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Short Communication

Political affiliation and risk taking behaviors among adults with elevated chance of severe complications from COVID-19

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ABSTRACT

This study determines whether COVID-related risk-taking behavior was different among Republicans, Democrats, and Independents, in adults with elevated chance of severe complications from COVID-19. Using US national survey data collected September 30–October 27, 2020 ($N = 6095$), behaviors in the prior week examined were: 7 potentially risky activities, mask wearing anywhere, and mask wearing while undertaking each activity. Differences among political affiliations were estimated for adults with 0 and with ≥ 1 medical risk factors for severe complications, adjusting for sociodemographic factors. Among adults with medical risk factors, the adjusted number of potentially risky activities was higher among Republicans (3.83) but not Independents (3.17) relative to Democrats (2.98). The adjusted percentage of adults with medical risk factors who wore a mask anywhere in the past week was lower for Republicans (87%) and Independents (91%) than for Democrats (97%). While undertaking each specific activity, the adjusted percentage of at-risk adults never wearing a mask was higher for Republicans than Democrats: 24% vs 8% at bar/club; 6% vs 0% at grocery/pharmacy; 63% vs 30% visiting at friend's home; 68% vs 41% hosting visitors; 30% vs 5% at gathering of ≥ 10 people; 25% vs 11% while within 6 ft of someone they do not live with. Rates of mask wearing among political Independents were between rates among Democrats and Republicans. Efforts to reduce COVID-related risky behavior should recognize that although Republicans take more risks, rates of mask wearing at common activities are low across political affiliations, even for populations vulnerable to severe complications.

1. Introduction

Mask wearing and social distancing are effective in reducing exposure to and spread of COVID-19 (Chughtaita et al., 2020; Courtemanche et al., 2020; Mandal and Das, 2020; Rubin et al., 2020). There is, however, a political divide between Democrats and Republicans, with Independents in between in COVID-related risky behavior. Early in the pandemic, areas with higher Democratic vote shares had larger increases in people staying close to home (Gollwitzer et al., 2020), and affiliation with the Democratic party was associated with increased use of hand sanitizer and avoiding gatherings or contact with others

(Gadarian et al., 2021). As mask use became more prevalent, Republicans were less likely than Democrats to wear a mask (Kramer, 2020). These differences in behaviors are consistent with lower perception of the risk of hospitalization from COVID-19 and fewer health worries about the pandemic among Republicans (Gadarian et al., 2021; Rothwell and Desai, 2020).

Party differences in COVID-19 responses arise because party affiliation is a stable identity that guides choices of information sources and how information is processed and acted on (Clinton et al., 2021). Political elites influence affiliates' views on COVID-19. Democratic members of congress were more likely to frame the pandemic as a public

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health threat than Republican members (Green et al., 2020). This party difference in defining COVID-19 as a public health crisis may be reinforced if individuals model the mask-wearing behavior of party elites, particularly the Republican president who did not wear a mask even when infected with COVID-19.

Differences in COVID-related risky behavior across the political spectrum also may be linked to consumption of media information about the risk posed by COVID-19. For instance, among Republicans 55 and older, a comparison of *Tucker Carlson Tonight* to *Sean Hannity* viewers early in the pandemic suggested that Hannity's dismissal of the risks of COVID-19 and claims that Democrats were using COVID-19 to undermine the president delayed COVID-19-protective behaviors among Hannity's viewers compared to Carlson's (Bursztyrn et al., 2020). Non-COVID-specific differences in health and health behaviors across the political divide may work in tandem with politicized views of COVID-19 protections (Gadarian et al., 2021; Gollwitzer et al., 2020; Kramer, 2020; Pabayo et al., 2015; Subramanian and Perkins, 2010). Importantly, we do not know whether differences in risk-taking behaviors by political affiliation exist among populations with known elevated chances of severe complications if infected with COVID-19 (Centers for Disease Control and Prevention, 2020).

Using national data collected in October 2020, we determined whether risk taking behaviors – including both mask wearing at any time recently and mask wearing during specific activities – differ by political affiliation among adults who have an elevated chance of severe complications if infected. Effective public health messaging to limit the spread of COVID-19 requires knowledge of the risky behaviors undertaken by individuals with elevated risk of complications from COVID-19, and how these behaviors may differ by political affiliation.

2. Methods

2.1. Data, sample, and survey questions

The study used data from the Understanding America Study (UAS), an internet-based longitudinal survey representative of the US civilian noninstitutionalized population 18 and older. UAS uses Address Based Sampling, and sample members are provided a tablet and internet subscription if needed (University of Southern California Dornsife Center for Economic and Social Research, 2020a). We used responses to questions about COVID-related risky behaviors, medical conditions, and sociodemographic characteristics administered September 30–October 27, 2020 (76.7% response rate) (University of Southern California Dornsife Center for Economic and Social Research, 2020b) combined with responses to questions about party affiliation administered December 13, 2019–February 4, 2020 (80.7% response rate) (Bruine de Bruin et al., n.d), for 5108 adults interviewed in both waves. Respondents were excluded if they said they were most aligned with the Libertarian ($n = 143$), Green ($n = 44$), or “other” ($n = 26$) party, leaving Democrats, Republicans, and Independents (independent or not aligned with any political party). UAS was approved by the IRB at the University of Southern California, and respondents provided informed consent online.

Appendix Table 1 provides the survey questions used to measure the outcomes: 7 activities undertaken in the past 7 days (went to bar/club, went to grocery/pharmacy, went to friend's home, hosted visitors at home, attended gathering of ≥ 10 people, left home for non-essential activity, were within 6 ft of someone you don't live with); mask wearing while doing 6 of the 7 activities; whether a mask was worn anywhere in the past 7 days. Mask wearing while doing each of the 6 activities was asked only of those engaged in that activity, but whether an individual wore a mask anywhere was asked of everyone.

Political affiliation is classified as Republican, Democrat, or Independent based on respondent reports about the party with which they are most aligned. Nine medical conditions that the Centers for Disease Control and Prevention (CDC) has identified as associated with or might

be associated with severe illness from COVID-19 as of September 1, 2020 were measured in UAS. Measurement uses affirmative responses to whether a health professional has ever told the respondent they have: chronic lung disease, kidney disease, heart disease, cancer, autoimmune disorder, diabetes, asthma, high blood pressure, obesity. Having ≥ 1 of these preexisting medical risk factors is considered being at elevated chance for severe complications if infected.

Socioeconomic factors include gender (female, male), age (18–59, 60–69, ≥ 70), race-ethnicity (Hispanic, non-Hispanic white, non-Hispanic black, non-Hispanic other race), and education (≤ 12 , 13–15, ≥ 16 years). Observations with missing data on party affiliation, whether ≥ 1 medical risk factors, age, gender, race-ethnicity, or education ($n = 108$) were excluded resulting in 4787 cases. Additional observations with missing data for outcome variables were infrequent (maximum of 2.3% for number of activities) and were excluded only for analysis of the outcome for which they were missing. Sample size and descriptive statistics for explanatory factors overall and by political affiliation (Appendix Table 2) and outcomes by political affiliation (Appendix Table 3) are in the online appendix.

2.2. Statistical analyses

Multivariable logistic models were estimated for undertaking each activity (Appendix Table 4), always wearing a mask at each activity, never wearing a mask at each activity, and wearing a mask anywhere (Appendix Tables 5 and 6). Multivariable Poisson regression was estimated for the number of activities undertaken (Appendix Table 4). Explanatory variables for each logistic and Poisson regression included: Republican and Independent (vs Democrat), whether ≥ 1 medical risk factors (vs 0), the interaction of Republican and whether ≥ 1 medical risk factors, the interaction of Independent and whether ≥ 1 medical risk factors, gender, age, race-ethnicity, and education.

For each model, the adjusted proportion engaging in risky activities or wearing a mask was calculated holding gender, age, race-ethnicity, and education constant at observed values. We report whether differences in these proportions are statistically significant between Democrats and Republicans, Democrats and Independents, and between those with versus without medical risk factors.

Supplemental analyses examined sensitivity of the conclusions to adding as explanatory variables indicator (0/1) variables for state of residence to control for variation in coronavirus policies and intensity. The UAS final post-stratification sample weight from the latter of the two interview waves (University of Southern California Dornsife Center for Economic and Social Research, 2020c) and Stata 16 software were used.

3. Results

Among adults who identified as Democrats, Republicans, or Independents, 39.5% were Democrats, 35.8% were Republicans, and 24.7% were Independents, and just over half (54.3%) had ≥ 1 medical risk factors (Appendix Table 2). Relative to Democrats, Republicans were more likely to be aged ≥ 70 years, male, non-Hispanic white, and have no more than 12 years of schooling, while Independents were more likely to be 18–59, non-Hispanic white, and have no more than 12 years of schooling. The prevalence of having ≥ 1 medical risk factors did not differ among Democrats, Republicans and Independents (Appendix Table 2).

For adults with ≥ 1 medical risk factors, Republicans were more likely than Democrats to undertake each activity except going to a grocery or pharmacy and averaged 3.83 activities (95%CI = 3.68,3.99) versus 2.98 activities (95%CI = 2.83,3.13) for Democrats (Table 1). Independents were more likely than Democrats to undertake two activities (attending gathering of at least 10 people, and leaving home for a non-essential activity). Among Republicans, 3 activities were less common for adults with versus without medical risk factors (grocery/

Table 1

Adjusted proportion undertaking potentially risk activities in the past 7 days, by political affiliation and whether have a medical risk factor for COVID-19.

| Activity | No medical risk factors | | | p-Value for political affiliation differences <0.05 | ≥1 medical risk factors | | | p-Value for political affiliation differences <0.05 | p-Value for differences within political affiliation by presence of medical risk factors <0.05 |
|------------------------------------|-------------------------|---------------------|---------------------|---|-------------------------|---------------------|---------------------|---|--|
| | Democrat | Republican | Independent | | Democrat | Republican | Independent | | |
| Bar/club (N = 4755) | 0.08 [0.06,0.11] | 0.19 [0.15,0.23] | 0.10 [0.07,0.13] | 1 | 0.08 [0.05,0.10] | 0.15 [0.12,0.18] | 0.08 [0.05,0.11] | 1 | |
| Grocery/pharmacy (N = 4758) | 0.83 [0.80,0.87] | 0.89 [0.85,0.92] | 0.76 [0.70,0.81] | 1, 2 | 0.82 [0.79,0.85] | 0.84 [0.80,0.87] | 0.82 [0.78,0.87] | | 4 |
| Visit friend's home (N = 4756) | 0.46 [0.41,0.50] | 0.58 [0.54,0.63] | 0.44 [0.38,0.50] | 1 | 0.41 [0.37,0.45] | 0.56 [0.51,0.60] | 0.43 [0.38,0.49] | 1 | |
| Host visitors (N = 4751) | 0.41 [0.36,0.46] | 0.63 [0.58,0.67] | 0.40 [0.35,0.46] | 1 | 0.43 [0.38,0.47] | 0.53 [0.49,0.57] | 0.43 [0.38,0.49] | 1 | 4 |
| Gathering of 10+ (N = 4752) | 0.14 [0.11,0.18] | 0.35 [0.30,0.40] | 0.13 [0.09,0.17] | 1 | 0.09 [0.07,0.12] | 0.29 [0.25,0.33] | 0.15 [0.11,0.19] | 1, 2 | 3 |
| Left home, nonessential (N = 4728) | 0.58 [0.53,0.62] | 0.78 [0.74,0.82] | 0.66 [0.61,0.72] | 1, 2 | 0.51 [0.47,0.55] | 0.71 [0.68,0.75] | 0.59 [0.54,0.64] | 1, 2 | 3, 4 |
| <6 ft. of noncoresident (N = 4734) | 0.66 [0.61,0.71] | 0.77 [0.72,0.81] | 0.62 [0.56,0.68] | 1 | 0.65 [0.61,0.69] | 0.75 [0.71,0.79] | 0.64 [0.59,0.69] | 1 | |
| Number of activities (N = 4649) | 3.19 [3.02,3.36] | 4.15 [3.97,4.34] | 3.14 [2.92,3.35] | 1 | 2.98 [2.83,3.13] | 3.83 [3.68,3.99] | 3.17 [2.96,3.37] | 1 | 3 |

Notes: Adjusted estimates based on multivariable models controlling for political affiliation, whether ≥1 medical risk factors, the interaction of political affiliation and whether ≥1 medical risk factors, age, gender, race-ethnicity, and education reported in Appendix Table 4. 95% confidence intervals reported in brackets. Statistically significant differences at the 0.05 level in adjusted estimates for Democrats vs Republicans and Democrats vs Independents by number of medical risk factors are denoted 1 and 2, respectively. Statistically significant differences within political affiliation by 0 vs ≥1 medical risk factors for Democrats, Republicans, and Independents are denoted 3, 4 and 5, respectively.

Data Source: Understanding America Study.

pharmacy, hosting visitors, leaving home for non-essential activity).

Among adults with ≥1 medical risk factors who undertook activities, Democrats were more likely than Republicans to always wear a mask for 5 of the 6 activities (Table 2). The differences among these 5 activities ranged from 10 percentage points for hosting a visitor (Democrats = 0.11 (95%CI = 0.08,0.15); Republicans = 0.01 (95%CI = 0.00,0.03)) to 28 percentage points for attending a gathering of ≥10 people (Democrats = 0.45 (95%CI = 0.30,0.60); Republicans = 0.17 (95%CI = 0.10,0.23)). Democrats were more likely than Independents to always wear a mask at 4 of the 6 activities. Always wearing a mask was not more common at specific activities for adults with ≥1 medical risk factors (vs without) regardless of political affiliation.

Among adults with ≥1 medical risk factors who undertook activities, Democrats were less likely to never wear a mask than Republicans for all 6 activities and less likely than Independents for 1 activity (Table 2). Among the at-risk adults, the activities with the highest proportion of never wearing a mask were for Republicans visiting a friend's home (0.63 95%CI = 0.57,0.68) and hosting visitors at one's own home (0.68 95%CI = 0.62,0.73).

Among Democrats, nearly every adult had worn a mask somewhere in the past 7 days: 0.96 (95%CI = 0.94,0.98) for those without and 0.97 (95%CI = 0.95,0.99) for those with medical risk factors. Among Republicans, the proportion wearing a mask somewhere was lower than for Democrats but more common for those with medical risk factors (0.87 95%CI = 0.84,0.90) than those without (0.76 95%CI = 0.72,0.81). Independents were between Democrats and Republicans: 0.88 (95%CI = 0.84,0.91) for Independents without medical risk factors and 0.91 (95%CI = 0.88,0.94) for those with a medical risk factor.

The substantive conclusions about party differences among those with ≥1 medical risk factors persisted when state of residence was controlled (Appendix Table 7).

4. Discussion

Relative to Democrats, Republicans with preexisting conditions were more likely to engage in potentially risky activities, and during these activities they were less likely to always and more likely to never wear

masks. Independents tended to fall between Democrats and Republicans in these behaviors. However, rates of mask wearing were low during many common activities even among Democrats with preexisting medical conditions. Gathering at a residence with family and friends was common but with especially low rates of mask use, regardless of political affiliation, while mask usage was more common for all groups in public spaces such as grocery stores.

The study has limitations. Risk associated with some specific activities may have been reduced by ways not measured in the survey, like physical distancing or visiting outdoors. Not all medical risk factors were measured or measured with as much specificity as identified by CDC, and the high-risk institutionalized population was not studied.

5. Conclusions

These findings suggest that regulations that encourage mask use in public spaces and communication strategies about the value of social distancing and mask wearing that better reach vulnerable individuals of all political affiliations could decrease risky behaviors and decrease the spread of COVID-19. In public settings such as grocery stores, regulations requiring masks may reduce the potency of the signal of political beliefs and values associated with mask wearing, however such regulations are not useful in private settings where we show rates of mask wearing are particularly low. In these settings, messaging from trusted sources, even if these sources differ by political affiliation, may prove more effective than general campaigns. More generally, faith-based leaders and local community leaders may be effective in communicating about protective COVID-19 behaviors in light of the success these types of leaders had in Ebola-related campaigns (Van Bavel et al., 2020). Messages that emphasize a shared fate, with all segments of the population vulnerable to the pandemic, also may reduce political polarization (Van Bavel et al., 2020).

Author credit roles

As corresponding author, I have had full access to the research and writing, and I take full responsibility for the paper. I have participated in

Table 2
Adjusted proportion wearing a mask in the past 7 days, by political affiliation and whether have a medical risk factor for COVID-19.

| Activity | No medical risk factors | | | p-Value for political affiliation differences <0.05 | ≥1 medical risk factors | | | p-Value for political affiliation differences <0.05 | p-Value for differences within political affiliation by presence of medical risk factors <0.05 |
|---|-------------------------|---------------------|---------------------|---|-------------------------|---------------------|---------------------|---|--|
| | Democrat | Republican | Independent | | Democrat | Republican | Independent | | |
| <i>Always wore mask when at activity in past 7 days</i> | | | | | | | | | |
| Bar/club (N = 526) | 0.36 [0.21,0.52] | 0.19 [0.10,0.28] | 0.27 [0.14,0.41] | 1 | 0.36 [0.22,0.50] | 0.22 [0.13,0.30] | 0.28 [0.13,0.43] | | |
| Grocery/pharmacy (N = 3984) | 0.88 [0.84,0.92] | 0.67 [0.62,0.72] | 0.82 [0.77,0.87] | 1, 2 | 0.91 [0.88,0.94] | 0.71 [0.67,0.75] | 0.81 [0.76,0.86] | 1, 2 | |
| Visit friend's home (N = 2177) | 0.13 [0.08,0.18] | 0.03 [0.00,0.06] | 0.08 [0.03,0.13] | 1 | 0.14 [0.09,0.19] | 0.03 [0.01,0.05] | 0.10 [0.05,0.15] | 1 | |
| Host visitors (N = 2187) | 0.11 [0.06,0.16] | 0.01 [0.00,0.02] | 0.04 [0.01,0.08] | 1, 2 | 0.11 [0.08,0.15] | 0.01 [0.00,0.03] | 0.04 [0.01,0.08] | 1, 2 | |
| Gathering of 10+ <6 ft. from noncoresident (N = 3213) | 0.32 [0.20,0.44] | 0.15 [0.10,0.21] | 0.28 [0.15,0.42] | 1 | 0.45 [0.30,0.60] | 0.17 [0.10,0.23] | 0.19 [0.09,0.29] | 1, 2 | 5 |
| <i>Never wore mask when at activity in past 7 days</i> | | | | | | | | | |
| Bar/club (N = 526) | 0.01 [-0.01,0.04] | 0.34 [0.24,0.45] | 0.19 [0.06,0.33] | 1, 2 | 0.08 [0.01,0.14] | 0.24 [0.16,0.32] | 0.17 [0.03,0.32] | 1 | |
| Grocery/pharmacy (N = 3688) | 0.01 [-0.00,0.03] | 0.07 [0.04,0.10] | 0.03 [0.01,0.05] | 1, 2 | 0.00 [-0.00,0.00] | 0.06 [0.04,0.09] | 0.01 [0.00,0.02] | 1 | |
| Visit friend's home (N = 2177) | 0.32 [0.25,0.40] | 0.69 [0.63,0.75] | 0.51 [0.42,0.59] | 1, 2 | 0.30 [0.23,0.36] | 0.63 [0.57,0.68] | 0.38 [0.30,0.46] | 1 | 5 |
| Host visitors (N = 2187) | 0.42 [0.34,0.49] | 0.70 [0.64,0.76] | 0.56 [0.48,0.65] | 1, 2 | 0.41 [0.34,0.47] | 0.68 [0.62,0.73] | 0.51 [0.43,0.59] | 1 | |
| Gathering of 10+ <6 ft. from noncoresident (N = 3213) | 0.27 [0.13,0.41] | 0.38 [0.30,0.47] | 0.28 [0.15,0.41] | 1, 2 | 0.05 [-0.00,0.10] | 0.30 [0.22,0.38] | 0.30 [0.16,0.44] | 1, 2 | 3 |
| Wore mask anywhere last week (N = 4776) | 0.42 [0.04,0.12] | 0.32 [0.27,0.37] | 0.15 [0.10,0.20] | 1, 2 | 0.11 [0.07,0.15] | 0.25 [0.20,0.29] | 0.17 [0.12,0.21] | 1 | 4 |
| Wore mask anywhere last week (N = 4776) | 0.96 [0.94,0.98] | 0.76 [0.72,0.81] | 0.88 [0.84,0.91] | 1, 2 | 0.97 [0.95,0.99] | 0.87 [0.84,0.90] | 0.91 [0.88,0.94] | 1, 2 | 4 |

Notes: Adjusted estimates based on multivariable logistic models controlling for political affiliation, whether ≥1 medical risk factors, the interaction of political affiliation and whether ≥1 medical risk factors, age, gender, race-ethnicity, and education in Appendix Tables 5 and 6. 95% confidence intervals reported in brackets. Statistically significant differences at the 0.05 level in adjusted estimates for Democrats vs Republicans and Democrats vs Independents by number of medical risk factors are denoted 1 and 2, respectively. Statistically significant differences within political affiliation by 0 vs ≥1 medical risk factors for Democrats, Republicans, and Independents are denoted 3, 4 and 5, respectively.

Data Source: Understanding America Study.

all credit roles; Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jupmed.2021.106726>.

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