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How information about race-based health disparities affects policy preferences: Evidence from a survey experiment about the COVID-19 pandemic in the United States

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ABSTRACT

In this article, we report on the results of an experimental study to estimate the effects of delivering information about racial disparities in COVID-19-related death rates. On the one hand, we find that such information led to increased perception of risk among those Black respondents who lacked prior knowledge; and to increased support for a more concerted public health response among those White respondents who expressed favorable views towards Blacks at baseline. On the other hand, for Whites with colder views towards Blacks, the informational treatment had the opposite effect: it led to decreased risk perception and to lower levels of support for an aggressive response. Our findings highlight that well-intentioned public health campaigns spotlighting disparities might have adverse side effects and those ought to be considered as part of a broader strategy. The study contributes to a larger scholarly literature on the challenges of making and implementing social policy in racially-divided societies.

Credit author statement

Both authors participated equally in the design and analysis of the study, the interpretation of results, and in the writing and revising of the final manuscript.

1. Introduction

Managing a massive infectious disease outbreak like the present COVID-19 pandemic requires that government and non-government leaders inform citizens of the dangers posed by the further spread of public disease in order to gain their support for and compliance with public health measures. When citizens perceive substantial risks to themselves and/or to those they care about, they are presumed to be more likely to lend their support to containment and mitigation efforts. Thus, public health advocates frequently communicate the idea that the epidemic affects “all of us,” in order to gain the near-universal compliance that is desired. From this perspective, compliance with wearing masks, social distancing, and other public health measures becomes a duty - and an act of solidarity - to others in society (French et al. 2020).

However, the reality of most disease outbreaks is that some segments of society tend to be more severely affected than others, at least for particular stages of the epidemic. In turn, public health advocates face a dilemma: They can spotlight such discrepancies in order to intensify warnings to the most vulnerable, and explicitly call for solidaristic cooperation from the general population (Cammett and Lieberman 2020). Yet, in contexts in which disease burden maps onto conflictual social cleavages, attention to group-based risk disparities may have a deleterious effect on support for government response, and counter the narrative that we are “all in this together.” When segments of society start thinking about a health risk as something that does not affect their own group, especially when feelings toward the more-affected group are negative, they may simply come to interpret the larger danger as a problem for “them,” but not for “us.” In a racially-divided society like the United States, when dangers are unevenly distributed by racial categories, such dilemmas tend to recur and cross-group solidarity may be harder to elicit, posing critical political and policy challenges.

In this article, we examine whether this theorized tradeoff actually exists, and empirically examine the possibility of conflicting effects: Does disseminating information about such inequalities have a salutary effect on gaining support for concerted action and the targeting of resources to redress them? By shining a light on a clear disparity, such...
initiatives can drive change by making citizens and policy-makers more aware and conscious of an unfair outcome. On the other hand, is it possible that the effects might be uneven depending on the particular characteristics and attitudes of individual citizens? Such questions have immediate implications for those public health advocates who seek to spotlight such concerns in informational campaigns; and broader implications for our understanding of the relationship between racial diversity, racial attitudes, and the politics of health policy-making.

We report on the results of a pre-registered survey experiment in order to begin to answer these questions. We randomized the delivery of current and best-available information about racial disparities in COVID-19 related deaths, and we hypothesized that the effects of the delivery of such information would vary according to racial identity and racial affect; and in particular, that Whites with negative attitudes towards Blacks would be less likely to support aggressive COVID-19 policies (and more likely to see such policies as restraining rights to personal liberties) when treated with such information.

Our research is motivated by and contributes to a body of prior research concerning how inter-ethnic and inter-racial attitudes affect support for social policies, particularly in related areas of health and health policy, which must incorporate understandings of shared risk, vulnerability, and contagion (Bhopal 2007; Putnam 2007; Williams et al., 2008). Several seminal works have highlighted the ways in which identities and other framing devices affect perceptions of and responses to “objective” dangers in ways that are quite distinctive from individualistic and rationalist economic notions of expected utility (Douglas 1992; Kahneman and Tversky 1979; Slovic 1999; World Bank 2015). Particularly in ethnically- and racially-divided societies, information about ethnic group-level disparities in health outcomes are likely to influence perceptions of risk and the need for policies that will allocate resources towards addressing such disparities. When incidence is high among a racial or ethnic subgroup, the disparities may be attributed to blameworthy behaviors or as signals of lower moral worth, reinforce notions of difference between “us” and “them,” and result in declines in solidaristic orientations with respect to risk and public policy.

Such dynamics were evident during previous pandemics. During the global AIDS crisis, a wide range of interested observers and government officials around the world similarly attempted to disseminate the idea that they faced a common threat, repeating the incantation that HIV or AIDS “knows no boundaries.” And yet, within a relatively short period of time, it became clear that some social groups were affected disproportionately relative to others. Leaders and ordinary citizens interpreted AIDS-related deaths and illnesses in terms of various socially meaningful categories – initially with respect to gay men, but eventually, specific ethnic, regional, and national groups. In turn, scholars documented various conflictual political dynamics – including shaming, blaming, and denialism – that ultimately impeded effective policy responses in these diverse societies (Bharat, Tyrer, and Paul 2001; Cohen 1999; E. S. Lieberman 2009; Smith 2004). A similar dynamic has been observed with other pandemics, such as those associated with SARS in 2003, where the disease was linked to Asian communities and resulted in both blaming and stigma (Keil and Ali 2006; Person et al., 2004).

Yet, there are many compelling public health reasons to raise awareness about who is most at risk. Indeed, profound and long-standing racial disparities in American health care access and health outcomes (Williams 1999) have been conspicuously manifest in the ongoing COVID-19 pandemic (Webb et al. 2020; Wrigley-Field 2020). As one prominent example, in mid-August, The Atlantic’s COVID tracking project broadcast their estimates that Black Americans had died from the coronavirus at a rate approximately 2.5 times greater than White Americans (Atlantic.). The Director of the National Institute on Minority Health and Health Disparities (NIMHD) at the National Institutes of Health (NIH), wrote in the Journal of the American Medical Association, “The collection and dissemination of COVID-19 data by race/ethnicity remain critically important to guide policy, health care, prevention, and intervention efforts” (Webb et al. 2020). A number of government, news, and civil society organizations began to document and to share information about COVID-related mortality and morbidity by race. Despite publicity around such information, one study found that African-Americans had less information about COVID-19 and in turn, were less likely to follow health recommendations (Alsan et al., 2020c).

Efforts to record and to publicize race-based disparities plausibly seek to promote risk-reduction strategies within communities and motivate public support for more aggressive and targeted policies. Nonetheless, our research points to the need to be cautious with respect to the uneven benefits of disseminating such information. Our findings largely reflect our expectations: we find differential effects of the dissemination of information. On the one hand, such information led to increased perception of risk among those Black respondents who lacked prior knowledge; and led to increased support for a more concerted public health response among those White respondents who expressed favorable views towards Blacks at baseline. On the other hand, for Whites with more negative affect towards Blacks, the informational treatment had the opposite effect: it led to decreased risk perception and to lower levels of support for an aggressive response. These findings build on a burgeoning literature that seeks to understand how context, social backgrounds (Alsan et al., 2020a) and partisanship (Gollwitzer et al., 2020; Kushner Gadarian, Goodman, and Pepinsky 2020; Stephens-Dougan, 2020) shape reactions to policies aimed at countering the health crisis.

In the next section, we detail the design of our study. In the third section, we report on the findings from our analyses and finally, we conclude with a discussion of the implications of these findings for policy, theory and future research.

2. Study design

We conducted an online survey experiment with American adults from August 28th to September 22nd, 2020, approximately six months following the initial recognition of the COVID-19 outbreak on American soil. The online sample was collected on the Qualtrics platform and respondents were solicited by the survey research company, Dynata, using quotas to ensure representativeness with respect to age, gender, and region, and soft quotas to ensure sufficient White and Black respondents.

As is standard with online panels, we do not have access to traditional response rate metrics because respondents were recruited into Dynata’s panel at various points in time, and we do not know how many invitations actually reached potential respondents. Only US citizens 18 years of age or older were eligible. Panelists were invited through vendor platforms, and no additional compensation was offered by the researchers. The study was voluntary, and no identifying information was collected beyond postal code. A total of 7572 individuals attempted the survey, but respondents were excluded based on pre-registered criteria if they did not consent, a quota was filled, they failed attention checks in the survey, failed to complete the entire survey or were determined to be low quality respondents (completing the survey in less than a third of the median time, or who straight-lined balanced question batteries). The final sample included 3961 valid responses.

A great virtue of the online panel approach used here is a high degree of representativeness compared with convenience and M-Turk samples frequently used in experimental survey research (Berinsky et al., 2012). Our final sample (70% White, 12% Black, and 49% female) was broadly reflective of demographic patterns in the U.S. population as a whole (60% White, 13% Black; 51% female). The sample was slightly more educated (42% with a BA or higher) compared with the US population (32%). The age distribution was skewed older (16% 18–29; 15% 30–39; 16% 40–49; 19% 50–59; 19% 60–69; 15% 70 and older) compared to the US population with a modal category of 18 to 29-year-olds (21% 18–29; 17% 30–39; 16% 40–49; 15% 50–59; 9% 60–69; 5% 70 and older). In this article, we report only on the responses of non-Hispanic Whites (n = 2765) and Blacks (n = 476). The Black category includes both Hispanic and non-Hispanic Black identifiers. For the analyses in
this paper, we have excluded an additional 719 additional respondents who identified as other racial categories or as Hispanic Whites.

2.1. Experimental design

The experiment was a between-subject experiment with a $2 \times 2$ factorial design where we manipulated 1) whether accurate information about racial disparities was provided (information treatment); and 2) whether respondents were asked to estimate racial disparities in COVID-related deaths (prior belief treatment). While our central interest was in the effects of delivering information (Treatment 1), it was important to understand the extent to which subjects already had such knowledge and to recognize that simply asking that question might have a “priming” effect (Treatment 2). Although we provided the correct information to all subjects in the study, what varied was the timing of delivery: it was considered an experimental treatment condition when we delivered the information prior to measurement of outcomes; a control condition when delivered subsequent to measurement of outcomes.

Table 1 shows the ordering of the survey flow in each treatment. Participants were randomly and blindly assigned to receive the two treatment conditions, leading to four treatment arms: control, information only, prior belief only, and a ‘correction’ treatment where prior belief was asked immediately prior to the respondent receiving the correct information. We provide information about the actual distribution across treatment groups and summary of covariate balance in Tables 2–5 of the supplementary materials. Despite random assignment, there were some substantively modest but statistically significant imbalances across treatments, including gender and affect among Whites, and gender, age and partisanship for Black respondents. Note that these variables are included as controls in subsequent models to address the imbalance but also because the models include moderators from observational data.

The respondents were block randomized by racial background into treatment arms. For Whites, we distributed them in the following proportions 4 (Control): 3 (T1: information only): 3 (T2: prior belief only): 6 (T3: corrective information) to ensure sufficient power to conduct analyses where we moderate by prior beliefs about disparities. Because we were unsure ex ante about the degree to which respondents would already possess correct information about racial disparities, it was necessary to collect more data in this treatment arm. Blacks and other racial minorities were block randomized only into Control, T1 and T3 to maximize sample size in the treatments for which we had explicit hypotheses. Further details on the sampling and design can be found in our pre-analysis plan (HarellAllison and Evan, 2020).

2.2. Treatments

The information treatment read, “Below you will find the actual COVID-related death rates by race and ethnicity in the United States. While Asians in the US are only slightly more likely to die than Whites (35 per 100,000), Latinos are currently 2.5 times more likely to die from COVID-19 than Whites at 85 deaths per 100,000.” This statement was followed with a simple bar graph for four racial groups (Whites, Blacks, Asians and Hispanic/Latinos) with bars representing the actual rates at the time of fielding (see Fig. 1).

The information provided was the most up to-date racial death rate estimates, and the 2.5 differential rate between Whites and Blacks had been relatively stable over the summer of 2020, even as overall deaths among both groups were rising.

As discussed above, we also randomly assigned a question asking the respondents their beliefs about racial disparities. The prior belief text read as follows: “Nationwide, there have been 54 COVID-19 deaths for every 100,000 Americans, according to the federal Centers for Disease Control (CDC) on August 24, 2020. We would like to know, to the best of your knowledge, what you would estimate the rate of deaths per 100,000 is for different racial groups in the United States. Please move the slider below for each group to indicate whether they are above, below, or the same as the national average of 54 deaths per 100,000. If you do not know the answer, please do not try to find the ‘right answer.’ We are interested in your best guess or estimate.” Respondents were then asked to guess for each racial group on a scale from 0 to 100, where the bar was set at the nationwide average of 54 and respondents were able to move it up or down. This question was placed at the end of the survey in the control treatment, and before the information treatment in T3. In T2, it was asked alone before our outcomes of interest. It was not asked in T1 (information only) because respondents had already received the correct information.

2.3. Measured variables

In order to precisely estimate the effects of information dissemination on risk perceptions and policy attitudes for a number of sub-groups, we asked respondents a series of demographic questions including their racial and ethnic identity, level of education, health status, gender, and age. We collected data on the state of residence of the respondent and (deviating from our Pre-Analysis Plan) we analyzed our data using the log of the most recent state-level COVID infection rates. We made this adjustment because we presumed that it would be the most relevant geographically located information that could be confounding our results. Nonetheless, our results are robust to the exclusion of this variable, and the inclusion of the original state dummy variables. We also asked subjects to respond to a series of feeling thermometers with respect to various groups, including Whites and Blacks on a 0–100 scale. (We included other non-race-based groups, such as Republicans, Democrats, Public Health Officials, Gays and Lesbians, to mask our specific interest in racial attitudes and to mitigate the likelihood of social desirability biases.) Note that for Whites, we presented the White feeling thermometer immediately before the Black feeling thermometer, and vice versa for Blacks. Additionally, we asked about partisanship using the American National Election Study battery, which includes strong, weak and leaning Republican/Democrats as response options.

Central to our theoretical predictions for White respondents is the notion of “Black Affect” – that is, how close (warm) or distant (cold) do Whites feel towards Blacks? In the analyses presented in this paper, we use the Black feeling thermometer as a measure of Affect, which is a slight deviation from our original Pre-Analysis Plan, which specified that we would use a categorical measure of distance between the White and Black feeling thermometers. We had intended to develop the latter based on analysis of the distribution of responses post data collection to create two categories, those who rated Whites higher and those who rated Blacks similarly or more positively than Whites. However, there were no clear cutoff points in the data and approximately one-third of respondents reported no difference between White and Black affect, albeit at varied levels on the respective thermometers. (For example, if one respondent reported a 20 on both thermometers; and another reported an 80 on both thermometers, our protocol would not have distinguished between these two respondents.) Additional analyses revealed that a post-treatment measure of racial resentment predicts placement on the Black feeling thermometer, even among those who rated Whites
identically to Blacks – implying that the two hypothetical responses described above should be interpreted differently. Therefore, we simply report the feeling thermometer towards Blacks, which is more straightforward to interpret, provides face validity and is related in meaningful ways to a post-treatment measure of racial attitudes. Our results with the Black feeling thermometer are robust to controlling for White affect. We do not detect significant effects when using the categorical distance measure as originally proposed, likely because of the shortcomings described above.

Ultimately, our study investigates how information about racial disparities might affect individual attitudes towards five key outcomes, which we calculate as scales based on batteries of questions in the survey:

- **Risk Scale**: Three items asking about perceived likelihood of becoming infected for oneself (for those reporting not having yet been infected), family, and close friends. Higher scores indicate more perceived risk.
- **Combat Scale**: Two items asking if the state and federal governments are doing too much, too little, or the right amount to combat the disease. Higher scores indicate government is doing too little.
- **Public Health Scale**: Seven items asking about whether COVID-19 specific public health measures (such as social distancing, hand-washing, etc), should be required or discouraged, including two reverse-coded items about opening up venues. Higher scores indicate more support for restrictions.
- **Liberty Scale**: Three agree-disagree items assessing the extent to which health guidelines were infringing personal liberties. Higher scores indicate a belief that personal liberties are being infringed (reverse expectations for our hypotheses).
- **Covid Relief Scale**: Four items capturing support for policies that provide extra support for those most affected by COVID-19, including people experiencing job loss, lost business revenue, mental health problems, and high medical bills, with higher scores indicating that much more should be done.

We provide descriptions of the construction of the scales, and the loadings of respective components, in Table 1 of the appendix; and summary statistics in Table 1 of the supplementary materials.

3. Findings

We describe our findings in three steps: First, we detail the extent of baseline knowledge about racial disparities in COVID-19-related death rates – presumably, a primary reason to disseminate information is to fill a gap in knowledge. Second, we report on the findings from the experimental research design described above, in which we examine the effects of delivering information to respondents. Third, we describe some additional analyses of the observational data to provide context for and to shed light on the external validity of those findings.

3.1. Existing knowledge about racial disparities

When asking respondents their estimates of death rates by race group, we set the default value for all groups at the national average at the time the survey was fielded: 54 deaths per 100,000. Respondents could move sliders higher or lower, and in Fig. 2, we plot their individual estimates of White death rates (on the Y-axis) and Black death rates (on the X-axis). We also indicate the actual rate of deaths for Blacks (85), and for Whites (35). Clearly, there was substantial variation in the estimates provided, and we had no strong a priori expectation of the level of accuracy of individual estimates. Of interest, however, is how people positioned relative to the most accurate race-specific death rates at the time, and the basis for informational treatment. We are particularly interested in those who substantially under-estimated the disparity in death rates, because we suspect those are individuals who would have...
been most affected by correct information. Because we did not expect citizens to know or to recall the exact extent of the disparity, we used a 1 standard deviation (of estimated disparities) departure from the actual difference as a threshold for distinguishing “correct estimators” from “under-estimators,” and we label the latter in red. Moreover, we reclassified as correct estimators those respondents who reported a smaller absolute disparity but a ratio of Black:White deaths that was at least 2.5 (which occurred in just a few instances when the respondents set both death rates very low on the slider). The latter correction had no material consequences on the findings reported below.

Using this approach, we classify 35% of the sample as providing reasonably “correct” estimates; and 65% are considered under-estimators. (In the supplementary materials, we show that the findings are relatively robust to other reasonable cut points for “under-estimators,” but not for the most conservative approach in which the estimate was considered correct so long as the respondent did not indicate that White death rates were higher. See Figs. 4–6 in the Supplemental Material.)

We find significant differences in reported beliefs about death rate disparities by racial identity of the respondents, and, among Whites, by level of expressed racial affect towards Blacks. On average, Blacks reported a disparity that was 8 percentage points higher than Whites did, and only about 53% of Blacks were coded as under-estimators (as depicted in Fig. 2), compared to 66% of Whites. Moreover, among Whites, we find that every point on a 100-point Black feeling thermometer was associated with a 0.045 percentage increase in the estimated magnitude of the death disparity.

Having established the existence of substantial information gaps, we proceed to test the effects of the informational treatment.

3.2. Experimental analyses

Our main question is whether the delivery of accurate information about racial disparities in death rates causes change in risk perception and support for aggressive public health responses? In this section, we report the findings from pre-specified analyses (and we note deviations from our PAP). In our presentation in this article, we have re-ordered the hypotheses from the original analysis plan to simplify presentation. Note that we present findings with respect to one of our pre-registered hypotheses – that merely asking Whites their estimates of racial disparities (The “prior beliefs” treatment/T2) should have similar effects as providing information about those disparities conditional on beliefs about racial disparities in death rates – only in the supplementary materials. All reported regression estimates are Ordinary Least Squares

| Table 2 | Estimated treatment effects of disparity information on risk perception by race group. |
|---------|---------------------------------------------------------------------------------|
|         | (1) | (2) | (3) | (4) |
|         | All | Blacks | Whites | Whites |
| Information | −0.0197 | −0.278 | −0.0735 | −0.220 |
|           | (−0.32) | (−1.40) | (−0.84) | (−1.76) |
| Black    | 0.0168 |       |       |       |
|          | (0.17) |       |       |       |
| Information*Black | −0.0273 |       |       |       |
|           | (−0.23) |       |       |       |
| Underestimate |       | −0.309 | −0.00803 |       |
|            |       | (−1.54) | (−0.12) |       |
| Information*Underestimate | 0.759** | 0.0486 |       |       |
|              | (2.70) | (0.50) |       |       |
| BlackAffect |       |       | 0.000121 |       |
|            |       |       | (0.10) |       |
| Information*BlackAffect | 0.00228** |       |       |       |
|              | (2.02) |       |       |       |
| Woman     | 0.0747 | 0.0156 | 0.0422 | 0.0499 |
|          | (1.70) | (0.11) | (0.85) | (1.16) |
| Age       | −0.0477*** | 0.00232 | −0.0453** | −0.0418*** |
|           | (−3.71) | (0.06) | (−3.11) | (−3.34) |
| University | 0.0720 | −0.155 | 0.0978 | 0.0969* |
|            | (1.63) | (−1.06) | (1.96) | (2.25) |
| logStateDeaths | 0.000163 | 0.0547 | 0.00942 | 0.00456 |
|           | (0.01) | (0.78) | (0.52) | (0.28) |
| PriorsAsked | 0.0896 |       | 0.101 | 0.114 |
|           | (1.69) |       | (1.60) | (1.86) |
| PriorsAsked*Information |       | −0.0506 |       |       |
|              |       | (−0.61) |       |       |
| _cons      | 2.613*** | 2.270*** | 2.544*** | 2.546*** |
|           | (16.08) | (3.59) | (14.28) | (14.52) |
| N         | 2542 | 279 | 2039 | 2636 |

* p < .05 ** p < .01 *** p < .001.

Models 1 and 2 exclude treatment arm 2 because no black respondents.
Models 2 and 3 exclude treatment arm 1 because no information about prior beliefs.
Next, we consider the effects of the informational treatment on the four policy-related scales. We first turn to the analysis among Black respondents (Table 3). We expected that Blacks would be more likely to support a more aggressive government response (and would be less concerned about rights infringement) when treated with racial disparity information, and that this would be stronger when Blacks previously under-estimated the gap (under-estimators in the corrective information condition). However, we found no statistically significant effects of the informational treatments on any of the measured outcomes. Notably, we do find (a non-experimental result) in two of the four models that under-estimators were less likely to favor more aggressive policies – in other words, that those who perceived more risk, favored more aggressive approaches. We did not specify in our analysis plan that we would study black under-estimators in this analysis, but given the findings concerning risk perception, this seemed warranted. Our findings of the effects of the information treatment are similarly null in a specification that does not consider under-estimators.

As for White respondents, our theoretical expectations centered on the moderating influence of affect towards Blacks. In our models for whites (Table 4, columns 1–4), we find that the moderated effects are in the expected directions. For two of the four models – in which the outcomes are Combat Scale and Liberty Scale – the main and interaction effects are also significant at conventional levels. When we limit the analysis to White under-estimators (Table 4, columns 5–8), we attain similar results. In the latter set of estimates, the pattern is somewhat intensified for the Combat Scale, it is consistent for the Liberty Scale, and with respect to the Public Health Scale, we find a significant and positive treatment effect only for respondents who were at the extreme of affect towards Blacks. Estimates of the moderating effect of racial affect are robust to the Benjamini-Hochberg correction for multiple comparisons. More specifically, the effect for the Combat Scale remains significant using the false discovery rate of 0.05, and the Liberty Scale at 0.10. We illustrate the effect for under-estimators in Fig. 5 (and for the full White sample, presented in Fig. 1 of the supplementary materials.) We plot the estimated marginal treatment effects of information on each outcome conditional on five levels of racial affect, from coldest to warmest. In the upper-left panel (Combat Scale) one can see that for those Whites with the coldest views towards Blacks, the estimated treatment effect is negative and the confidence interval does not overlap with zero; while for those Whites with the warmest views, the estimated effect is positive and significant. A similar pattern is observed for the Public Health Scale, though this only reaches significance among those with warm feelings. With respect to estimates of the Liberty Scale, as predicted, the pattern is in the opposite direction – those Whites with the coldest views are more likely to be affected by the information treatment (compared with those who hold similar views in the control group) and to report that the government is infringing on their rights during the pandemic; and the opposite is true for those who expressed warm feelings at baseline.

To give a sense of the magnitude of those effects, consider the
estimated marginal treatment effect (−.08) on Combat Scale for White under-estimators at the (cool) “25” level on the Black Affect thermometer. Substantively, that is more than a one-quarter shift in the standard deviation of that scale, the equivalent of 42 percent of the difference (0.19) between the mean Combat Scale score for Democrats (0.79) and other partisans in the sample (0.60). Given the highly-partisan nature of the politics of COVID-19 policy, in which policy preferences are understood to be wildly different, we interpret this estimated treatment effect as substantively quite large.

Moreover, as discussed at the outset, our research design lends itself to asking whether it was the delivery of information itself or merely priming the consideration of racial disparities which affected responses.

Table 3
Estimated treatment effects of disparity information on policy preferences, Black respondents.

|              | (1) CombatScale | (2) Pub_Health_Scale | (3) Liberty_Scale | (4) CovidReliefScale |
|--------------|----------------|---------------------|------------------|---------------------|
| Information  | −0.0867        | −0.0589             | −0.0118          | −0.0159             |
|              | (−1.48)        | (−0.49)             | (−0.08)          | (−0.13)             |
| Underestimate| −0.109*        | −0.130              | 0.108            | −0.289*             |
|              | (−2.47)        | (−1.11)             | (0.77)           | (−2.43)             |
| Information*Underestimate | 0.0703 | −0.00997            | 0.0452           | −0.0703             |
|              | (1.15)         | (0.06)              | (0.23)           | (−0.42)             |
| Woman        | 0.0106         | 0.0843              | −0.0148          | 0.0682              |
|              | (0.33)         | (1.00)              | (−0.15)          | (0.79)              |
| Age          | 0.0235*        | 0.158***            | −0.170***        | 0.114***            |
|              | (2.55)         | (6.45)              | (5.80)           | (4.58)              |
| University   | −0.0323        | 0.0526              | −0.311**         | −0.108              |
|              | (−1.01)        | (0.62)              | (−3.05)          | (−1.24)             |
| logStateDeaths | 0.00480     | 0.0438              | −0.0651          | 0.0588              |
|              | (0.31)         | (1.08)              | (−1.34)          | (1.42)              |
| ,cons        | 0.706***       | 3.253***            | 2.870***         | 0.296               |
|              | (5.07)         | (8.80)              | (6.49)           | (0.79)              |

N = 316

* p < .05 **p < .01 ***p < .001.

Table 4
Estimated treatment effects of disparity information on policy preferences, White respondents.

|              | (1) CombatScale | (2) Pub_Health_Scale | (3) Liberty_Scale | (4) CovidReliefScale | (5) CombatScale | (6) Pub_Health_Scale | (7) Liberty_Scale | (8) CovidReliefScale |
|--------------|----------------|---------------------|------------------|---------------------|----------------|---------------------|------------------|---------------------|
| Information  | −0.0824*       | −0.148              | 0.266*           | −0.00607            | −0.140**       | −0.125              | 0.176            | −0.0469             |
|              | (−2.42)        | (−1.67)             | (2.21)           | (−0.07)             | (−2.85)        | (−1.02)             | (1.13)           | (−0.39)             |
| BlackAffect  | 0.0009829      | 0.00315***          | −0.00346**       | 0.00716***          | −0.000620      | 0.00172             | −0.02062         | 0.06601***          |
|              | (0.24)         | (3.55)              | (−2.87)          | (8.19)              | (−3.11)        | (1.46)              | (−1.74)          | (5.12)              |
| Information*BlackAffect | 0.00117**   | 0.00169             | −0.00347*        | 0.00102             | 0.00232***     | 0.00317             | −0.00434*        | 0.00139             |
|              | (2.66)         | (1.48)              | (−2.23)          | (0.90)              | (3.52)         | (1.90)              | (−2.07)          | (0.85)              |
| PriorsAsked  | −0.0172        | −0.0890*            | 0.0998           | 0.00948             | −0.0177        | −0.106              | 0.161*           | −0.00672            |
|              | (−1.04)        | (−2.06)             | (1.68)           | (0.22)              | (−0.79)        | (−1.89)             | (2.26)           | (−0.12)             |
| Information*PriorsAsked | −0.00105     | 0.0354              | 0.00920          | −0.0230             |
|              | (−0.07)        | (0.88)              | (0.17)           | (−0.58)             |
| Woman        | 0.0430***      | 0.142***            | −0.125**         | 0.0696*             | 0.0496**       | 0.205***            | −0.173**         | 0.0553              |
|              | (3.68)         | (4.65)              | (−3.02)          | (2.32)              | (2.85)         | (4.73)              | (−3.13)          | (1.28)              |
| Age          | 0.00327        | 0.0670***           | −0.09000***      | 0.0146              | 0.00250        | 0.0761***           | −0.0924***       | 0.0145              |
|              | (0.97)         | (7.65)              | (−7.56)          | (1.69)              | (0.51)         | (6.23)              | (−5.93)          | (1.19)              |
| University   | −0.0329**      | 0.0293              | −0.192***        | −0.136***           | 0.0586**       | 0.0168              | −0.0833          | −0.110*             |
|              | (−2.82)        | (0.96)              | (−4.65)          | (−4.55)             | (−3.29)        | (0.38)              | (−1.47)          | (−2.47)             |
| logStateDeaths | −0.00433    | 0.00548             | −0.0131          | 0.0156              | −0.00168       | 0.00614             | −0.0112          | 0.0131              |
|              | (−0.99)        | (0.48)              | (−0.84)          | (1.39)              | (−0.26)        | (0.39)              | (−0.55)          | (0.83)              |
| ,cons        | 0.688***       | 3.519***            | 2.464***         | 0.137               | 0.689***       | 3.476***            | 2.507***         | 0.180               |
|              | (14.43)        | (28.36)             | (14.60)          | (11.12)             | (10.03)        | (20.32)             | (11.50)          | (1.06)              |

N = 2754

* p<.05 **p<.01 ***p<.001.
in the manner we observe. In fact, we find no substantively or statistically significant positive results associated with assignment to the “priming” treatment arm, and conclude that the effects are due to the information itself. If anything, we find some instances when simply asking the racial disparity question, without providing correct information, can have negative (though rarely significant) effects (See Tables 6, 8-10 in the supplementary materials).

3.3. Observational analyses and further diagnostics

In order to consider the external validity of the experimental results, we also investigate whether similar patterns hold within the observational data, using pre-existing knowledge about racial disparities in death rates as akin to our informational treatment of providing correct information. As this analysis was not specified in our pre-analysis plan, it should be considered exploratory. We proceeded as follows: Within the group of White subjects who did not receive the informational treatment (T2), we consider those who were under-estimators to be "control" and those who did not under-estimate to be "treated" and for sake of clarity, we label the latter, "Correct Estimate." Of course such assignment is non-random, so we control for other possible confounders, and our focus is to estimate the marginal effects of prior knowledge conditional on racial affect.

As reported in Table 11 of the supplementary materials, we find that the direction of all estimated interaction parameters is in the same direction as in the experimental results, but only in the case of the Combat Scale is the estimate of the interaction effect statistically significant, echoing our overall finding that the likelihood of a respondent wanting the government to do more as a function of being knowledgeable about the racial disparity in death rates is conditional on racial affect.

We also test whether our experimental findings are robust to the inclusion of partisanship, which as we note earlier, has been an understandable focus of much recent research on attitudes towards COVID-19 and related policies (Stephens-Dougan, 2020). Over the course of recent election cycles, racial attitudes in the population have become more correlated with partisan identities (Tesler 2016), and indeed, in our sample, White Republicans and Democrats differ in their attitudes toward Blacks in significant ways. (In our study, among Whites, being a Democrat is correlated with the Black feeling thermometer at $R = 0.21$ and with racial resentment at $R = -0.47$) Yet, while it is certainly true that party identification is a strong predictor of many of the outcomes in this study, controlling for partisanship does not erase our main findings of interest (see Table 12 and Figs. 2 and 3 in the supplementary materials).

4. Discussion

Most immediately, our study highlights an important dilemma concerning the dissemination of public health information as a strategy
aimed to increase awareness, and to promote behavior change and support for public health policies: The same information may be interpreted quite differently and with opposite effects for different categories of citizens. The politically- and racially-polarized nature of contemporary American society is particularly vulnerable to such challenges. We experimentally-tested the effects of delivering information about actual race-related disparities in COVID-19 death rates. In line with the hopes of those who disseminate such information, we found that for Black respondents who were not aware of the extent of such disparities, the information treatment led to an increased level of risk perception. Such a finding is substantively important, because previous work has shown that when people perceive a greater risk of infection, it can lead to compliance with health recommendations (Prati et al. 2011). This complements new research that shows that targeted information campaigns can increase information about COVID-19 causes and symptoms among higher risk groups like Black and Latinx communities, and that those information campaigns can also promote further information seeking when they come from doctors from the Latinx and Black communities (Alsan et al. 2020b).

By contrast, among Whites – for those who expressed more negative attitudes towards Blacks – the same treatment led to a decreased sense of risk perception. And although the informational treatment contributed to some Whites being more likely to want the government to act aggressively to combat the COVID-19 pandemic, and made them less likely to be concerned that their civil liberties were being trampled in the wake of a national public health response, this was only true among those Whites who expressed warm affect towards Blacks. The opposite was true for those who were colder towards Blacks, implying that the information had a chilling effect with respect to support for concerted public health policies. With respect to civil liberties, we note that our findings are complimentary to those of a large-scale study (Alsan et al., 2020a), which found that individuals were more willing to give up civil liberties when they perceive public health risks. In our study, the provision of information about increased relative risk for Blacks among Whites with cold affect towards Blacks made them perceive a lower level of threat and in turn, to effectively demand more in terms of protections of civil liberties.

Substantively, according to the self-reports used in this paper, many more Whites say they are warm towards Blacks as compared with those who say they are cold with approximately 44 percent of Whites in the sample reporting a 75 or higher and just 7 percent reporting a 25 or lower on the 100-point scale. We note that 15 percent of White respondents reported a Black feeling thermometer score of less than 50, which implied that they actually shifted the slider to the left. On the one hand, this suggests that information dissemination about racial disparities may do more good than harm from a public health perspective. But it also highlights that such information can further polarize a sizable minority towards negative views concerning government responses to the pandemic.

To be sure, our study is limited in the sense that it simply captures patterns and treatment effects during essentially one snapshot in time, and it does not include direct behavioral measures. We might have found different results had we tested this treatment at an earlier (or later) moment in the pandemic, when citizens generally had less information. For example, we might have found stronger effects on risk perceptions and policy preferences, especially among Black respondents. We also cannot speak directly to the mechanism that links the treatment to information to changes in support for more thorough-going policies. It may also be the case that negative affect simply causes some White respondents to devalue policies that they perceive will involve transfers to Black Americans – irrespective of actual benefits to themselves – as has been found with respect to welfare policies. This would be consistent with a body of scholarly research identifying the importance of race and racial attitudes on support for social welfare more generally (R. Lieberman 1998; Gilets 1999; Valentino et al. 2002; Harell et al. 2016; Wetts and Willer 2018).

While our focus here is on race-based cleavages, other characteristics – for example age – have been relevant predictors of COVID-related mortality and morbidity. However, in this case, we would not predict that similar reporting of disparities would lead to the same effects, particularly with respect to support for generous policies. Generational differences tend not to map onto the types of “in-group vs. out-group” social dynamics, which we theorize as central to the findings in our study. Studies of social welfare politics show that seniors tend be viewed even by a younger cross-section of the citizenry as a sympathetic group (Van Oorschot 2006). However, further research would be needed to test such a proposition.

Moreover, we note that in this study, our focus has been limited to “ordinary citizens” and not policy elites. Of course, the latter tend to be more consequential for actual policy-making and if the effects of information campaigns like the one studied here are more uniformly impactful in the desired direction, that may justify their continued implementation. Nonetheless, the findings from our study reflect that from the perspective of trying to increase citizen support for more aggressive and more equitable public health policies, this informational treatment can have the opposite effect as intended. And along these lines, the findings are at least suggestive that promoting better intergroup relations may itself be a useful public health strategy, an idea that merits further investigation. Of course, the path to such an outcome is itself non-trivial. Future research should explore whether public health campaigns that focus on framing high risk categories in non-racial terms can lead to more uniformly positive outcomes by avoiding the activation of racial considerations.

More generally, our findings accord with a body of scholarly literature that attests to the challenges of making and implementing successful public health and other social policies in ethnically- and racially-divided societies. The tendency to avoid acceptance of shared risks, and perceptions of different costs and benefits for “us” and “them” have the effect of depressing needed solidarity for such schemes.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.socscimed.2021.113884.

Replication data and code are available at: https://dataverse.harvard.edu/dataverse/rac cov

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