Title: Partisanship, Health Behavior, and Policy Attitudes in the Early Stages of the COVID-19 Pandemic

Short Title: Partisanship, Health Behavior, and Policy Attitudes in the Early Stages of the COVID-19 Pandemic

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Abstract:

Objective
To study the U.S. public’s health behaviors, attitudes, and policy opinions about COVID-19 in the earliest weeks of the national health crisis (March 20-23, 2020).

Method
We designed and fielded an original representative survey of 3,000 American adults between March 20-23, 2020 to collect data on a battery of 38 health-related behaviors, government policy preferences on COVID-19 response and worries about the pandemic. We test the effect of partisanship on policy attitudes and behaviors, measured in three different ways: party affiliation, intended 2020 Presidential vote, and self-placed ideological positioning. Our multivariate approach adjusts for a wide range of individual demographic and geographic characteristics that might confound the relationship between partisanship and health behaviors, attitudes, and preferences.
Results

We find that partisanship—measured as party identification, support for President Trump, or left-right ideological positioning—is the most consistent factor that differentiates Americans' health behaviors and policy preferences. In further analyses, we find no consistent evidence that individual news consumption, the local policy environment, and local pandemic-related deaths explain the effect of individual level partisanship.

Conclusion

Our analysis of individual self-reported behavior, attitudes, and policy preferences in response to COVID-19 reveals that partisanship played a central role in shaping individual responses in the earliest months of the COVID-19 pandemic. These results indicate that partisan differences in responding to a national public health emergency were entrenched from the earliest days of the pandemic.

Introduction

The coronavirus (COVID-19) pandemic has affected nearly every aspect of economic, social and political life in the United States. This public health emergency emerged in a media environment saturated with misinformation, rancorous partisan infighting, and messaging from the President that undermined health experts and undercut national unity. As early as January, the administration downplayed its severity by comparing it to the seasonal flu, asserted that it was under control, and even described COVID-19 in racial terms (“Chinese” or “Wuhan” virus). Administrative missteps created further uncertainty, revealing severe mismanagement from the federal government and the Centers from the Disease Control (CDC), most prominently in the lack of nationwide test availability and reversing recommendations on face masking. And,
differences in mitigation strategies among state governors exposed the deeply political nature of public health responses (1).

In this conflicting and noisy informational environment, how do individuals interpret a novel public health threat such as COVID-19? Americans, on average, pay little attention to political news (2-4), but in times of high threat, news consumption increases as people seek out steps to mitigate and avoid threats to their physical health and safety (5). In a public health crisis, mass media provide health information in a very fast-moving environment (6) and mixed or poor health communication can increase risks to public health (7). When individuals are worried about the risk of diseases and outbreaks directly, they put their trust in medical experts more than political leaders and will undertake behavioral changes to lower their risk as well as support policies framed as increasing their safety(8). Self-interest does not always motivate political attitudes or decision-making, but in the face of salient threats that are explicitly connected to public policy, people will use their own experiences and interests to guide their attitudes and behaviors (9). The COVID-19 pandemic is an example of a policy area where we may expect that mediated or direct personal experience with the pandemic would drive respondent to follow steps to keep themselves, their loved ones, and their communities safe in the early stages given its salience and immediate and dramatic policy changes at the state and local level. However, the messages Americans received from the mass media about the coronavirus pandemic varied by media source and what political leaders they trusted . The president and conservative media have publicly disagreed with public health experts about how serious the coronavirus pandemic and what types of policies can effectively manage it (10), making partisanship a potential component of public responses to the pandemic.
Partisanship is among the most powerful forces in American political life, and is particularly meaningful in contexts with conflicting and shifting information. Americans use partisan identification as a guide to help choose political candidates during elections (11), form attitudes (12) and process information (13). More generally, this happens because partisanship operates as a social identity (14) that is increasingly tied to other important identities (15, 16) and even personality type (17). Finally, increasing partisan polarization on the elite level (18) and the rise of ideologically aligned media (19) combine to make partisans not only prefer their own party members over those in the opposite party (20) but also actively dislike members of the other party (21).

Partisan polarization also affects the public’s evaluations of the president’s performance in health crises as well as their own health behaviors. During the Obama administration, Republicans reported more concern over Ebola than Democrats (22) and Republicans in the public were less likely to get the H1N1 vaccine, particularly if they paid close attention to right wing media sources (23). The public generally takes cues on what issues to be concerned about from the leaders of their own party (24), and also can use the president’s position to benchmark their own policy preferences (25).

A number of recent behavioral studies use aggregate data to establish correlations between partisanship and social distancing practices during COVID-19 (26-29); to these, we contribute a novel individual-level analysis that avoids problems of ecological inference, and contains the rich individual covariates that can isolate partisanship from other factors correlated with it. Ours is unique in two ways: it captures early evidence across the widest range of behaviors and attitudes available at the onset of the pandemic. This is in contrast to work that focuses on partisan affect at a later point in the pandemic (30) or that focuses more narrowly on
self-reported social distancing only (31). Relative to existing work on partisanship and health behavior in the early stages of the US pandemic (32), our analysis covers a much wider array of policy responses and attitudes.

This manuscript reports results from a novel survey in the first phase of widespread school closures and shelter-in-place policymaking (March 20-23, 2020). We find early, consistent partisan differences among Americans not only in terms of their desired public health and public policy responses, but also on self-reported health behavior, like hand-washing and social distancing practices. Different to the voluminous body of survey analyses by public opinion research firms such as Pew and Gallup, ours is an IRB-approved analysis of the partisan politics of COVID-19 that adjusts flexibly for a wide range of demographic and geographic differences, using a saturated indicator variable approach that allows for nonlinear relationships between plausible confounders and health outcomes. By employing this flexible approach with controls, we can identify partisanship as the single most consistent factor explaining differences across survey responses. That is, these partisan differences cannot be attributed to a wide range of demographic or geographic factors that are correlated with individual partisanship, nor are they significantly altered by prominent or most-likely mediators, such as difference in news consumption, local or state caseloads, or local or state policy responses. Our findings put the subsequent course of the pandemic into sharp relief, as early divergence on COVID messaging—both in terms of seriousness of the pandemic and the substance of national politics, where Democrats emphasized health while Republicans focused on China and business (33)—and subsequent message-taking created a deep polarization at the individual level, in terms of behaviors and attitudes. Effective policy response that encourages broad pro-social behavior must attend not only to the source of the message, but also must address the deeply rooted
individual partisan differences in beliefs and behavior that are unlikely to be moved by bipartisan messaging or trusted authorities alone (34).

**Data and Methods**

**Data**

We fielded a large, nationally-representative survey of American adults (preregistered; $N = 3000$) between March 20 and March 23—one week after Trump declared a national emergency and contemporaneous to several state shutdown orders—to evaluate the relationship between partisan and political affiliations and health behaviors and policy preferences. Our sample was collected by YouGov (information on human subject participation is available in the Supplementary Materials). Summary demographic statistics from the sample can be found in Table S1. Sample size was determined by budgetary considerations. We do not exclude any respondents from our analysis, nor do we drop any respondents for missing data purposes.

We obtained voluntary and informed consent from participants using an IRB-approved consent protocol. Our research complies with all relevant ethical regulations in the United States, and was overseen by the Institutional Review Boards at University A (Protocol 2003009479), University B (Protocol 20-099), and University C (granted self-exemption with confirmation from the Office of Research, March 6, 2020). No deception was used. Informed consent was obtained from all respondents prior to the onset of the survey: participants were aware that they were taking part in a research study and had to affirmatively consent to proceed.

We collected information on four kinds of outcome variables: *health behaviors* (e.g., hand washing, self-quarantining), *health attitudes* (e.g., understanding of the scale of the threat, level of worry about COVID-19), *health policy views* (e.g., should public events be cancelled,
should costs be waived for COVID-19 related treatment), and public policy views (e.g., should elections be delayed, should interest rates be lowered, should air travel be suspended), totaling 38 items altogether (we present a full list of dependent variables in the Supplemental Materials (Table S1). We also collected information on demographic covariates (e.g., age, gender, race, level of education, income, location) as well as three measures of political orientations and affiliations: partisan affiliation (Democrat, Republican, or Other, calculated from the Pew Research Center standard “PID3” variable), as well as intended 2020 Presidential vote choice (for Trump, for the Democrat, or for a third party or other) and ideological positioning (conservative, liberal, and moderate or non-ideological)—both included in Supplemental materials.

We find that there is wide variation in the health behaviors that our respondents reported (Table 1).

<table>
<thead>
<tr>
<th>Table 1: Health Behaviors</th>
</tr>
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<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Wash Hands</td>
</tr>
<tr>
<td>Bought Sanitizer</td>
</tr>
<tr>
<td>Visited the Doctor</td>
</tr>
<tr>
<td>Changed Travel Plans</td>
</tr>
<tr>
<td>Avoid Contact w/ Others</td>
</tr>
<tr>
<td>Avoided Gatherings</td>
</tr>
<tr>
<td>Sought Info on COVID-19</td>
</tr>
<tr>
<td>Self-Quarantined</td>
</tr>
</tbody>
</table>

We find that already by March 20-23, 85% of our respondents reported washing their hands more frequently than before, and 77% of our respondents were avoiding gatherings. Far fewer Americans reported self-quarantining (36%) or purchasing hand sanitizer (41%). These pictures
in aggregate are encouraging, but do not capture the differences among Americans with respect to health behavior.

**Method**

To explore those differences, we model the relationship between political variables and outcome variables using a flexible covariate adjusted logistic regression approach (with ordinal logistic regressions for ordinal dependent variables), comparing respondents in a standard between-subjects analysis. All analyses were conducted using Stata 15.1. Our baseline model takes the following form:

\[
\logit(P(Y = 1)) = \alpha + \beta \text{Partisanship} + \gamma X + \epsilon
\]

Where \(Y\) is each of our independent variables and \(\text{Partisanship}\) is a measure of partisanship. For ordered dependent variables, we replace the logit specification with an ordered logistic regression specification. We include as covariates \(X\) a full range of dummy variables for gender, four age categories, race (white versus nonwhite), marital status (married versus other), seventeen income levels, six education levels, a nine-level measure of county urban/rural status matched to respondent ZIP codes, and state of residence. This broad array of indicator variables allows for factors such as age, education, and rural status to have nonlinear relationships with outcome variables. Results using ordinary least squares regression—or representing age, education, urban-rural, and income as continuous variables—are substantively identical. Given the large number of dependent variables, we implement a strict Bonferroni correction, correcting for nine comparisons each for health views and health behaviors (nominal \(\alpha = 0.05 \rightarrow 0.0056\)) and for twenty comparisons for the policy outcomes (nominal \(\alpha = 0.05 \rightarrow 0.0025\)).
Last, we note that because our research design does not model the assignment of partisan identity, our statistical correlations cannot be interpreted as causal relationships without further assumptions. Specifically, if we assumed unconfoundedness conditional on observed covariates along a parametric functional form assumption, these correlations would have a causal interpretation. We also recognize survey results such as these are inherently vulnerable to social desirability bias in self-reported behavior, specifically partisan bias (36, 37). As such, Democrats may over-report pro-social behavior to signal their identity, whereas Republicans may report the opposite to do the same. Our survey design does not allow us to this rule out, though behavioral studies of COVID-19 (26-29, 38) are reassuring external evidence that partisan differences in survey responses have analogues in real world behavior.

Results

We present here results for the trichotomous partisan affiliation variable (analyses are substantively identical using intended vote choice or ideological positioning, see Supplemental Materials, Figures S1-S4). Our results for the first two collections of outcome variables are in Figure 1 (full regression results are available in Tables S3 and S4).

Fig 1: Partisanship and Health Attitudes

Note: estimates are odds-ratios comparing Democrats and Others (unaffiliated or identifying with a third party) to self-identified Republicans. Odds ratios greater than 1 imply the respondent is more likely report a behavior or to express a view. 95% confidence intervals are adjusted for nine comparisons using a Bonferroni correction. For each dependent variable, the number in parentheses is the proportion saying yes (Panel A) or the mean response on a five-point scale (Panel B).

We find strong evidence in Panel A that relative to Republicans, Democrats were already significantly more likely to report having adopted several health behaviors in response to
COVID-19. These behaviors collectively reflect a practice of “social distancing” and aligned with CDC recommendations for preventing the spread of COVID-19. In Panel B, we also find strong evidence that relative to Republicans, Democrats were more worried about the pandemic. Democrats believed that the death toll was higher, that spending on public health responses should be increased, and were more likely to report an array of worries about the consequences of COVID-19 for their lives.

To illustrate the substantive differences in health behaviors between Democrats and Republicans, we calculate the adjusted risk differences between the two for each of our health behavior outcomes. These differences appear in Table 2.

**Table 2: Adjusted Risk Differences, Health Behaviors**

<table>
<thead>
<tr>
<th>Health Behavior</th>
<th>Adjusted Risk Difference, Democrats – Republicans</th>
<th>Standard Error</th>
<th>p-value</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wash Hands</td>
<td>0.088</td>
<td>0.017</td>
<td>0.000</td>
<td>0.056 – 0.120</td>
</tr>
<tr>
<td>Bought Sanitizer</td>
<td>0.083</td>
<td>0.023</td>
<td>0.000</td>
<td>0.037 – 0.129</td>
</tr>
<tr>
<td>Visited the Doctor</td>
<td>-0.005</td>
<td>0.011</td>
<td>0.632</td>
<td>-0.027 – 0.017</td>
</tr>
<tr>
<td>Changed Travel Plans</td>
<td>0.063</td>
<td>0.022</td>
<td>0.005</td>
<td>0.020 – 0.107</td>
</tr>
<tr>
<td>Avoid Contact w/ Others</td>
<td>0.173</td>
<td>0.022</td>
<td>0.000</td>
<td>0.129 – 0.216</td>
</tr>
<tr>
<td>Avoided Gatherings Sought Info on COVID-19</td>
<td>0.116</td>
<td>0.020</td>
<td>0.000</td>
<td>0.076 – 0.155</td>
</tr>
<tr>
<td>Self-Quarantined</td>
<td>0.118</td>
<td>0.023</td>
<td>0.000</td>
<td>0.073 – 0.162</td>
</tr>
</tbody>
</table>

*This table reports the adjusted risk differences for eight health behaviors. These are the differences between Republicans and Democrats from the statistical models in Figure 1 (Table S3), adjusting for all other covariates.*

The results reveal a stark partisan divide in health attitudes (Figure 1) and behaviors (Table 2) on COVID-19. In Figure 2, we show that these differences spill into policy preferences (full regression results are available in Tables S5 and S6).
In Panel A, we observe strong partisan differences in public health responses such as socializing the costs of diagnosis and treatment. We also observe that Democrats were already in March much more likely to support some measures that support social distancing (such as cancelling public events and covering workers with paid sick leave). There were no partisan differences in support for firms, restrictions on domestic travel, or support for state governments taking the lead in the public health response.

We observe further partisan effects in trade and immigration policy responses that were framed as responding to the pandemic. Democrats were more likely to support free trade and to oppose import taxes in response to COVID-19; they were also less likely to support expansionary macroeconomic policy to support economic growth. Democrats were far less supportive than Republicans of policies designed to halt the spread of COVID-19 through restrictions on international travel or movement. Finally, Democrats were less likely to support delaying elections until the COVID-19 threat has passed.

One possible explanation for these results is that if Democrats tend to live in urban or cosmopolitan locations that are themselves more affected by COVID-19 in this first phase of spread, then these correlations are simply reflecting objective conditions of the pandemic. Our fixed effects by state and urban-rural locality, however, minimize this particular inferential threat. Furthermore, we estimate multilevel regression models (Tables S7-S18, Figures S5-S8) with ZIP code-level random intercepts (39) that control for county-level COVID-19 diagnoses and county-level COVID-19 deaths as of March 23 (available from the New York Times COVID-

To confirm the importance of partisanship, we adopt a regularized regression approach to select what variables among the political and demographic predictors above best predict the outcomes above. Specifically, for each of the 38 outcomes, we use (linear) lasso regression (40) to select from among the 87 predictors we included in the analysis above, and check to see whether partisanship is among them (we allow the penalization to be data-driven, following methods in 41). This approach selects our variable capturing Democrats in 31 out of 38 regressions (see Tables S19-S22). The next most commonly selected variable is a dummy for respondents who have completed a High School education only, selected in only 17 regressions. These findings comprise powerful evidence that in addition to being a consistent predictor of health behaviors and attitudes, partisanship is the most consistently related to health behaviors and attitudes among the predictors we have included.

Explaining Partisan Effects

What is driving these differences in attitudes and behaviors across partisan identifiers? In additional analyses, we investigate both the robustness of our main findings and some of the mechanisms that might explain them. First, it could be that differences in partisanship are attributable to selective exposure by way of differences in news consumption (42). If Republicans are more likely to view Fox News or other news sources that downplayed the severity of the crisis and undermining public messaging on health behaviors, then this (rather than individuals’ own partisanship) might account for our observed differences across partisan
affiliation. To test this possibility, we interact partisan identity with a measure of right-wing news consumption (see the Supplemental Appendix for further explanation and coding procedure). We find no general pattern in the results that suggests that the broad partisan differences in behaviors, attitudes, or preferences are driven by the consumption of right-wing news (see Tables S23-S26, Figures S9-S12), a result that differs with recent behavioral studies on the effect of Fox News viewership on social distancing behavior over time (38).

It could also be that the partisan differences that we observe are the product of compositional differences in urban-rural residence across partisan, that the general differences in partisan response are driven by Republicans who live in rural areas rather the Republicans in general; or by Democrats living in urban areas rather than Democrats in general. To test this possibility, we estimate models that interact partisanship with the urban-rural variables, allowing us to examine whether partisan differences exist across the range of the urban-rural variable. We find large uncertainty in our estimates of partisan differences among the most rural respondents, which suggests that our main results are driven primarily by urban and suburban respondents (see Tables S27-S30, Figures S13-S16).

Finally, we explore whether the local policymaking environment might shape our results, using data on the local policymaking environment in American municipalities (43). These data code urban areas according to whether or not they have implemented six policies: testing facilities, shelter in place orders, social distancing, closing businesses, limiting business hours, and limiting the size of gatherings. We create an additive index of COVID-19 response policies from these six indicators, and then interact it with our partisanship variable. Because the local policymaking data only include residents of urban areas, we lose approximately 33% of our respondents, but our results are nevertheless revealing (see Tables S31-S34, Figures S17-S20).
We find that behavioral differences between Democrats and Republicans are largest in urban areas that have implemented few or no COVID policies. In urban areas that have implemented aggressive COVID policy responses, partisan differences are statistically insignificant. This may be a function of the policy environment, or simply a result of low statistical power due to few Republicans living in urban areas with aggressive COVID policy responses. We find no evidence, however, that the local policymaking environment shapes partisan differences in health views or policy attitudes. Collectively, these results suggest that local policy environments may not affect the partisan politics of COVID-19, but they can shape individual behavior as they are designed to do.

Discussion

Our results collectively describe a sharp and wide-reaching political divide as an early reaction to COVID-19: already by mid-March, Republicans were less likely than Democrats to report responding with CDC-recommended behavior, and were less concerned about the pandemic, yet were more likely to support policies that restrict trade and movement across borders as a response to it. Democrats, by contrast, responded by changing their personal health behaviors, and supported policies that socialize the costs of testing and treatment. Thus, in the first month of COVID-19 in the US partisanship was a more consistent predictor of behaviors, attitudes, and preferences than anything else that we measure.

Because an effective public health response to a rapidly-moving influenza pandemic such as COVID-19 requires consistent participation and collective action across communities (44, 45) in addition to broader public health interventions (46), our findings have disturbing implications for health crisis management. An effective strategy for mitigating the damage of COVID-19 requires citizens to practice social distancing measures and state and local governments to
participate in them regardless of political leanings or partisan affiliations. Aggregate behavioral
data shows that partisanship predicts social distancing practices (26, 27, 29), and that partisan
differences in social distancing, in turn, predict subsequent infection rates (28). Our findings are
the strongest evidence available that partisanship had already shaped the course of COVID-19 at
the individual level at the pandemic’s onset, which in turn helps to account for the tragic timeline
campaign would have exhibited bipartisan solidarity through a common message, endorsed
across parties and by political elites of all persuasions, to slow the pandemic and ease the strain
on health services (“flatten the curve”). Facing such rooted partisan disagreement about the
pandemic, and with the Trump administration unwilling to take decisive bipartisan action, the arc
of the pandemic was determined early on.

An effective public health response must confront the deeply rooted partisan politics of
the crisis. Such a response must be pitched at the federal level: our analysis both of local policy
environments and of local case loads reveals that although local context matters, it does not erase
systematic partisan differences across Americans writ large. Without a federal response that
confronts the partisan politics of the crisis, messaging that attempts to sidestep partisanship—
using clergy, celebrities, health experts, etc.—will be undermined by this deepest cleavage.

Acknowledgments

We acknowledge seminar participants at American University and UNC Chapel Hill for
comments on earlier drafts.

References


