition, but only participants in the persistent inequalities condition reported greater systemic knowledge of COVID-19 racial disparities. Surprisingly, only participants in the persistent inequalities condition significantly differed from participants in the control condition on all three outcomes—reporting less fear of COVID-19, empathy for those vulnerable to COVID-19, and support for safety precautions.

When political orientation was included as an interacting statistical covariate in our models, increased conservatism predicted reduced fear of COVID-19 ($B = -0.11$, $SE = 0.02$, $p < .001$), reduced support for COVID-19 safety precautions ($B = -0.18$, $SE = 0.01$, $p < .001$), and reduced empathy for those vulnerable to COVID-19 ($B = -0.11$, $SE = 0.02$, $p < .001$). Experimental condition no longer significantly predicted fear of COVID-19 ($p = .117$) and did not interact with political orientation ($p = .433$). However, experimental condition remained a significant predictor of support for COVID-19 safety precautions ($p < .001$), and there was a marginally significant interaction between political orientation and experimental condition ($p = .053$). Simple slopes analyses indicated that increased conservatism predicted reduced support for COVID-19 safety precautions among those in the control condition ($p < .001$) and among those who received the persistent inequalities framing for racial disparities ($p = .016$). In contrast, among those who just read about COVID-19 racial disparities, political orientation was unrelated to support for COVID-19 safety precautions ($p = .324$). Experimental condition also remained a significant predictor of empathy ($p = .019$) and political orientation did not moderate the effect of experimental condition ($p = .279$).

7.1. Exploratory mediation analysis

We conducted an exploratory mediation analysis to examine whether reduced fear and empathy could statistically explain the effect of priming persistent inequalities on support for COVID-19 safety precautions (see Fig. 2). To do this, we created composite measures of fear

Table 1
Study 2, estimated means and standard errors in each condition.

	Experimental Condition		
	Racial Disparities	Persistent Inequalities	Control
Perceived Racial Disparities	6.13 (0.05) _a	5.98 (0.05) _a	5.56 (0.05) _b
Systemic Knowledge	4.91 (0.07) _{a,b}	5.07 (0.07) _a	4.82 (0.07) _b
Fear	2.77 (0.04) _{a,b}	2.66 (0.04) _a	2.79 (0.04) _b
Safety Precautions	4.15 (0.04) _a	4.05 (0.04) _a	4.29 (0.04) _b
Empathy	5.92 (0.05) _{a,b}	5.77 (0.05) _a	5.88 (0.05) _b

Note. Means in the same row with different subscripts significantly differ ($p < .05$) from one another.

and support for safety precautions (by averaging the two scores that made up each of these measures for the primary multivariate analyses) and standardized all continuous variables. Experimental condition was dummy coded to create two new variables: persistent inequalities (1 = persistent inequalities prime, 0 = not persistent inequalities prime) and COVID-19 racial disparities (1 = racial disparities prime, 0 = not racial disparities prime). Consistent with the aforementioned analyses, the COVID-19 racial disparities dummy code and systemic knowledge measure were included as covariates in the mediation model. Results from 10,000 bootstrap samples (bias corrected) indicated that fear of COVID-19 predicted increased support for safety precautions, $b = 0.31$ ($SE = 0.02$), 95% CI [0.27, 0.36], $t(1501) = 15.18$, $p < .001$. The indirect effect was -0.04 (bootstrap $SE = 0.02$), bootstrap 95% CI [-0.081 , -0.003]. Empathy also predicted increased support for safety precautions, $b = 0.20$ ($SE = 0.02$), 95% CI [0.17, 0.24], $t(1501) = 10.85$, $p < .001$. The indirect effect was -0.03 (bootstrap $SE = 0.01$), bootstrap 95% CI [-0.063 , -0.005]. Thus, both fear of COVID-19 and empathy for those vulnerable statistically mediated the effect of condition on support for safety precautions.

8. Discussion

In Study 2, we replicated the systemic knowledge findings from Study 1 and observed initial evidence that informing White U.S. residents of COVID-19 racial disparities can causally reduce fear of COVID-19 and support for safety precautions. Previous research had shown a similar pattern of results among White U.S. residents who reported relatively high racial biases (Harell and Lieberman, 2021; Stephens-Dougan, 2021), but our findings—which were largely unmoderated by political orientation—suggest a more general phenomenon. We had speculated that framing COVID-19 racial disparities as a product of persistent health inequalities might serve as a buffer against this tendency, consistent with individual differences in systemic knowledge. However, we observed even less concern about COVID-19 when racial disparities were framed as a result of systemic inequalities. In addition, our exploratory mediation analysis provided suggestive evidence that the reduced fear and empathy for those vulnerable to COVID-19 that resulted from framing COVID-19 racial disparities as a product of persistent health inequalities, may have reduced support for safety precautions. Taken together, these findings point to the potential drawbacks of highlighting COVID-19 racial disparities among White U.S. residents.

8.1. General discussion

Our studies examined the association between White U.S. residents' perceptions of COVID-19 racial disparities and their attitudes toward COVID-19. We hypothesized that those who perceived racial disparities in COVID-19 to be greater would be less concerned about COVID-19—as indicated by reduced fear and support for safety precautions. Indeed, both studies provided some evidence of this tendency. In Study 1, we observed that those who perceived COVID-19 racial disparities in the U.S. to be greater were less fearful of COVID-19, and our exploratory mediation was consistent with the notion that this may lead to reduced support for safety precautions. Our experimental manipulation (Study 2) provided evidence that informing White U.S. residents of COVID-19 racial disparities can reduce fear, empathy, and support for COVID-19 safety precautions. We postulated that framing COVID-19 racial disparities as a product of persistent health inequalities could undermine the tendency to justify the status quo (Kay et al., 2009) and help increase concern about COVID-19. However, our findings indicate that this framing further reduced fear and support for safety precautions—perhaps because this information signaled that these disparities were not just transitory epidemiological trends which could potentially shift and disproportionately impact White people in the future. In fact, our exploratory mediation analysis provided suggestive

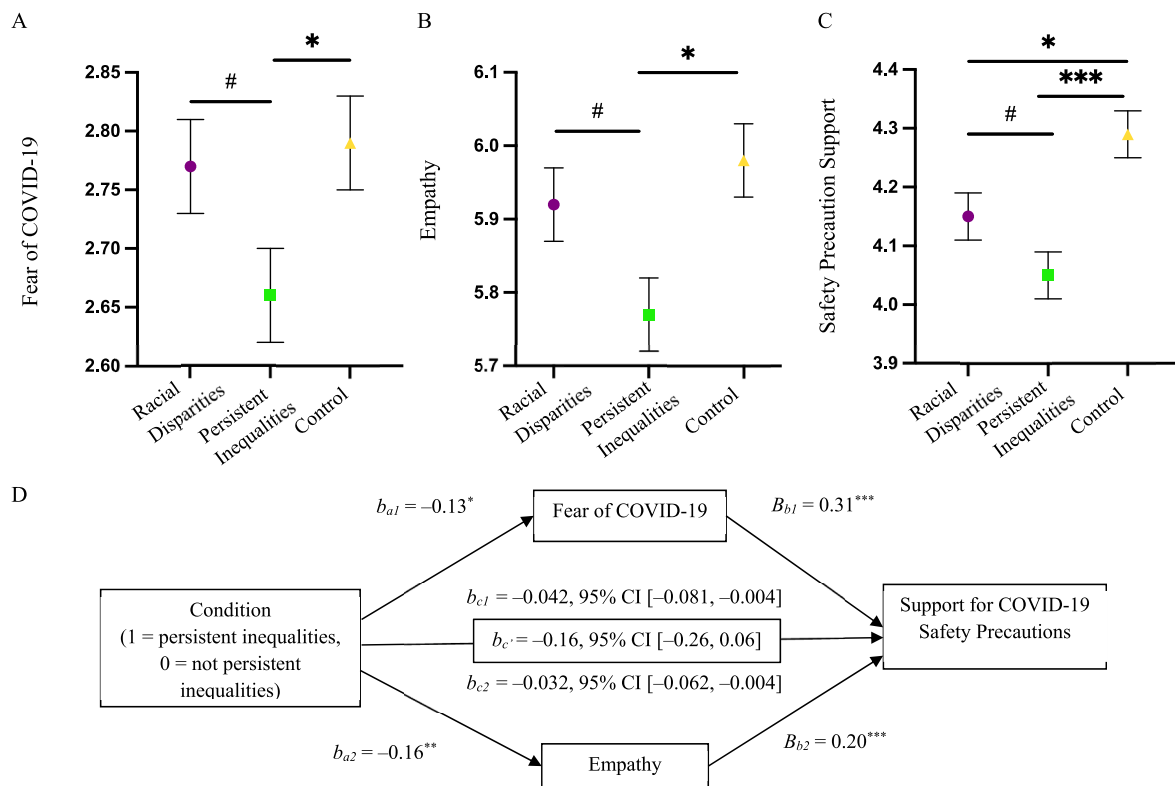


Fig. 2. Study 2, fear of COVID-19 (A), empathy (B), support for safety precautions (C) by condition, and exploratory mediation model (D). Note. Error bars represent standard errors and #: $p < .10$, *: $p < .05$, **: $p < .01$, ***: $p < .001$. The indirect effects of X on Y through the mediators have subscripts to indicate the path through fear (b_{c1}) and empathy (b_{c2}); the direct effect of X on Y when the paths through the mediators are included in the model is represented by b_c .

evidence that both reduced fear of COVID-19 and empathy for those most vulnerable may contribute to the observed reduction in support for safety precautions. Emerging evidence is consistent with this interpretation: White U.S. residents who perceived COVID-19 racial disparities to be a result of genetic susceptibility reported lower adherence to CDC COVID-19 safety recommendations (Crist and Schlegel, 2021). Our findings are also in line with trends observed in public opinion polls indicating that White U.S. residents increased their support for reopening the economy—in spite of public health risks—between late March and early June of 2020 (Cox, 2020), which corresponds with the release of data indicating racial health disparities in COVID-19.

Overall, individual differences in systemic knowledge of the contributors to COVID-19 racial disparities predicted greater fear of COVID-19, support for safety precautions, and empathy for those most vulnerable. Given the parallels between the systemic knowledge measure and the persistent inequalities framing condition, it may be surprising that these factors had opposing effects on our outcomes. However, the persistent inequalities article merely framed racial disparities as a product of persistent inequalities and did not provide extensive education on the systemically biased policies and practices that gave rise to persistent inequalities. The systemic knowledge measure, in contrast, captures a deeper understanding of systemic racism, consistent with prior work on theories of racial ignorance (e.g., Bonam et al., 2019; Mueller, 2018; Nelson et al., 2012; Salter et al., 2018). Furthermore, supplementary analyses indicated that across both studies systemic knowledge was strongly correlated ($r_s > 0.70$) with acknowledgement of systemic racism in the U.S. (Neville et al., 2000).

Examining the impact of efforts to address and educate people about population health disparities is critically important (Lewis et al., 2020), and our work is not the first to conclude that informing people of racial health disparities has the potential to backfire (Harell and Lieberman,

2021; Lee et al., 2017; Niederdeppe et al., 2008; Stephens-Dougan, 2022). Experimental investigation of reactions to systemic inequality in an entirely different domain—the criminal justice system—has shown a pattern similar to our study, such that alerting White U.S. citizens of racial disparities in the criminal justice system reduced support for criminal justice reform (Hetey and Eberhardt, 2014, 2018). Indeed, psychologists and communications scholars have argued that educating the public about systemic inequalities in a way that motivates (rather than depresses) health and social policy changes could be critical to addressing inequalities (Hetey and Eberhardt, 2018; Niederdeppe et al., 2008). Previous scholarship has recommended the use of narratives and visual images in public communication about population health disparities; thus, incorporating these factors in future research may lead to more optimal outcomes (Niederdeppe et al., 2008).

Future work should also examine the generality of these findings across U.S. residents and messages about racial disparities. Although our data included White participants from all U.S. states and was fairly representative of the White U.S. adult population, our participants tended to be younger (residents 65+ were underrepresented) and had lower incomes than the median U.S. household (U.S. Census Bureau, 2019). It is also worth considering how discussions of disparities develop over the course of a public health crisis. For instance, the emergence of COVID-19 vaccines in early 2021—which were disproportionately received by White U.S. residents during the initial rollout (DiRago et al. in press; Sacarny and Daw, 2021)—may have further reduced fear of COVID-19 and support for safety precautions beyond what we observed in our samples. Future work will also be critical for determining the extent to which the findings observed here generalize to other public health issues and messages about disparities. Even if the effects observed here do not generalize to all messages about racial disparities, the fact that some such messages can reduce public concern about health crises

and dampen support for precautions among White U.S. residents should raise serious concerns. Future research that examines a broader stimulus set (Yarkoni, 2020) and considers how to publicly address racial and ethnic disparities without spurring these unintended consequences will be essential.

9. Conclusions

Our findings suggest that alerting the public to racial health disparities (such as those observed with COVID-19) has the potential to perpetuate systemic racial inequalities—by reducing White U.S. residents' concerns about public health issues and support for policies aimed at protecting public health. Political and social power remains concentrated among White U.S. residents; thus, their attitudes toward public health issues have considerable implications for the establishment of public health policy. Our findings show that when COVID-19 racial disparities are highlighted, it can decrease White U.S. residents' willingness to engage in safety precautions themselves and support for policies protecting public health. Thus, publicizing COVID-19 racial disparities could reduce support for the very policies that aim to limit the toll of the pandemic, creating a vicious cycle wherein raising awareness of systemic racial health disparities results in public responses that actually exacerbate these disparities. Given these findings, we argue that care should be taken when considering how to talk about racial disparities and that additional research is needed to determine how to productively alert the public to racial health disparities.

Credit Statement

Allison L. Skinner-Dorkenoo: Conceptualization, Data curation, Formal analysis, Methodology, Visualization, Writing – original draft, reviewing & editing. **Apoorva Sarmal:** Conceptualization, Methodology, Visualization, Writing – original draft, reviewing & editing. **Kasheena Rogbeer:** Conceptualization, Project administration, Data curation, Methodology, Writing – original draft, reviewing & editing. **Chloe André:** Methodology, reviewing & editing. **Bhumi Patel:** Methodology, reviewing & editing. **Leah Cha:** Conceptualization, reviewing & editing.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.socscimed.2022.114951>.

Note. Error bars represent standard errors and #: $p < .10$, *: $p < .05$, **: $p < .01$, ***: $p < .001$. The indirect effects of X on Y through the mediators have subscripts to indicate the path through fear (b_{c1}) and empathy (b_{c2}); the direct effect of X on Y when the paths through the mediators are included in the model is represented by b_c .

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