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Dual Pandemics of COVID-19 and Systemic Racism: The Roles of Perceptions of Inequities,
Civic Values, and Conservatism in Mask-Wearing Behavior

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Author Note

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Abstract

Amid unprecedented political polarization, the US continues to grapple with the simultaneous crises of COVID-19 and structural racism. We examine potential predictors of COVID-19 mask-wearing at the intersection of these crises, with particular attention to the behavior of conservatives and young people, who have resisted compliance with efforts to contain the spread of COVID-19. Specifically, we investigate perceptions of racial/ethnic inequities in the healthcare system and civic values as predictors of COVID-19 mask-wearing frequency and potential moderators of the relationship between political orientation and COVID-19 mask-wearing frequency. Diverse college students at a university in southern California participated in our longitudinal survey, which was initiated prior to the COVID-19 pandemic ($N = 431$). We found that perceptions of inequities and civic values predicted mask-wearing, whereas political conservatism was negatively related to mask-wearing. Further, conservative participants were more likely to wear masks if they reported greater perceptions of inequities. Our results provide a foundation for future research that may inform targeted public health interventions aimed at encouraging responsible COVID-19 behavior and fostering dialogue on structural inequities in a contentious political environment.

Keywords: COVID-19; face masks; political ideology; conservatism; perceptions of inequities; racial/ethnic disparities; civic values

ASAP keyword categories: health and behavior; racism; sociopolitical attitudes

Introduction

In 2020, the “dual pandemics” of COVID-19 and systemic racism dominated Americans’ collective consciousness, exacerbated by contentious political polarization between liberals and conservatives (Druckman et al., 2021; Hout & Maggio, 2021). COVID-19 mask-wearing and Black Lives Matter protests have become political flashpoints, with the dominant conservative narrative opposing mask-wearing (Kerr et al., 2021) and challenging evidence of systemic racism (Schaffner, 2020). Grounded in Jost and colleague’s (2003) theory of motivated social cognition, we investigate effects of conservatism, perceptions of inequities, and civic values on COVID-19 mask-wearing behavior. Although understanding the psychological functions of political ideology that underpin mask-wearing is necessary for effectively implementing public health policy and maintaining productive political dialogue, research on the topic remains sparse.

Although increased political polarization in the US has coincided with greater uniformity of conservative and liberal ideologies (Dimock et al., 2014), heterogeneity manifests on both the left and the right. Nuances in political beliefs and values may partially explain COVID-19 mask-wearing among conservatives. We examine two factors, perceptions of inequities in the healthcare system and civic values, as potential predictors of mask-wearing that may interact with political ideology. First, communities of color have been disproportionately burdened with high rates of COVID-19 infection and mortality (Lopez, Hart, & Katz, 2021), a painfully clear manifestation of the tragic intersection of the dual pandemics of COVID-19 and systemic racism. Public opinion remains divided in acknowledging racial inequities in health care (Carman et al., 2021), largely along political lines (Gollust et al., 2020). The degree to which perceptions of inequities in the health care system are associated with responsible COVID-19 behavior is not well understood, especially in relation to political ideology. Second, public health messaging has

framed COVID-19 mask-wearing in terms of social responsibility to protect the most vulnerable from infection (Kaufman, 2020). We explore the potential link between civic values and COVID-19 mask-wearing, with attention to variance in political orientation.

We leverage a longitudinal study of diverse college students, initiated prior to the COVID-19 pandemic. The university, primarily a commuter institution, is located in a diverse and historically conservative-leaning county, which provides variance in political orientation. College students provide unique affordances for studying perceptions of inequities and civic values in relation to COVID-19 mask-wearing. Individuals who pursue higher education may be more likely to acknowledge inequities than the general public, regardless of political orientation (Carman et al., 2021). Young people are typically at much lower risk from COVID-19 (CDC, 2021) and their adherence to prevention guidelines may be driven by a sense of social responsibility (Oosterhoff et al., 2020). Consequently, college students may provide unique insight into the relationship between COVID-19 mask-wearing, perceptions of inequities, and civic values that could provide an initial foundation for broader studies. We begin by positioning COVID-19 behavior within a political perspective, then we sequentially discuss literature on perceptions of inequities and civic values before describing our sample and study design.

COVID-19 mask-wearing and political ideology

The COVID-19 responses of Americans have diverged along ideological lines, with conservatives much less likely to wear face masks than liberals (Allcott et al., 2020; Wu & Huber, 2020). Face masks have become a political symbol, commonly interpreted as a sign of liberalism (Yeung, Lai, & Luo, 2020). Ideologically-driven differences in COVID-19 beliefs and perceptions are captured succinctly in the media headline: “red and blue America aren’t experiencing the same pandemic” (Brownstein, 2020, cited in Conway, Woodard, et al., 2020).

Consistent with the work of Jost and colleagues (2003), we explore underlying political beliefs and values as potential explanations of variance in COVID-19 behavior by conceptualizing ideology as motivated social cognition.

Conway, Woodard, Zubrod, and Chan (2020) investigated attitudes towards COVID-19 and found that beliefs and values aligned with conservative ideology (e.g., negative attitudes towards government restrictions) were linked to lower perceived threat (despite conservatives' predisposition towards perceived threat, Crawford, 2017; Jost et al., 2003), which may partially explain lower rates of mask-wearing among conservatives. However, self-identified conservatism is heterogeneous and some values or beliefs may be more salient than others depending on each individual's particular lived experience (Kerr et al., 2021). Some conservatives may wear a mask due to a higher disease burden in their particular community, whereas others may choose to wear a mask due to a sense of religious altruism or civic duty. Beliefs about the relative COVID-19 burden and vulnerability experienced by different groups of people may be related to COVID-19 behavior. For example, using a nationally representative sample, Hearne and Niño (2021) found that Black, Latinx, and Asian adults were more likely to wear masks than White individuals, regardless of political orientation.

Perceptions of inequities in the healthcare system

Communities of color have borne the brunt of the COVID-19 pandemic, with greater rates of infection, hospitalization, and death among Black, Latinx, and Asian people than White people (Lopez, Hart, & Katz, 2021). The prevalence of COVID-19 in communities of color may be partially responsible for higher rates of COVID-19 mask-wearing across minority groups (Hearne & Niño, 2021). However, the mechanisms through which mask-wearing may be linked to recognition of inequities in healthcare are unclear. We aim to understand beliefs that may

encourage responsible public health behavior, particularly among conservatives, which could prevent unnecessary illness and death in our current political climate (Druckman et al., 2021; Gollwitzer et al., 2020).

Racial and ethnic disparities in public health have been persistent throughout US history, culminating in a wide array of inequities in health and healthcare (Bailey & Moon, 2020; de Valpine & Lewis, 2021; Gee & Ford, 2011). People of color have been disproportionately burdened with health risk factors while having constrained access to, and lower quality of, healthcare (CDC, 2020a; Nelson, 2002). Public health inequities are attributable to systemic racism (Graham et al., 2011; Williams & Cooper, 2020; Viruell-Fuentes et al., 2012), yet conservatives largely reject the notion. Even among Black, Latinx, and Asian adults, denial of racism is one of the strongest predictors of conservative political orientation (Alamillo, forthcoming). However, persistent inequities in public health and the healthcare system have become glaringly clear during the COVID-19 crisis (Egede & Walker, 2020), which may lead some conservatives to acknowledge disparities.

Amid the obviously uneven distribution of COVID-19 infections, some conservatives may hold perceptions of inequities without compromising with their conservative ideology. As illustrative examples, a conservative individual may recognize racial and ethnic differences within a framework of colorblind meritocracy (Bonilla-Silva, 2020) or they may maintain their political identity by emphasizing other conservative beliefs and values (Davis et al., 2016). In contrast, other self-identified conservatives may find that their perception of inequities is incongruent with mainstream conservative narratives, from which they may selectively deviate. In either case, perceptions of inequities in public health may be associated with increased COVID-19 mask-wearing through multiple mechanisms. Notably, people who live in diverse

communities and recognize racial and ethnic inequities may perceive higher vulnerability for themselves (or their fellow community members). Greater perceived vulnerability has been associated with responsible COVID-19 behavior (Latkin et al., 2020), both for conservatives and liberals (Druckman et al., 2021). Awareness of inequities may underlie a sense of civic duty that motivates individuals to do their part to combat COVID-19.

Civic values

Throughout the COVID-19 pandemic, medical leaders touted mask-wearing as a necessary measure to protect the most vulnerable members of society (Kaufman, 2020), particularly the elderly (CDC, 2021). Efforts to “flatten the curve” through COVID-19 protocols required broad collective action at a distance (Roberts, 2020). Some individuals may frame mask-wearing as a form of civic engagement due to underlying prosocial, collaborative, and altruistic motivations.

Studies have found that perceived civic duty predicts responsible COVID-19 behavior (Bourgeois et al., 2020). Compliance with COVID-19 guidelines has been linked to general civic norms (e.g., voter turnout, Bai et al., 2020) and has been found to be higher in areas where individuals are more engaged in community activities or willing to contribute to the common good (Ding et al., 2020). Research relating civic constructs to COVID-19 behaviors are typically framed within social capital frameworks (Barrios et al., 2021; Durante et al., 2021). We employ a psychological perspective that is congruent with Jost et al.’s (2003) motivated social cognition approach to political ideology. Generally, participation in civic activities has been related to attainment value -- the perceived importance of a task for an individual (Liem & Chua, 2013; Martin & Van Deth, 2007). A sense of social responsibility and desire to protect others has been identified as a motivation for adolescents’ adherence to COVID-19 recommendations

(Oosterhoff et al., 2020). Civic values may be stronger predictors of COVID-19 behavior among young people, as they are at lower risk of severe disease themselves (Bhopal, 2021). We expect civic values to predict COVID-19 mask-wearing among college students, although the relationship may depend on political ideology.

Independent of political orientation, individuals who hold a sense of civic duty have been found to be more likely to adhere to COVID-19 guidelines than those who do not (Barrios et al., 2021; Durante et al., 2021). However, the link between civic values and COVID-19 mask-wearing is not well understood for conservatives, as civic values may differentially predict civic behaviors for conservatives and liberals. For instance, civic engagement may be more likely to be motivated by religious affiliation for conservatives than liberals (Lewis et al., 2013). Alternatively, mask-wearing may align with other conservative principles, such as service to one's country or compliance with local authority. Features of conservatism may conflict with civic values or collective responsibility; individualism has been related to lower civic duty and mask-wearing (Bazzi et al., 2021). In light of competing principles, it is unclear how civic values may interact with political ideology in relation to COVID-19 behaviors. Investigating the underlying civic motives of mask-wearing may inform public health approaches that support responsible COVID-19 behaviors among conservatives.

The present study

The present study examines conservatism, perceptions of inequities, and civic values as predictors of COVID-19 mask-wearing among undergraduate students at a large public university in southern California. Nationwide, rates of mask-wearing are lowest among adults aged 18-30 (CDC, 2020b) and predictors of mask-wearing are not well understood among young people, partially because research has prioritized groups that are at greater risk of contracting

severe disease (Van Dyke et al., 2021). However, college-aged individuals play a disproportionate role in community spread of COVID-19 (CDC, 2020c) and targeted strategies to encourage compliance with guidelines could reduce cases among more vulnerable groups.

Several factors make college students a particularly suitable population for our current research. Generally, college-educated individuals have greater awareness of racial/ethnic inequities (Horowitz et al., 2019), which may make perceived inequities more salient in mask-wearing decisions. College-age youth may be less likely to wear a mask due to reduced risk of contracting severe disease from the virus compared to other age groups (Bhopal, 2021), and accordingly, those who do wear masks may be more motivated by a sense of social responsibility than self-preservation. The prevalence of civic engagement is typically higher among college students than other groups (Flanagan & Levine, 2010), which may lead to an increased predictive effect for civic values on mask-wearing.

The study site is located in Orange County which provides unique contextual affordances, especially considering that the majority of students commute. Orange County is historically a conservative county, with 20% of the young voters (aged 18 to 34) registered as Republicans in 2019 (Desidario, 2019). As a result, there may be greater variance in political orientation than might otherwise be expected at a research university. Orange County is also one of the most diverse counties in the country and the student body of the university is correspondingly diverse. The prevalence of COVID-19 infections has been disproportionately higher in predominantly low-income communities of color (Field, 2021) and awareness of diverse experiences of the pandemic may facilitate awareness of COVID-19 inequities.

We chose an exploratory approach to investigate whether perceptions of inequities and civic values moderated the relationship between conservatism and mask-wearing. Leveraging

our sample of college students, our study was guided by three research questions and two sub-questions:

RQ1. Does conservatism predict COVID-19 mask-wearing among college students?

RQ2. Do perceptions of inequities in the healthcare system predict COVID-19 mask-wearing?

RQ2a. Do perceptions of inequities in the health care system moderate the relationship between conservatism and COVID-19 mask-wearing?

RQ3. Do civic values predict COVID-19 mask-wearing?

RQ3a. Do civic values moderate the relationship between conservatism and COVID-19 mask-wearing?

Regarding the first research question, we expected that conservatism would be negatively associated with mask-wearing. Regarding the second and third research questions, we expected that both perceptions of inequities and civic values would predict COVID-19 mask-wearing. We primarily used OLS regression models to examine our hypotheses.

Methods

Participants

We used data from an ongoing longitudinal study at a large public university in southern California. The study, approved by the university's Institutional Review Board (#HS 2018-4646), was designed to measure undergraduates' experiences, academic success, and personal development over the course of two years. In summer 2019, all undergraduates who started their freshman or junior year were invited to participate. A convenience sample of 1,266 diverse undergraduate students consented to participate. Data collection started in September 2019, prior to the start of classes, and continued with repeated surveys. In the current manuscript, we used

data from two surveys: 1) our initial survey administered in September 2019 that included measures of students' political orientation, civic attitudes, and questions about students' backgrounds, and 2) our COVID-19 survey administered in July 2020 that captured students' experiences with the ongoing COVID-19 pandemic and the Black Lives Matter Movement.

The final sample for the present study consisted of students who participated in both surveys and were US residents ($N = 431$). The sample was mostly female (70%) and diverse in terms of students' racial and ethnic backgrounds (48% Asian/Asian American, 30% Hispanic, 17% White non-Hispanic, 3% from other racial/ethnic groups, and 2% did not specify). Half of the students were the first in their families to attend college. The sample broadly represented the composition of the entire population of freshmen and juniors at the study site, with moderate oversampling of female students (see Table 1).

Measures

Mask-wearing frequency. COVID-19 mask-wearing frequency was measured with one item in a survey that was administered in July 2020: "In your activities outside your home in the past 7 days, how often have you taken any of the actions below to prevent yourself from contracting or spreading COVID-19?" Mask-wearing was provided as one of the behaviors and students indicated frequency on a 5-point Likert Scale from "Never" to "All the time". The item was developed by the study research team, paralleling survey questions developed in other studies of COVID-19 (Chen et al., 2020).

Perceptions of inequities in the healthcare system. The survey administered in July 2020 included three items adapted from Cohen (2006) and Neville et al. (2000) to measure perceptions of inequities with the following prompts: 1) "To what extent does race play a role in the quality of social services (such as type of health care or day care) that people receive in the US?"; 2) To

what extent do you believe that people of color are treated less fairly than white people in the healthcare system?”; 3) “To what extent do you believe that people of color are treated less fairly than white people in the healthcare system?”. Students responded to each on a 7-point Likert scale. We used a mean score of the three items to generate an indicator of students’ perceptions of inequities in the healthcare system. The internal validity was satisfactory ($\alpha = 0.81$).

Civic attainment value. One item captured students’ civic attainment value in September 2019: “How important is it to you to volunteer in your community?” Students responded to this item using a slider scale from 0 to 100, “Not at all important” to “Most important”. The item was based on items developed in the Wabash National Study (Blaich et al., 2011).

Conservatism. In September 2019, one item asked students to characterize their political views on a slider scale from 0 to 100, with anchors “Completely liberal” and “Completely conservative” at the endpoints and “Equally liberal and conservative” at the midpoint. Similar unidimensional measures have been traditionally employed in studies of political ideology (Hibbing, Smith, & Alford, 2014; Jost, Federico, & Napier, 2009).

Demographic and educational controls. Information about students’ gender, first-generation college-going status, race/ethnicity, and college major was obtained from the university’s administrative data. We used separate binary indicators to represent gender and first-generation college-going status. We used a nominal variable to capture race/ethnicity across five categories: Asian/Asian American, Hispanic, White/non-Hispanic, other, and unspecified. (Because of very low numbers in our sample, Black, American Indian/Alaskan Native, and Pacific Islander were grouped into the “other” category.) Lastly, we created a nominal variable to classify students’ college major into six categories: social sciences; health, medical, and biological sciences; other STEM (science, technology, engineering, and math, excluding health,

medical, and biological sciences); business and economics; arts and humanities; and other/undeclared.

Missing data

We used multiple imputation to account for missing data for participants who did not complete all items in both surveys. Missingness of data ranged from 0% for gender and first-generation college status to 15% for conservatism. (See Table 2 for the un-imputed sample size for each variable.) The imputation model included all study variables as well as additional auxiliary variables from the dataset that were either theoretically implicated or at least moderately correlated with study variables. Following established practices, 30 analysis datasets were created using chained equations (MICE; see White, Royston, & Wood, 2011). This approach allowed separate conditional distributions for each imputed variable, which was suitable for our dataset because several variables were not normally distributed. The study analyses involved pooling parameter estimates from statistical tests on each of the imputed datasets to yield a single set of results.

Procedure

First, we investigated the descriptive statistics and zero-order correlations between all study variables (Table 2). Next, we used OLS regressions to examine the relationships between our key predictors (conservatism, perceptions of inequities in the healthcare system, and civic attainment value) and COVID-19 mask-wearing frequency (Table 3), controlling for gender, first generation college student status, race, grade level, and college major. All continuous variables were standardized. We began by estimating separate models for each predictor, then we paired conservatism with perceptions of inequities and civic attainment value. Lastly, we tested two

regression models with interaction terms: 1) conservatism multiplied by perceptions of inequities, and 2) conservatism multiplied by civic attainment value.

Results

Descriptive statistics and correlational analyses of study variables are presented in Table 2. On a 5-point scale, average mask-wearing frequency was near the maximum of the range (4.80), just below the anchor corresponding to “all of the time”. Students identified as politically left of center, on average. Mask-wearing frequency was negatively correlated with conservatism ($r = -0.13, p = .013$) and positively correlated with perceptions of inequities in the healthcare system ($r = 0.15, p = .002$) and civic attainment value ($r = 0.24, p < .001$). Conservatism was negatively correlated with perceptions of inequities ($r = -0.32, p < .001$) but had no statistically significant association with civic attainment value ($r = -0.03, p = .618$). Perceptions of inequities were positively correlated with civic attainment value ($r = 0.25, p < .001$).

Results of OLS regression models are displayed in Table 3. First, we examined conservatism and perceptions of inequities in the healthcare system. As a sole predictor (with controls), conservatism negatively predicted mask-wearing frequency (model 1, $\beta = -0.13, p = .014$). In contrast, perceptions of inequities positively predicted mask-wearing frequency (model 2, $\beta = 0.14, p = .013$). No main effects were evident when conservatism and perceptions of inequities were included in the same model (model 3). However, when we added an interaction term between conservatism and perceptions of inequities, the moderation effect was significant (model 4, $\beta = 0.12, p = .037$) and conservatism negatively predicted mask-wearing frequency (model 4, $\beta = -0.12, p = .037$). The interaction effect indicates that participants with a conservative political orientation were more likely to engage in mask-wearing if they also perceived inequities in the healthcare system.

Next, we conducted regression models to investigate civic attainment value. As a sole predictor (with controls), civic attainment value positively predicted mask-wearing frequency (model 5, $\beta = 0.24$, $p < .001$). The coefficient remained unchanged after conservatism was added to the regression model and conservatism negatively predicted mask-wearing frequency (model 6, $\beta = -0.13$, $p < .001$). The main effects persisted when an interaction term between conservatism and civic attainment value was added to the model, but no moderation was observed (model 7).

College major was the only statistically significant control across all of the models. Relative to students who pursued arts and humanities majors, being in a STEM major other than health, medical, biological sciences negatively predicted frequency of mask-wearing. Similarly, students who were undeclared (or pursuing less common majors that did not fit within the categorization scheme) were less likely to wear masks, relative to arts and humanities majors.

Discussion

The present study advances understanding of COVID-19 mask-wearing behavior by examining perceptions of inequities and civic values as potential levers that can be used to encourage compliance with COVID-19 recommendations among conservatives and young people. Consistent with existing literature (Allcott et al., 2020; Wu & Huber, 2020), we found that conservative political orientation negatively predicted COVID-19 mask-wearing. In contrast, perceptions of inequities in the healthcare system and civic values were positively related to mask-wearing, as we expected. Further, the effect of conservatism on mask-wearing was moderated by perceptions of inequities. Our exploratory investigation also yielded evidence of demographic differences that may be useful for future research. In turn, we discuss our findings

regarding perceptions of inequities, potential demographic differences, and civic values, then we briefly describe the limitations of our study and propose directions for future work.

Scholars have framed structural racism and COVID-19 in terms of “dual pandemics” (e.g., Brodie et al., 2021; Espina & Narruhn, 2021), but the intersection between these crises has been underexplored. Our study examines perceptions of inequities in the healthcare system as a potential mechanism that links disparities in public health to COVID-19 behavior. We found that individuals who identified as conservative were more likely to wear masks if they acknowledge racial and ethnic inequities in the healthcare system compared to those who did not recognize disparities. Multiple interpretations are possible. Perhaps some conservatives were inclined to selectively endorse beliefs regarding equity and COVID-19, more akin to political independents than mainstream conservatives (de Bruin et al., 2020). Alternatively, some conservatives may perceive greater vulnerability to COVID-19 than others, possibly attributable to living in a diverse community. Lastly, and perhaps optimistically naïve, lessons learned during the COVID-19 pandemic may have raised awareness of inequities among conservatives, which could provide the foundation for dialogue about broader racial and ethnic disparities.

Preliminary investigations of demographic differences may clarify interpretations of mask-wearing. The moderation effect between perceptions of inequities and conservatism was only statistically significant for White students, not for Latinx or Asian students, despite statistically equivalent average levels of conservatism and perceptions of inequities (see Table A1 in the appendix for a presentation of mean-level differences in study variables by demographic group). Awareness of the disproportionate impact of COVID-19 on the poor has been found to alter the attitudes of some White people towards poverty and inequality (Wiwad et al., 2021). Similarly, beliefs about racial and ethnic disparities may also precipitate a shift in

COVID-19 attitudes and behaviors. Consistent with critical conceptualizations of race and ethnicity, perceptions of inequities may function differently for White conservatives than conservatives of color. That is, in systems of oppression, inequities privilege the dominant groups, and recognition of these inequities often yields different psychological implications for people of color than White people (Lowery et al., 2007; Knowles & Lowery, 2012). However, our study cannot support conclusions about racial and ethnic differences, as our results are limited by ceiling effects in the mask-wearing outcome. (The results may have only emerged in our sample for White students because statistically lower mean levels of mask-wearing compared to Latinx and Asian students provided greater variance that enabled more robust detection of effects in White students.) Regardless, our findings suggest that an important direction for future COVID-19 research would be to examine the extent to which demographic differences in COVID-19 behavior may be attributable to political beliefs or values.

We also found evidence that civic values predicted COVID-19 mask-wearing, complementing recent studies on civic capital and duty (Barrios et al., 2021; Bourgeois et al., 2020; Durante et al., 2021). Contrary to our expectations, the association between civic values and mask-wearing was independent of political ideology. This suggests emphasizing civic responsibility may be a useful strategy to encourage both liberals and conservatives to wear masks. However, public health officials have employed this approach with limited effectiveness, indicating that advancements in understanding civic attitudes may result in improved outcomes. We suggest that targeted messaging aligned with ideological differences in civic values may be useful to reach groups resistant to mask-wearing (specifically, conservatives). This messaging may also benefit from simultaneously invoking associated social beliefs and values, such as perceptions of inequities. In our study, we found that civic values and perceptions of inequities

were moderately correlated, and further, additional exploratory analyses identified a statistically significant three-way interaction between conservatism, perceptions of inequities, and civic values. The complexity of interpreting the effect on COVID-19 mask-wearing was untenable given the limitations of our measures. More nuanced research is needed to examine the links between different types of civic values and COVID-19 behavior, as well as potential moderation by political orientation.

Our exploratory study has two substantial empirical limitations that constrain the robustness of our results, specifically regarding our sample and our measures. First, although our sample is particularly suitable to answer our research questions, college students are a unique group and findings may not be generalizable. Although our participants are diverse, few Black students are enrolled at the university where our surveys were administered. Understanding Black students' perceptions of inequities in relation to COVID-19 outcomes would be an important direction for future research. Further, political ideologies vary by social and geographic context (Conway, Chan, & Woodard, 2020), which may also constrain the sample. Conservatism within Orange County may be different from conservatism elsewhere due to its diversity and positionality within a historically liberal state (California).

As a second potential limitation, our surveys only measured conservatism at the one time point. Although research has demonstrated that political ideologies have stayed relatively stable across the pandemic (Rosenfeld & Tomiyama, in press), it is possible that some students who identified as conservative in fall 2019 later identified as liberal, rendering their support of mask-wearing consistent with their liberalism. Relatedly, investigating political beliefs and values may be improved with multidimensional measures of conservatism rather than a single unidimensional item (Everett, 2013; Feldman & Huddy, 2014). Similarly, future work should not

only use more robust measures of political ideology, but also more nuanced items regarding perceptions of inequities. For instance, experiences of the “dual pandemics” may be different for Asians than Blacks, which would be important to assess in order to avoid conclusions that inadvertently marginalize perspectives of some demographic groups (Young & Cho, 2021).

Conclusion

Our exploratory investigation advances several ideas that may contribute to the development of strategies that both encourage responsible public health behavior and increase awareness of inequities. Conservatives and young people have been responsible for a disproportionate share of the spread of the COVID-19 virus (CDC, 2020c; Rosenfeld, 2020) and understanding the mechanisms that underlie persistent resistance to mask-wearing may yield promising new approaches that are attentive to racial and ethnic discrepancies. Further, studying variance in conservatism may help shape policies that can foster dialogue across political parties and reduce polarization that has exacerbated the crises of COVID-19 and systemic racism. Both liberals and conservatives are inclined to practice responsible COVID-19 behavior when personally faced with the consequences of the virus (Druckman et al., 2021), but illness and suffering are not acceptable prerequisites to motivate responsible behavior. The formidable challenge of political gridlock is not a reasonable excuse for relinquishing aspirations for creating better policy solutions. Simultaneously researching the “dual pandemics” of COVID-19 and systemic racism may support novel policy approaches that are capable of alleviating inequities in disease burden beyond the pandemic. Although the present historical moment has uniquely exposed demographic and political differences, conducting research at the intersection of public health, systemic racism, and political ideologies will continue to be an important direction for scholarship and policymaking long after we can safely put aside our masks.

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Table 1

Descriptive statistics of the sample compared to all enrolled students

	Study sample		All recruited students		Entire population of freshmen and juniors at study site	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Female	303	70%	836	66%	7,868	54%
Race/ethnicity						
Asian/Asian American	206	48%	608	48%	7,868	54%
Hispanic	130	30%	405	32%	3,788	26%
White, non-Hispanic	73	17%	177	14%	1,894	13%
Other	13	3%	51	4%	437	3%
Missing	9	2%	25	2%	583	4%
First in family to attend college	232	54%	684	54%	6,994	48%
Enrolled as juniors	80	19%	271	21%	-	
College major						
Art and humanities	28	6%	-		-	
Social science	101	23%	-		-	
Health, medical, and biological sciences	141	33%	-		-	
Other STEM	80	19%	-		-	
Business and economics	17	4%	-		-	
Other/undeclared	64	15%	-		-	
<i>N</i>	431		1,266		14,570	

Note. Values shown are based on un-imputed data. The category representing other racial/ethnic groups includes Black, American Indian, Alaskan Native, and Pacific Islander.

Table 2

Correlations and descriptive statistics of study variables

	1	2	3	4	5	6	7
1. Female	1						
2. First in family to go to college	0.05	1					
3. Junior in college	0.03	-0.01	1				
4. Fall conservatism	-0.16*	-0.05	0.01	1			
5. Fall civic attainment value	0.16*	-0.03	-0.04	-0.03	1		
6. Summer perception of inequities	0.31*	0.11*	-0.02	-0.32*	0.25*	1	
7. Summer mask-wearing frequency	0.06	0.03	0.00	-0.13*	0.24*	0.15*	1
Mean	0.71	0.54	0.19	38.07	72.01	5.71	4.80
SD	0.46	0.50	0.39	18.78	19.53	1.32	0.59
Min	0	0	0	0	0	1	1
Max	1	1	1	100	100	7	5
<i>N</i>	431	431	431	361	365	427	431

Note. The values displayed are for the un-imputed dataset. All variables are unstandardized. For dichotomous variables, the mean represents the proportion of participants. For grade level, the indicator represents junior status and the reference category is freshman.

* $p < .05$

Table 3

Regression models predicting COVID-19 mask-wearing

	COVID-19 mask-wearing (standardized)						
	1	2	3	4	5	6	7
Fall conservatism	-0.13*		-0.11	-0.12*		-0.13*	-0.14**
	(0.05)		(0.06)	(0.06)		(0.05)	(0.05)
Summer perception of inequities		0.14*	0.10	0.08			
		(0.06)	(0.06)	(0.06)			
Conservatism X Summer perception of inequities				0.12*			
				(0.06)			
Fall civic attainment value					0.24***	0.24***	0.24***
					(0.06)	(0.06)	(0.06)
Conservatism X Fall civic attainment value							0.07
							(0.06)
Female	0.02	-0.02	-0.04	-0.04	-0.01	-0.06	-0.07
	(0.11)	(0.12)	(0.12)	(0.11)	(0.11)	(0.11)	(0.11)
First in family to attend college	-0.01	-0.01	-0.02	-0.01	0.03	0.02	0.02
	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
Race (Hispanic is reference)							
White non-Hispanic	-0.28	-0.28	-0.27	-0.24	-0.26	-0.24	-0.23
	(0.16)	(0.16)	(0.16)	(0.16)	(0.15)	(0.15)	(0.15)
Asian	-0.19	-0.18	-0.19	-0.20	-0.07	-0.08	-0.08
	(0.12)	(0.12)	(0.12)	(0.18)	(0.12)	(0.12)	(0.12)
Other	0.23	0.20	0.22	0.18	0.20	0.23	0.24
	(0.29)	(0.29)	(0.29)	(0.29)	(0.29)	(0.28)	(0.28)
Junior grade level (Freshmen is reference)	-0.08	-0.09	-0.07	-0.06	-0.05	-0.03	-0.03
	(0.14)	(0.14)	(0.14)	(0.14)	(0.13)	(0.13)	(0.13)
College major (Art and humanities is reference)							
Social science	-0.18	-0.24	-0.19	-0.16	-0.28	-0.23	-0.20
	(0.22)	(0.22)	(0.22)	(0.22)	(0.21)	(0.21)	(0.21)
Health/medical and biology	-0.26	-0.32	-0.26	-0.24	-0.39	-0.31	-0.29
	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)
Other STEM	-0.50*	-0.54*	-0.49*	-0.48*	-0.54*	-0.47*	-0.44
	(0.23)	(0.23)	(0.23)	(0.23)	(0.22)	(0.22)	(0.23)
Business and economics	-0.40	-0.46	-0.41	-0.39	-0.46	-0.39	-0.37
	(0.31)	(0.31)	(0.31)	(0.31)	(0.31)	(0.31)	(0.31)
Other/undeclared	-0.47*	-0.55*	-0.48*	-0.46	-0.60**	-0.50*	-0.47*
	(0.24)	(0.23)	(0.24)	(0.24)	(0.23)	(0.23)	(0.23)
Constant	0.45	0.52*	0.48*	0.49*	0.48*	0.43	0.41
	(0.23)	(0.23)	(0.23)	(0.23)	(0.23)	(0.23)	(0.23)
<i>N</i>	431	431	431	431	431	431	431
<i>R</i> ²	0.06	0.06	0.07	0.08	0.09	0.11	0.11

Note. Standardized coefficients for continuous variables are shown. Standard errors are displayed in parentheses. The category representing other racial/ethnic groups includes Black, American Indian, Alaskan Native, and Pacific Islander.

* $p < .05$, ** $p < .01$, *** $p < .001$

Appendix A. Ancillary analyses.

Table A1

Variable means, by race/ethnicity

	Range	Mean (SD)			
		Asian/Asian American	Hispanic	White, non- Hispanic	Other
Fall conservatism	[0, 100]	37.97(17.98)	36.87(19.38)	39.20(19.77)	40.00(22.72)
Fall civic attainment value	[0, 100]	68.10(20.39)	76.23(17.30)	74.79(19.11)	80.64(14.81)
Summer perception of inequities	[1, 7]	5.71(1.28)	5.86(1.23)	5.53(1.51)	5.97(1.40)
Summer mask-wearing frequency	[1, 5]	4.77(0.64)	4.88(0.41)	4.71(0.75)	5.00(0.00)
<i>N</i>		206	130	73	13

Note. All values are based on un-imputed data. The category representing other racial/ethnic groups includes Black, American Indian, Alaskan Native, and Pacific Islander.