CORONAVIRUS

Fatalities from COVID-19 are reducing Americans' support for Republicans at every level of federal office

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Between early March and 1 August 2020, COVID-19 took the lives of more than 150,000 Americans. Here, we examine the political consequences of the COVID-19 epidemic using granular data on COVID-19 fatalities and the attitudes of the American public. We find that COVID-19 has led to substantial damage for President Trump and other Republican candidates. States and local areas with higher levels of COVID-19 fatalities are less likely to support President Trump and Republican candidates for House and Senate. Our results show that President Trump and other Republican candidates would benefit electorally from a reduction in COVID-19 fatalities. This implies that a greater emphasis on social distancing, masks, and other mitigation strategies would benefit the president and his allies.

INTRODUCTION

COVID-19 has killed about 5 times as many Americans as were killed in the Korean War, over 3 times as many as in Vietnam, and 40 times as many Americans as were killed in the entire Iraq War. Americans broadly disapprove of the president's handling of the pandemic (*1*), but as of yet, there has been no clear causal evidence about whether the rise in COVID-19 fatalities has led Americans to turn away from President Trump.

A large academic literature has shown that the American public holds presidents accountable for their performance in office (*2*, *3*). Among other things, the public penalizes a president and others in their party for casualties in war. Areas with more local casualties, for example, were among the first to turn against the Vietnam War between 1965 and 1972 (*4*), and during the Iraq War, people who knew someone who died on 9/11 or in the Iraq War were consistently more likely to disapprove of George W. Bush (*5*). As a result, states with greater losses were more likely to vote against President Bush in the 2004 presidential election (*6*). Voters also punished Republican candidates at other levels of office: Areas with higher casualties from the war in Iraq were more likely to support Democratic House and Senate candidates in the 2006 midterm elections (*7*, *8*). Last, areas with higher casualties in the war in Afghanistan penalized Barack Obama's Democratic successor in 2016, Secretary of State Hillary Clinton, by supporting Donald Trump in greater numbers (*9*).

The U.S. president has likened his battle against COVID-19 to that of a "war-time president" (*10*). Voters may also see him that way. On the basis of previous studies of the political costs of war-time casualties, we hypothesize that the American public will be less likely to support President Trump and other Republican candidates for federal offices in areas with higher levels of COVID-19 fatalities.

We examine whether Americans are penalizing the president and other Republicans for the fatalities due to COVID-19 using several granular data sources (see Materials and Methods for more details). We leverage both temporal and geographic variation in the magnitude of the COVID-19 pandemic using local-level data on fatalities gathered by the *New York Times*. We use the Democracy Fund + UCLA Nationscape Project to measure the attitudes of the American public at a local level. This survey includes the responses of more than 300,000 people between the summers of 2019 and 2020 (*11*).

RESULTS

Figure 1 (below) examines the state-level association between cumulative COVID-19 fatalities as of 31 May 2020 and changes in Americans' attitudes between the first 2 months of 2020 and June. It shows that states with more COVID-19 fatalities were less likely to support Republican candidates. For example, people in the states with the highest fatalities were about 6% less likely to approve of President Trump's performance in office than people in the states with the lowest level of fatalities (Fig. 1A). The states with the highest level of fatalities were about 3% less likely to support President Trump's reelection in the presidential race against Democrat Joseph R. Biden (Fig. 1B). The hardest-hit states were nearly 13% less likely to support Republican Senate candidates (Fig. 1C) and about 5% less likely to support Republican House candidates (Fig. 1D).

These associations, however, could be confounded by other state-level factors and may be affected by sampling variability at the state level (particularly for smaller states). Thus, we move next to a more rigorous difference-in-differences regression design to assess the causal effect of COVID-19 fatalities on political preferences. This approach examines the effect of COVID-19 fatalities over the past 30 days in each respondent's state or county on their attitudes about President Trump and other politicians. In addition to providing a more granular test, county-level results characterize the impact of the information environment surrounding the pandemic relative to the actual number of fatalities. We use fixed effects for geography and week of interview to account for area- and time-specific confounders. We also control for a host of pre–COVID-19 individual-level attributes of the survey respondents, including 2016 vote choice, making our results net of factors such as race, education, gender, and partisan preference in 2016 (see Materials and Methods).

We find consistent results at every level of geography and for every office (Fig. 2): The effect of fatalities is a drain on Republican vote share (see Materials and Methods for a variety of robustness checks and the Supplementary Materials for a table with the regression results). Overall, areas with higher COVID-19 fatalities are significantly less likely to support President Trump and other Republican

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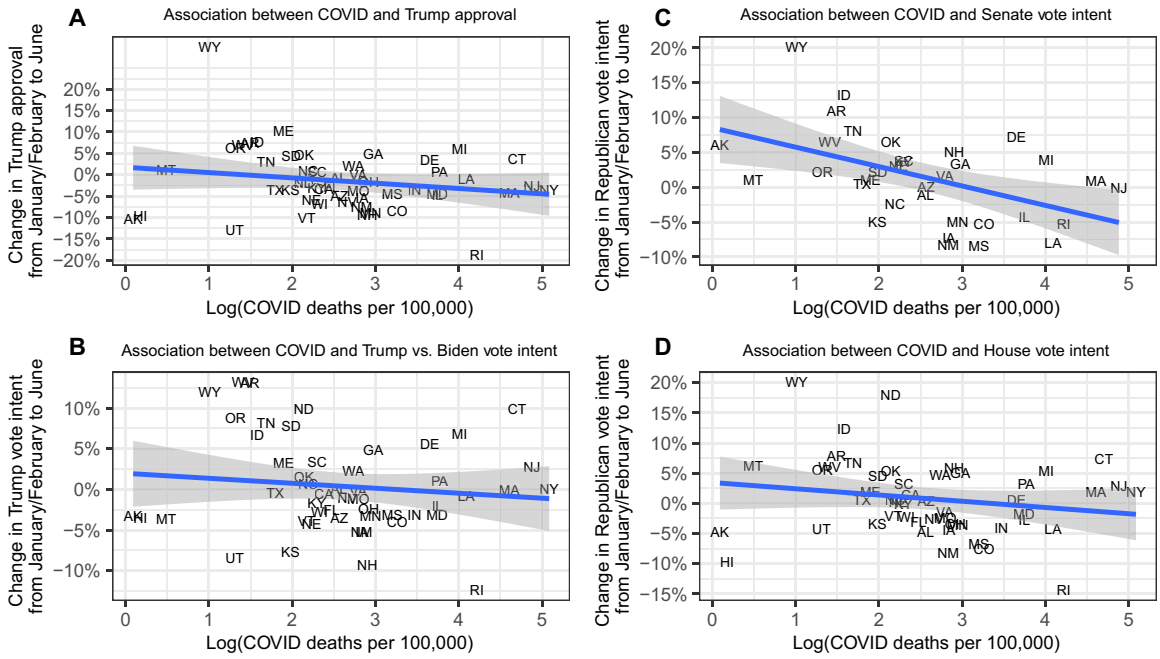

Fig. 1. Association between COVID-19 deaths and changes in political preferences.

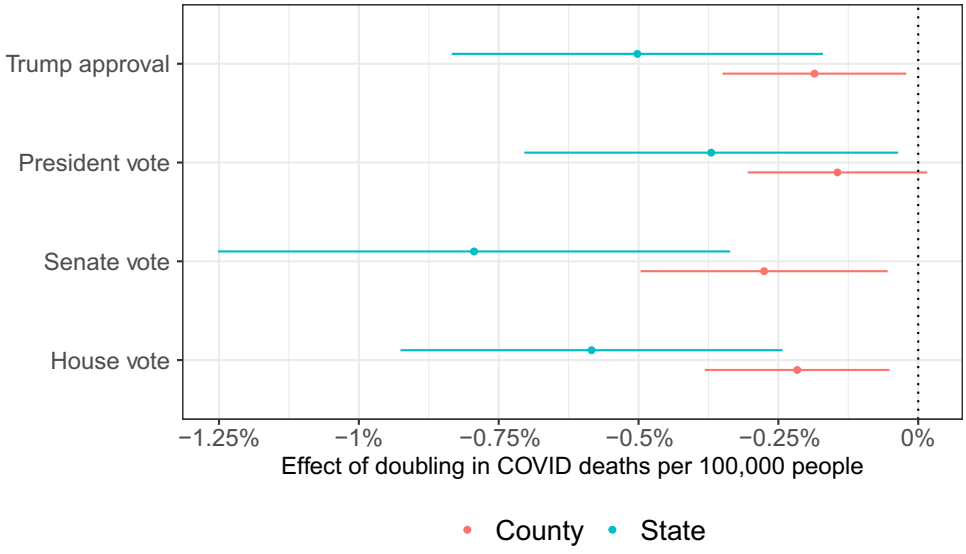

Fig. 2. Effect of COVID-19 deaths on political preferences for various offices. This graph shows the results of regression models of the effect of a doubling in COVID-19 deaths per 100,000 people in the past 30 days in each state and county on Trump approval and whether respondents plan to vote for Republican candidates for president, Senate, and House. The dots show the point estimates, and the bars show 95% confidence intervals.

candidates. A doubling of COVID-19 fatalities (0.69 U on the natural log scale) at the county level leads to a roughly 0.19% reduction in President Trump's approval rating, and a doubling in fatalities at the state level leads to a 0.5% reduction in the president's approval. In the presidential election, a doubling of COVID-19 fatalities at the county level makes Americans about 0.14% less likely to support President Trump against Joseph R. Biden and a doubling in fatalities at the state level leads to a 0.37% reduction in support for Trump. In Senate races, a doubling of COVID-19 fatalities at the county level makes Americans about 0.28% less likely to support Republican candidates and a doubling in fatalities at the state level leads to a 0.79% reduction in support for Republicans. Last, in House races, a doubling of COVID-19 fatalities at the county level makes Americans about 0.22% less likely to support Republican candidates and a doubling in fatalities at the state level leads to a 0.58% reduction in support for Republicans.

DISCUSSION

Our results show that the COVID-19 pandemic has already substantially damaged the political standing of President Trump. Just as the public penalizes the president for casualties during wars, the public

is penalizing the president and other members of his party for local fatalities during the pandemic. The number of local fatalities due to COVID-19 appears to be at least as important as the local economy in Americans' evaluations of their leaders (*12*, *13*). COVID-19 could cost Trump and other Republicans several percentage points in the 2020 election. This could swing the presidential election and the U.S. Senate toward Democrats, with particularly high effects in swing states such as Michigan, Wisconsin, Pennsylvania, New Hampshire, Arizona, and Florida. All of these states had tight margins in the 2016 presidential election. Michigan's margin was particularly narrow (0.2%), as was New Hampshire's (0.4%), suggesting that COVID-related fatalities may be consequential not only at the individual level in 2020 but also in terms of Electoral College results. Similarly, there were very close U.S. Senate elections in 2018. In Florida, 0.2% of the vote separated the Republican winner from the Democrat.

These narrow margins in 2016 and 2018, coupled with the realization that fatalities from COVID-19 are not unlike casualties of war in voters' minds, suggest that a winning strategy for President Trump and other Republican candidates on the ballot in 2020 should be to adopt mitigation strategies to limit the spread and consequences of COVID-19 in the American population. Increasing fatalities from the disease leads to losses for Republicans.

MATERIALS AND METHODS

This section describes the methods and data that we use in our paper. The first building block of our study is granular data on reported COVID-19 fatalities across geography and time. For this, we use data that the *New York Times* has collected on the basis of state websites and databases (see https://github.com/nytimes/covid-19-data). We then aggregate the county-level data on COVID-19 deaths at the state level. County-level population data are taken from the 2014 to 2018 American Community Survey (ACS).

The next building block is data on attitudes of the American public about President Trump and vote intentions for the 2020 elections. For this, we use the Democracy Fund + UCLA Nationscape Project to measure the attitudes of the American public at a local level (*11*). This survey includes the responses of more than 300,000 people, about 6400 of whom were interviewed each week between the summers of 2019 and 2020 (through 29 July 2020). The survey is fielded online and is representative of the nation as a whole (*14*). The Nationscape staff generate sampling weights for the weekly datasets. The technique is based on processes used by the American National Election Studies. In table S1, we show a detailed comparison of the weighted Nationscape sample with population targets. Overall, the weighted sample appears to be extremely representative of observable population targets. Owing to its large size, Nationscape can also be disaggregated to reflect opinions at the state and local levels.

The survey asks about a variety of political attitudes and preferences. We use four specific questions from the survey. First, we use data on whether respondents approve of President Trump's job performance. We collapse this four-point question to a dichotomous variable. Second, we use data on whether people would vote for President Trump or Joseph R. Biden in a head-to-head matchup in the 2020 presidential election. Third, we use data on whether respondents plan to vote for the Republican or Democratic candidate in the 2020 House election in their district. Last, we use data on whether respondents plan to vote for the Republican or Democratic candidate in the 2020 Senate elections in their state (if they have one). For each, we are excluding individuals who answered "Not sure." (Note that fig. S4 shows that the results are similar in models that include don't know responses.)

Our main paper reports the results of two sets of analyses. The next two sections describe the details for these analyses.

Association between COVID-19 deaths and changes in political preferences at the state level

First, we look at the state-level association between COVID-19 fatalities and Americans' attitudes about President Trump and their vote intentions in the 2020 election. For this analysis, the independent variable is the natural log of the number of COVID-19 fatalities per 100,000 people in each state before 1 June 2020. The outcome variable is the change in the public's attitudes before the COVID-19 pandemic (defined as the first 2 months of 2020) and their attitudes after the arrival of COVID-19, between 1 June and 2 July 2020. We use the appropriate state-level sampling weights to calculate the public's state-level attitudes in each time period. We then graph the relationship between COVID-19 fatalities and the changes in political attitudes in each state. By focusing on changes in political attitudes, our analysis implicitly accounts for time-invariant confounders (omitted variables) in each state and common shocks that affect all states. However, there is large sampling variability at the state level, particularly in smaller states, which we will address in further analyses.

Causal effect of COVID-19 deaths on political preferences for various offices

Next, we move to a more rigorous difference-in-differences regression design. We use a linear probability model to examine the effect of COVID-19 fatalities over the past 30 days in each survey respondents' state or county with their attitudes about President Trump and other politicians. For this analysis, the independent variable is the natural log of the number of COVID-19 fatalities per 100,000 people in the last 30 days (relative to the date each respondent was interviewed) in each geographic area. A 0.69-U increase on the natural log scale can be interpreted as approximately a doubling of fatalities (*15*). Here, we use fixed effects for geography and survey wave (week) to account for area- and time-specific confounders and identify the causal effects of COVID-19 on political attitudes (*16*). The geographic fixed effects account for the tendency of different areas to have varying levels of baseline support for President Trump and other Republican candidates. The temporal fixed effects account for national-level changes in political attitudes due to the pandemic, the economy, and national events such as the Black Lives Matter movement. We also control for a host of individual-level pretreatment attributes of the survey respondents. These are not crucial for our identification strategy, but they reduce the variance in our results (*17*). Specifically, we control for respondents' gender, race/ethnicity, education, Hispanic ancestry, and their vote choice in the 2016 presidential election. The SEs in our regression results are clustered at the state-day or county-day level depending on the model (*18*). We use national sampling weights in all our analysis. So, our results are representative of the American public at the national level. While our main analyses use a linear probability model, we find substantively similar results using logistic regression models.

To validate our research design, we run a placebo check where we examine the effect of future COVID deaths on an index of approval, presidential voting, senate voting, and house voting at the state level. Specifically, we look at future COVID deaths over the next 30

and 90 days using survey data before the start of the COVID-19 pandemic, from between July 2019 and March 2020. Figure S1 shows that there is no effect of future COVID-19 deaths on political preferences.

Note that the state of the art in panel research designs is constantly moving forward. In recent years, a number of scholars have conducted innovative work (*19*–*21*). However, to our knowledge, all of this work currently requires dichotomous treatment variables. So, overall, we believe that our design is the best available research design for our data and that our placebo checks validate a causal interpretation of our results.

We have also run a number of robustness checks for our main research design and results. For simplicity, each of these robustness checks focuses on our state-level model using an index of our four outcome variables to capture aggregate political preferences.

1) First, we examine the results if we use several different numbers of days as cutoffs rather than just 30 days. Specifically, we examine cutoffs ranging from 10 to 90 days. In fig. S2, we find that the results are quite similar across models, although the point estimates decrease a bit for longer cutoffs. Overall, this suggests that our results are not especially sensitive to the choice of cutoffs. They are also significant across all cutoffs.

2) Our next robustness check examines the results if we do not include any control variables in our analyses (fig. S3). We find that our results are slightly noisier without any control variables, but the results are still significant without controls. In our main analyses, we prefer to retain control variables because of the increase in efficiency that they provide.

3) In our main analysis, we dropped don't knows. However, it is reasonable to think that don't knows could be an important middle category, and voters could move into this category because of concern about COVID-19. To assess this possibility, we coded alternative variables for all our outcomes with don't know as a middle category (0.5). Figure S4 shows the results at the state level. It indicates that the results are generally very similar with and without don't knows, especially for the presidential race. The point estimates in Senate and House races are a bit smaller when we include don't knows, but the results are significant both with and without don't knows at all levels of geography. Likewise, our county level results are also similar with and without don't knows.

4) Last, we examine whether the results change if we drop each state one by one. Figure S5 shows that our results are not sensitive to dropping individual states. The point estimates are generally quite similar across models. The highest *P* value is in a model that drops Texas. Even in this model, however, we still find a *P* value of 0.02.

Overall, these robustness checks indicate that our results are not sensitive to alternative regression specifications or driven by outliers.

SUPPLEMENTARY MATERIALS

Supplementary material for this article is available at http://advances.sciencemag.org/cgi/content/full/6/44/eabd8564/DC1

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