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Americans' perceptions of health disparities over the first year of the COVID-19 pandemic: Results from three nationally-representative surveys

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ABSTRACT

COVID-19 has illuminated health inequity in the United States. The burdens of disease are much higher among Black and Indigenous people and other people of color. Disparities by income are also profound, as lower-wage workers were less able to adopt mitigating behaviors compared to higher-income counterparts. These disparities became part of public health discourse in 2020, with commentators frequently highlighting the connection between racism, socioeconomic position, and COVID-19. But what proportion of the public—and among key subgroups—recognized these social group disparities, relative to disparities associated with age and chronic illness, and did public recognition change over the first year of the pandemic? To address these questions, we analyzed data from three nationally-representative cross-sectional public opinion surveys, collected using the NORC AmeriSpeak panel in April 2020 ($N = 1007$), August 2020 ($N = 2716$), and April 2021 ($N = 1020$). The key outcomes were respondents' agreement with statements about disparities in COVID-19 mortality by age, chronic illness, income, and race. We found little change from 2020 to 2021 in Americans' recognition of disparities. At all three time points, most respondents acknowledged age and chronic illness disparities, while no more than half at any time point recognized income- and race-based disparities. Political party affiliation was not statistically associated with agreement with age or illness-related disparities, but was strongly associated with views about income- and race-based disparities. Efforts to promote recognition of racial and socioeconomic health disparities in the United States need to be mindful of the ways in which public understanding of health inequities is linked to partisanship.

1. Introduction

The COVID-19 pandemic has had vastly unequal consequences in the United States. Whether measured as sickness, death, or socioeconomic impact, people of color and lower-income Americans have suffered more than their White and higher-income peers (Berkowitz et al., 2020). In addition to these socioeconomic and racial disparities, mortality data disseminated by health agencies and the media throughout the pandemic consistently emphasized the higher risk for groups defined by age (i.e., older people were more at risk than younger) and those with pre-existing conditions (i.e., those with these conditions were more at risk than those who were healthier) (Centers for Disease Control and Prevention, 2022).

While health inequities have been a major focus of public health research for several decades, information about these disparities has generally been slow to diffuse to the public (Benz et al., 2011). For example, three nationally-representative public opinion studies published in the past decade found that fewer than half of respondents recognized racial disparities in health care or health status (Benz et al., 2011; Booske et al., 2011; Bye et al., 2016). Further, research shows that understanding of health disparities varies across groups, with people with more education and those who identify as politically liberal or a

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Democrat more likely to be aware that health disparities exist and/or more likely to accept information about disparities (Booske et al., 2011; Bye et al., 2016; Gollust and Cappella, 2014). These findings indicate that the relatively low public awareness of socially-patterned health inequities may not only implicate barriers in knowledge dissemination but also biases in information processing, including selection of information sources and resistance to messages based on partisan predispositions (Gollust and Cappella, 2014; Niederdeppe et al., 2013).

There has been limited research assessing public understanding of inequities in COVID-19 in particular, and even less research examining understanding over multiple time points. Yet one might expect that there would be growth in understanding of COVID-19 inequities over the first year of the pandemic. Health inequities in COVID-19, particularly for Black Americans relative to White, became a salient theme in the national conversation during the summer of 2020, when many Americans took to the streets in protest of the treatment of Black people at the hands of police and other societal institutions. By the end of the summer of 2021, >200 entities (states, counties, cities) had made declarations of racism as a public health crisis, with most occurring following George Floyd's murder in May 2020, generating public and media attention (Paine et al., 2021). However a June 2020 survey found that only 50% of respondents recognized that Black people were more likely to suffer from COVID-19 than White people (Hamel et al., 2020). Another survey conducted in the summer of 2020 found that 60% of respondents recognized racial differences in the impact of COVID-19, with greater recognition (by 20 percentage points) among those with higher educational attainment (Carman et al., 2021). Partisan differences in attitudes and beliefs about the pandemic – that is, differences between Democrats and Republicans – have emerged on nearly every imaginable facet of the pandemic (Gadarian et al., 2022). Indeed, a large partisan gap was observed in the public's recognition of racial disparities as early as April 2020 (Gollust et al., 2020) and also in June 2020 (Hamel et al., 2020).

The purpose of the current study was to build on findings regarding public recognition of mortality disparities in COVID-19 that were assessed in April 2020, prior to George Floyd's death (Gollust et al., 2020). We expected that public perceptions of health disparities – particularly by race – would have grown over time, as compared to perceptions of other types of disparities. Specifically, the current study assessed whether there were changes in levels of public recognition of four types of COVID-19 mortality disparities over the pandemic's first year: disparities by race, age, income, and having a chronic illness. Understanding levels of public recognition is important for ascertaining potential support for policy action to address these inequities (see, e.g., Rigby et al., 2009), as well as for informing COVID-19 health communication efforts.

2. Methods

We fielded three cross-sectional surveys using the AmeriSpeak panel, a panel of about 50,000 people that is recruited and maintained by NORC, an independent research institution at the University of Chicago. NORC recruits participants into the AmeriSpeak panel through address-based sampling to generate a panel that is designed to be representative of the national U.S. household population. The household panel recruitment rate is 34%. NORC contracts with researchers to implement surveys of this participant panel through two mechanisms: a multi-client shared survey platform that is fielded bi-weekly (called the Omnibus survey) or through customized surveys in which a researcher proposes their own stand-alone survey instrument for fielding. For this study, data were collected in April 2020 (April 23–27, using the Omnibus; N = 1007), August 2020 (August 3–25, from a customized survey wave that was part of another study; N = 2716) (Nagler et al., 2022), and April 2021 (April 15–19, using the Omnibus; N = 1020). For the two Omnibus waves, the surveys were administered in both online and telephone modes (although most, about 90%, of the Omnibus surveys are conducted online). For the August 2020 wave, all of the surveys were conducted online, and online respondents in all waves could use mobile devices, tablets, or computers to complete the surveys. See Table 1 for demographic characteristics of the samples.

Table 1
Weighted descriptive characteristics of the three survey waves, April 2020, August 2020, April 2021.

	Apr-20 (N = 1007)	Aug-20 (N = 2716)	Apr-21 (N = 1020)
Age (%)			
Age 18–29	18.1	20	20.7
Age 30–44	26.7	26.7	24.8
Age 45–59	24.5	23.4	24.5
Age 60+	30.7	30	30.1
Female (%)	51.4	51.8	51.6
Education (%)			
High school or less	36.2	37.6	37.6
Some college	28.5	27.9	27.6
College or higher	35.3	34.5	34.8
Household income (%)			
<$30,000	27.1	25.5	22.4
$30–$59,999	26.7	27.8	28
$60,000–$99,999	23.7	24.1	25.4
$100,000+	22.5	22.7	24.2
Race/ethnicity (%)			
White, non-Hispanic	62.6	63.3	62.8
Black, non-Hispanic	12	12	12
Hispanic	16.5	16.1	16.7
Other, multi-racial	8.9	8.7	8.6
Census region			
East	17.7	17.6	17.3
Midwest	20.7	20.9	20.7
South	37.8	37.7	38
West	23.9	23.8	24
Political party identification			
Democrat	42.8	46.6	47.6
Independent	27.4	12.3	16.2
Republican	28.8	41.1	36.1

The key measure in each survey was a battery of four items created for the initial study (Gollust et al., 2020), asking how much respondents agreed with statements describing disparities in COVID-19 mortality: "Older people are more likely to die of complications from COVID-19 (coronavirus) than younger people", "People with chronic health conditions (such as diabetes and heart disease) are more likely to die of complications from COVID-19 (coronavirus) than people without such conditions", "Poorer people are more likely to die of complications from COVID-19 (coronavirus) than wealthier people", and "Black/African American people are more likely to die of complications of COVID-19 (coronavirus) than White people." Responses were measured as "Strongly disagree", "Disagree", "Neither agree nor disagree", "Agree", and "Strongly agree". We also created dichotomized measures of agreement, combining "Strongly agree" and "Agree" compared to the other responses.

We also assessed participant characteristics, through survey items or AmeriSpeak profile data. For the April 2020 and 2021 waves, we measured political party affiliation using a 7-point self-placement measure (Green and Schickler, 1993). For the August 2020 wave, we relied on a previously-collected measure of party affiliation from profile data that AmeriSpeak maintains. We created three categories: Democrats (including those who "lean" Democrat), Independents, and Republicans (including those who "lean" Republican), given research on party affiliation that suggests that those who identify as "leaning" are more similar to that partisan group than to true Independents (Petrocik, 2009). We also used other AmeriSpeak profile data available, including gender, age, race/ethnicity, educational attainment, annual household income, and region of residence, as potential predictors of agreement with the disparities statements. In the April 2020 and April 2021 survey waves, we included measures of respondents' information sources, using

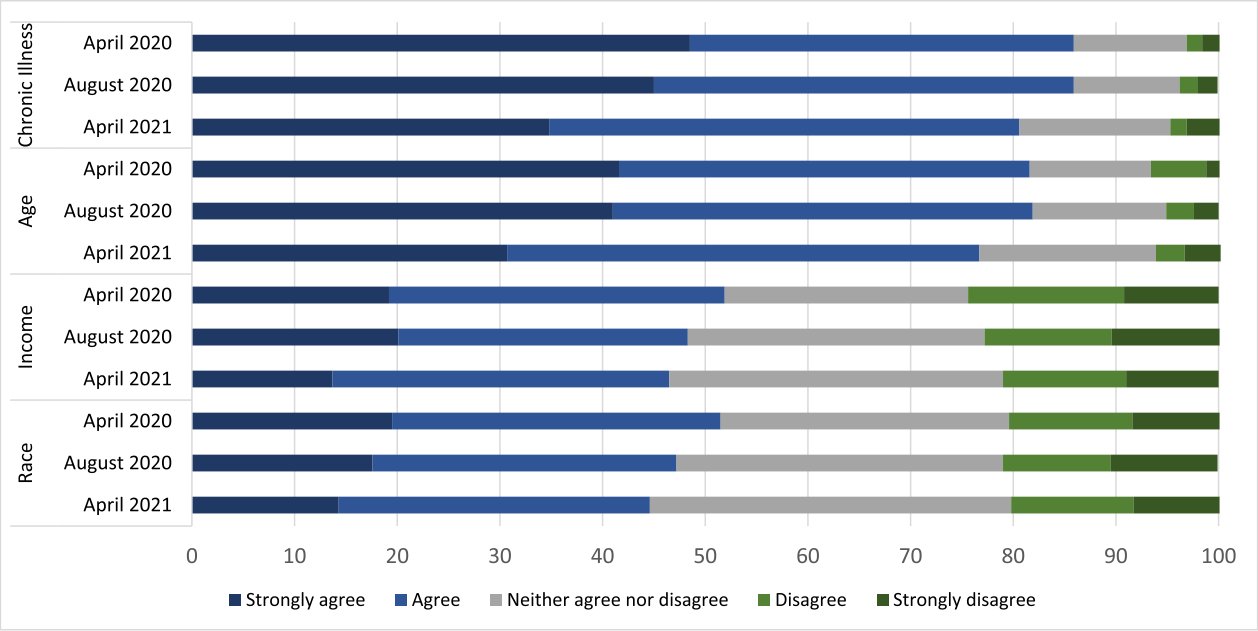

Fig. 1. Overall Agreement with COVID-19 Mortality Disparities, by Type of Disparity (April 2020, August 2020, April 2021).
Note: See Table 2 for the values and confidence intervals from this figure.

an item asking "[W]hich of the following sources have you turned to for information about COVID-19 (coronavirus) in the past week?" Respondents could check all that apply from a list of 16 options (i.e., Fox News, CNN, local newspapers, the CDC, etc.), and we combined response options into eight distinct categories based on our previous paper (Gollust et al., 2020). We also constructed a measure of county-level COVID-19 mortality rates at the time of the survey for the April 2021 wave, by merging data from the New York Times on cumulative number of deaths by April 15 for each county, and then calculating deaths per 100,000 population. As in our previous study, we then constructed quartiles of mortality rates.

For the current analysis, we used descriptive statistics to summarize agreement with the four statements about COVID-19 disparities at each time point. We also conducted Chi-squared tests to compare distributions of agreement with the dichotomous measure across respondents' race, education, and partisanship. Last, we conducted a multivariable logistic regression analysis using the April 2021 survey wave to replicate an April 2020 analysis assessing the predictors of agreement with each type of disparities (Gollust et al., 2020). (We did not complete this analysis for the August 2020 wave as we lacked key variables necessary for that replication, including information sources used.) All analyses used the survey wave-specific NORC-provided survey weights, which use national Census benchmarks by gender, age, education, race/ethnicity, and region, to adjust the estimates to be representative of the

Table 2
Agreement with disparities in mortality from COVID-19, April 2020, August 2020, April 2021 (proportions and 95% CI's).

Type of disparity		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Overall agree (sum agree/strongly)
Chronic illness	April 2020	1.7 (1.0–2.9)	1.5 (0.8–2.7)	11.0 (8.5–14.2)	37.4 (33.6–41.3)	48.5 (44.4–52.5)	85.8 (82.5–88.6)
	August 2020	1.9 (2.3–2.7)	1.8 (1.3–2.7)	10.3 (8.7–12.3)	40.9 (38.3–43.5)	45.0 (42.4–47.6)	86.0 (83.9–87.8)
	April 2021	3.2 (2.0–4.9)	1.6 (0.9–3.0)	14.7 (11.8–18.1)	45.8 (41.6–50.0)	34.8 (31.0–38.7)	80.5 (76.9–83.7)
Age	April 2020	1.3 (0.8–2.1)	5.4 (3.6–7.8)	11.8 (9.4–14.7)	40.0 (36.2–44.0)	41.6 (37.8–45.6)	81.6 (78.1–84.6)
	August 2020	2.4 (1.7–3.4)	2.7 (2.0–3.5)	13.0 (11.1–15.2)	40.9 (38.3–43.4)	41.0 (38.5–43.6)	81.9 (79.6–84.0)
	April 2021	3.5 (2.2–5.5)	2.8 (1.8–4.3)	17.2 (14.0–20.6)	46.0 (41.9–50.2)	30.7 (27.2–34.5)	76.7 (72.8–80.1)
Income	April 2020	9.2 (7.1–11.9)	15.2 (12.6–18.3)	23.7 (20.4–27.4)	32.7 (29.1–36.5)	19.2 (16.2–22.5)	51.9 (47.9–55.9)
	August 2020	10.5 (8.8–12.3)	12.4 (10.9–14.0)	28.9 (25.9–30.6)	28.2 (25.9–30.6)	20.1 (18.1–22.2)	48.3 (45.6–50.9)
	April 2021	9.0 (7.1–11.4)	12.0 (9.5–15.0)	32.5 (28.5–36.8)	32.8 (29.1–36.8)	13.7 (11.3–16.5)	46.5 (42.4–50.6)
Race	April 2020	8.5 (6.3–11.3)	12.0 (9.5–14.9)	28.1 (24.6–31.9)	32.0 (28.4–35.8)	19.5 (16.7–22.6)	51.5 (47.5–55.5)
	August 2020	10.4 (9.9–12.3)	10.5 (9.6–12.2)	31.8 (29.3–34.4)	29.6 (27.3–32.0)	17.6 (15.8–19.5)	47.2 (44.6–49.8)
	April 2021	8.4 (6.4–10.9)	11.9 (9.4–15.1)	35.2 (31.2–39.4)	30.3 (26.7–34.1)	14.3 (11.8–17.1)	44.5 (40.5–48.7)

Note: All analyses apply NORC-provided survey weights for the three waves separately.

Table 3
Bivariate associations between respondent characteristics (race, education, and partisanship) and agreement with disparities in mortality from COVID-19, April 2020, August 2020 and April 2021.

	Apr-20	p-value[a]	Aug-20	p-value[a]	Apr-21	p-value[a]
Chronic illness disparity						
Race						
White	90.2	0.005	88.9	0.005	85.5	0.0004
Black	71.5		77.3		67.6	
Hispanic	81.1		79.9		69.1	
Other / multi	82.7		87.6		83.7	
Education						
< HS or HS	79.2	<0.001	78.7	<0.001	72.6	<0.001
Some college	85.9		86.5		81.5	
College+	93.6		93.5		88.3	
Partisanship						
Democrat	82.8	0.548	87.3	0.358	82.8	0.01
Independent	80.3		87		69.1	
Republican	82.4		84.3		83.8	
Age-related disparity						
Race						
White	87	<0.001	86.1	<0.001	80.3	0.02
Black	63.4		69.5		67.8	
Hispanic	74.7		72.3		67	
Other / multi	81.4		85.7		81	
Education						
<HS or HS	72.9	<0.001	73.8	<0.001	68.8	<0.001
Some college	81.8		80.8		76.3	
College+	90.4		91.5		84.8	
Partisanship						
Democrat	82.8	0.811	83.4	0.284	81	0.1
Independent	80.3		83.4		70.3	
Republican	82.5		79.8		75	
Income disparity						
Race						
White	51.1	0.812	45.6	0.018	46.5	0.602
Black	49.4		54		52.8	
Hispanic	55.4		47.3		41.7	
Other / multi	54.5		61.6		46.5	
Education						
<HS or HS	43.9	<0.001	34.4	<0.001	31.5	<0.001
Some college	46.6		46.7		48.1	
College+	64.2		64.7		61.3	
Partisanship						
Democrat	64.5	<0.001	60.2	<0.001	63.4	<0.001
Independent	48.2		65.8		37	
Republican	37.7		29.7		29.4	
Racial disparity						
Race						
White	53.9	0.478	47	0.007	44.1	0.02
Black	48.8		59.5		55.3	
Hispanic	47.1		38.8		33.1	
Other / multi	46.1		47.2		54.2	
Education						
<HS or HS	41.1	<0.001	34.3	<0.001	28.9	<0.001
Some college	48.7		44.9		43.4	
College+	64.2		63.2		62	
Partisanship						
Democrat	66.7	<0.001	57.1	<0.001	65.4	<0.001
Independent	38		60		24.3	
Republican	42.8		32.2		26.7	

* P-values from chi-squared tests of differences in disparities perceptions within that survey wave for that respondent characteristic.

national U.S. population. The University of Minnesota Institutional Review Board approved the study, determining it met criteria for exemption.

3. Results

Fig. 1 displays the distribution of agreement for the four types of disparities over time. Agreement with age and chronic illness disparities was high: >75% of respondents agreed with statements describing these disparities across all three waves. In contrast, agreement with income- and race-related disparities was lower; just above 50% in April 2020 and below 50% in the subsequent waves agreed that there are disparities in COVID-19 mortality between higher- and lower-income people and between White and Black people. Counter to expectations, following a year of abundant attention to COVID-19 disparities, there were no increases in agreement with racial disparities; nor were there increases in recognition of any of the disparity types. Levels of agreement with a given disparity type were statistically indistinguishable across the three waves, based on overlapping 95% confidence intervals (see Table 2).

Higher educational attainment was associated with more agreement with disparities (all p-values <0.001 at each time point and for all four disparities types) (see Table 3 for bivariate analyses). There were also differences by race, with White respondents having higher agreement with both age and chronic illness disparities across all three time points, but White respondents were no more likely than respondents of color to acknowledge income-based disparities. In August 2020 and April 2021 (but not April 2020), Black respondents had higher agreement with race-based disparities than did White respondents. Partisan differences in agreement were evident for the income- and race-based disparities across all three waves (all p-values <0.001), but we did not identify the same pattern of consistent partisan differences for the age and illness-related disparities. In each wave, Republicans reported lower agreement with both income- and race-based disparities, and Democrats reported higher agreement. Interestingly, Independents' recognition of these disparities varied; in August 2020, Independents' level of agreement was as high as that of Democrats, but in April 2021 their recognition fell between the partisan groups. Fig. 2 displays partisan differences in agreement between Republicans and Democrats across disparities types and over time, demonstrating the substantial partisan gap in agreement with income- and race-based disparities in particular.

In multivariable logistic regression models (Table 4), we found these partisan differences were statistically significant in April 2021 for income- and race-based disparities, even after adjustment for gender, age, income, education, race, information and media sources, and county-level COVID-19 rates, with Democrats significantly more likely to agree with these two disparities types relative to Republicans ($p <$ 0.001). Further, while Black non-Hispanic respondents were less likely to agree with age and chronic illness disparities than were White respondents, there were no racial differences in agreement with income and race disparities after adjusting for other covariates. Those with college or more education were much more likely to agree with income and race disparities, but not with disparities by age and chronic illness. Looking at the sources of information respondents reported in the past week, Fox News viewers were less likely to agree that there are income disparities, while those reporting getting information from the White House were more likely to agree with income disparities. Respondents who reported attending to health information sources (CDC, WHO, or state health departments) were significantly more likely to agree with all four types of disparities. Finally, those reporting getting their COVID-19 information from other people were less likely to agree that there are racial disparities in COVID-19 mortality.

4. Discussion

Our findings show stability in public agreement during 2020 and early 2021 that COVID-19 has had a disproportionate impact on mortality for older people and those with pre-existing chronic illnesses. Surprisingly, we also saw stability in the much lower levels of reported agreement that COVID-19 has had a disproportionate impact on lower-income people and Black people, in spite of attention to COVID-19 health disparities by public health entities and news media (Xu et al., 2022). The survey data also showed that opinions about mortality disparities are politically patterned, but only for those disparities that are related to social characteristics (income and race) and not age or chronic illness disparities. The finding that Democrats are more attuned to racial and socioeconomic disparities than are Republicans is consistent with

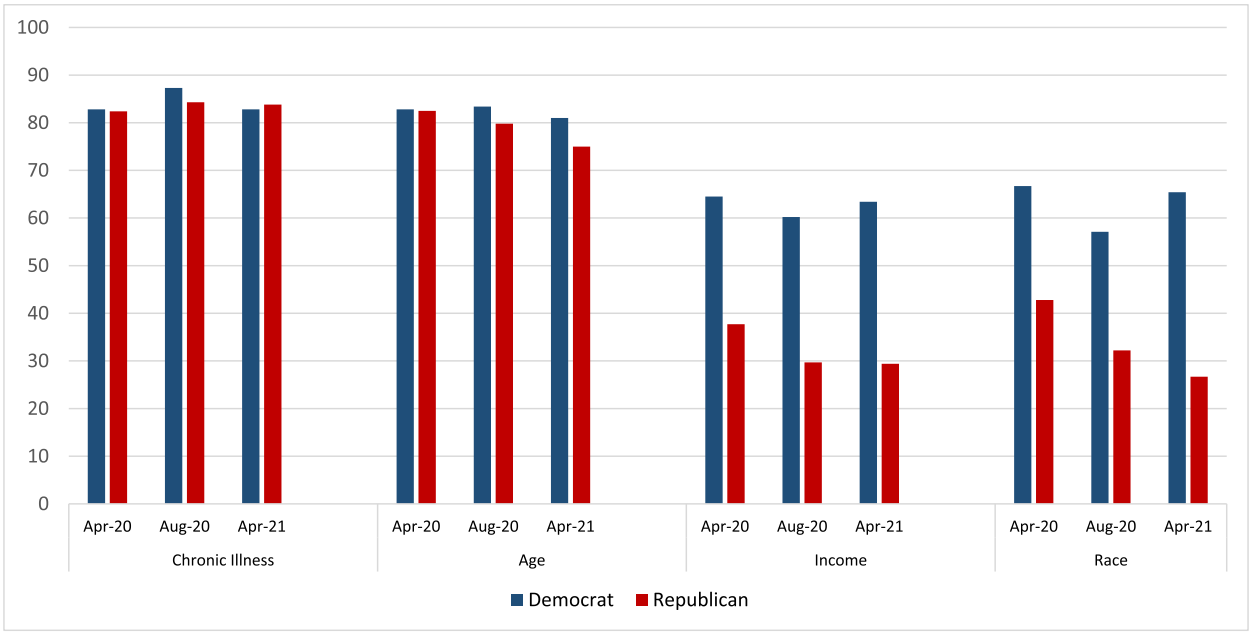

Fig. 2. Agreement with COVID-19 Mortality Disparities, by Type of Disparity and Political Party Affiliation (April 2020, August 2020, April 2021).
Note: Figure shows percent agreement with each type of disparity (chronic illness, age, income, and race) by respondent political party (excluding Independents) over the three time points. Please see Table 3 for the proportions and Chi-square tests of significance for the bivariate distributions for this Figure.

existing work (Booske et al., 2011; Bye et al., 2016; Gollust et al., 2020; Gollust and Cappella, 2014). Also consistent with previous work (Booske et al., 2011; Bye et al., 2016; Towe et al., 2021), we observed an educational gradient, with those of higher educational attainment more likely to recognize social disparities in COVID-19 mortality.

Looking at the results in more depth, there are a few findings worth noting that are distinct to this study. First, the responses of Independents did not consistently fall between that of Republicans and Democrats (unlike in measures of other COVID-19 related attitudes, where Independents tend to have "middle" views, see Golos et al., 2022; Barry et al., 2021). Instead, in our study we observed that Independents shifted toward greater agreement with both income-based and race-based disparities in August 2020 compared to April 2020, which could be suggestive of knowledge gains following attention to these disparities in the information environment. Republicans did not see the same gains, potentially because of motivated resistance to information about disparities (e.g., Strickland et al., 2011). However, by the third time point, Independents' views again fell in between those of the partisan groups, suggesting more work is needed to understand the extent to which health equity-related messages convey partisan signals, and whether and how political Independents respond to these (see, e.g., Klar and Krupnikov, 2016). Finally, we note that respondents commonly selected the response "neither agree nor disagree", particularly for the income and race disparities (between 25% and 35% of respondents chose this response). This could be because of ambivalence, discomfort with the idea of "agreeing" with disparities (which may conflate knowledge of disparities with attitudes), or other unobserved personality attributes. Recent survey methods research indicates that respondents who select this option when it is available in Likert scales are not just "satisficing" to get through the survey, nor do they exhibit systematic differences in education or motivation to respond (Truebner, 2021). Considered together, our results indicate that more research is needed on strategies to measure public recognition of health inequities. For example, it may be worth testing more covert ways of assessing disparities awareness to guard against social desirability bias and other potential threats (see, e.g., research on racial prejudice (Goldman, 2012)).

We acknowledge some additional study limitations. First, in order to maintain consistency in wording over time, we used the language of "die of complications from COVID-19," which was the language used in the earliest stage of the pandemic (when we drafted the items in Spring 2020) to describe how people die from conditions that result from the coronavirus, such as from organ failure or respiratory failure (Elezkurtaj et al., 2021). However, this wording could have been a source of confusion for respondents at the later time points, when colloquially mortality was often described as "die from COVID-19." We also only asked about four types of mortality differences, but there are other types of COVID-19-related disparities that are worth recognizing, including disparities in health literacy (McCaffery et al., 2020) as well as for groups not measured here, such as disproportionate mortality for American Indian and Alaskan Native populations (Arrazola et al., 2020). Related, these items are a narrow and incomplete assessment of public understanding of health equity generally, and we acknowledge that other work has suggested modest growth in the U.S. public's recognition of the role of race and racism in health over the past year. For instance, a synthesis of public opinion results conducted by the Commonwealth Fund identified increasing recognition of racial inequity in 2020 compared to previous time points; they found, however, that still only 42% of respondents in 2020 acknowledged that Black people are treated less fairly than White people in health care (under the 50% threshold that our study revealed as well) (Schneider et al., 2021).

Second, our survey questions were silent on the *causes* of these mortality differences, yet much research attention in public health has focused on the role of structural racism in shaping these inequitable outcomes (Bailey et al., 2021). It is not clear what causal explanations the public ascribes to COVID-19 disparities in mortality, although recent research suggests most people believe individual factors, not structural, influence health (Towe et al., 2021). Third, while we asked about a range of possible information sources, we did not query respondents about social media sources in particular, so it is unknown how information access via social media might relate to understanding of health disparities, which is an important avenue for future research. Fourth, we leveraged three cross-sectional national surveys in this study; a panel design (following the same individuals) would better measure individual-level change in recognition over time. Because we used three cross-sections and not a panel, there were also some compositional differences observed across the waves, including on party affiliation,

Table 4
Characteristics predicting agreement with group disparities in COVID-19 mortality, from multivariable logistic regression analysis, April 2021.

	Age	Chronic illness	Income	Race
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Male (ref: Female)	1.29 (0.82–2.02)	1.54 (0.98–2.41)	1.67* (1.13–2.46)	1.01 (0.68–1.50)
Age				
30–44 (ref: 18–29)	0.86 (0.44–1.66)	0.91 (0.45–1.81)	0.64 (0.35–1.17)	1.60 (0.92–2.81)
45–59 (ref: 18–29)	0.81 (0.39–1.68)	0.77 (0.38–1.54)	0.56 (0.29–1.06)	1.50 (0.81–2.78)
60+ (ref: 18–29)	0.84 (0.41–1.71)	1.04 (0.49–2.22)	0.87 (0.46–1.66)	2.40** (1.36–4.24)
Race/ethnicity				
Black, non-Hisp (ref: White)	0.49* (0.25–0.97)	0.36** (0.18–0.71)	0.94 (0.48–1.82)	1.08 (0.55–2.10)
Hispanic (ref: White)	0.58 (0.33–1.04)	0.46* (0.25–0.85)	0.82 (0.47–1.45)	0.68 (0.37–1.23)
Other/multi (ref: White)	0.85 (0.37–1.96)	0.80 (0.37–1.75)	0.67 (0.33–1.37)	1.62 (0.89–2.93)
Education				
Some college (ref: ≤HS	1.28 (0.79–2.08)	1.42 (0.85–2.36)	2.09** (1.29–3.40)	1.62* (1.01–2.62)
College or more (ref: ≤HS	1.17 (0.68–2.01)	1.45 (0.81–2.61)	2.75*** (1.63–4.62)	2.43** (1.40–4.19)
Income				
$30 K to 59 K (ref: <$30 K)	1.33 (0.75–2.37)	1.38 (0.75–2.54)	0.91 (0.52–1.60)	1.55 (0.92–2.62)
$59 K to 100 K (ref: <$30 K)	1.58 (0.82–3.05)	1.45 (0.72–2.90)	1.06 (0.58–1.94)	1.54 (0.84–2.82)
$100 K+ (ref: <$30 K)	2.44* (1.24–4.80)	1.74 (0.85–3.54)	1.00 (0.54–1.86)	1.38 (0.76–2.52)
U.S. Census region				
Midwest (ref: Northeast)	0.70 (0.35–1.39)	0.94 (0.42–2.13)	1.07 (0.59–1.93)	0.65 (0.36–1.15)
South (ref: Northeast)	0.71 (0.36–1.40)	0.94 (0.44–1.99)	1.02 (0.58–1.80)	0.80 (0.47–1.36)
West (ref: Northeast)	0.81 (0.39–1.70)	1.02 (0.46–2.27)	1.96* (1.08–3.59)	1.00 (0.56–1.78)
Political affiliation				
Democrat (ref: Republican)	1.23 (0.68–2.25)	0.92 (0.45–1.84)	2.93*** (1.79–4.79)	4.38*** (2.72–7.06)
Independent (ref: Republican)	0.95 (0.51–1.76)	0.50* (0.26–0.95)	1.51*** (0.82–2.79)	1.04 (0.58–1.88)
Death rate Q2 (ref: Q1)	0.81 (0.42–1.57)	1.05 (0.54–2.06)	1.24 (0.74–2.10)	0.97 (0.57–1.65)
Death rate Q3 (ref: Q1)	0.66 (0.35–1.25)	0.80 (0.43–1.52)	0.58 (0.34–1.01)	0.60 (0.36–1.01)
Death rate Q4 (ref: Q1)	0.74 (0.38–1.46)	1.61 (0.78–3.32)	1.28 (0.73–2.34)	0.98 (0.56–1.70)
Information sources, past week				
Fox	1.09 (0.61–1.94)	0.80 (0.42–1.54)	0.53* (0.32–0.87)	0.97 (0.57–1.65)
Cable news	1.37 (0.81–2.31)	1.17 (0.67–2.06)	1.24 (0.78–1.97)	1.43 (0.92–2.22)
National news	1.34 (0.82–2.20)	1.04 (0.61–1.80)	1.28 (0.84–1.95)	1.25 (0.83–1.87)
Local news	1.24 (0.77–2.00)	1.86* (1.10–3.14)	1.20 (0.80–1.80)	1.31 (0.88–1.95)
State governor	1.02 (0.59–1.76)	1.00 (0.54–1.88)	0.92 (0.60–1.40)	1.20 (0.80–1.82)
White house	0.98 (0.51–1.87)	1.49 (0.73–3.03)	1.92* (1.13–3.27)	1.16 (0.73–1.86)
Health sources	2.99*** (1.90–4.72)	2.97*** (1.82–4.83)	2.17** (1.40–3.37)	2.65*** (1.68–4.17)
Other people	1.31 (0.79–2.17)	0.88 (0.53–4.62)	0.87 (0.56–1.34)	0.59* (0.37–0.93)
N	1005	1005	1003	1004

Note: Table shows odds ratios and 95% confidence intervals in parentheses. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. Outcome is the dichotomous measure of agreement with the disparity type. "Ref" refers to the reference group for categorical variables. "HS" refers to high school.

with fewer Independents after wave 1 (and our wave 2 measure of party affiliation was not asked concurrently with the survey, but was provided as panelist data). While these differences in party affiliation are aligned with those observed in other national samples (Gallup, for instance, notes differences in party reporting of 5–7% over the year 2021 (Summers, 2022)), it is also worth noting that survey respondents generally tend to be more politically interested than the general public (Tourangeau et al., 2010), which could contribute to the partisan polarization in responses observed here.

5. Conclusions

Our findings suggest that communicating about COVID-19 inequities may not contribute to a widespread growth of understanding among the U.S. public, and that there may be particular barriers to recognition among Republicans. The low levels of "agreement" overall, and particularly among Republicans, suggest either a lack of awareness or acceptance of these disparities, a distinction we are unable to resolve with these data. Lack of awareness could be due to lack of dissemination of COVID-19 health inequities in information channels to which Republicans attend (see, for instance, our finding in this study of lower recognition of income-related disparities in 2021 among Fox News viewers), while lack of acceptance could be due to biases in information processing. It has been well-established in research on motivated reasoning that partisan differences in information processing – including not accepting or counterarguing information – can emerge when there is conflict between a message and a predisposing worldview (e.g., Strickland et al., 2011), such as beliefs about social inequalities (Kluegel and Smith, 1986). Research is needed to more fully examine the origins and consequences of politically-patterned understandings of COVID-19 inequities, as research about politically-patterned beliefs in health misinformation has begun to accumulate (see, e.g., Motta et al., 2020). Further, researchers have argued that COVID-19 communication – and communication research – should focus more squarely on equity issues (Viswanath et al., 2020). While we agree with this, we note that additional research must attend to the potential for backlash to health equity-related messages (see, e.g., Skinner-Dorkenoo et al., 2022). In sum, future work should examine the various strategies to communicate about health disparities, the effects of communication about health inequities in COVID-19 on public understanding of disparities, and ultimately the effects of such messaging strategies on public support, whether positive or negative, for policy strategies to advance health equity.

CRediT authorship contribution statement

Sarah E. Gollust: Conceptualization, Writing – original draft, Writing – review & editing, Formal analysis. **Erika Franklin Fowler:** Writing – review & editing. **Rachel I. Vogel:** Methodology, Writing – review & editing. **Alexander J. Rothman:** Writing – review & editing. **Marco Yzer:** Writing – review & editing. **Rebekah H. Nagler:** Conceptualization, Data curation, Writing – review & editing, Funding acquisition.

Declaration of Competing Interest

The authors have no conflicts of interest to report.

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