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Association of Political Party Affiliation With Physical Distancing Among Young Adults During the COVID-19 Pandemic

Public messages about physical distancing during the coronavirus disease 2019 (COVID-19) pandemic in the US have diverged across government officials and news media outlets with different political leanings.[1] Prior studies found that people with Republican (vs other) political party affiliations report less physical distancing.[2,3] These studies used crowdsourced internet samples, inadequately adjusted for confounders, collected data before widespread public health messaging about physical distancing, or included few young adults.[2,3]

Adults aged 18 to 25 years might be inclined to contravene physical distancing guidelines and participate in high-risk social recreational activities that increase the risk of transmitting severe acute respiratory syndrome coronavirus 2.[3] We estimated the associations of political party affiliation with physical distancing behaviors among young adults—a population with high rates of COVID-19.[4]

Methods | Ninth grade high school students (n = 3396) were originally recruited in Los Angeles, California, in 2013, provided informed written consent, and were surveyed (semi) annually about health behaviors.[5] This cross-sectional study analyzed self-report data from the most recent (May 18-August 3, 2020) survey administered online. The University of Southern California institutional review board approved the study. Written informed consent was obtained and the survey responses were analyzed in a deidentified data set.

A political party affiliation survey item with 6 response options was collapsed into 4 categories ("Democrat," "Republican," "Independent," "something else," "don't know" or "prefer not to answer"). Physical distancing (defined as staying ≥6 feet away from others) over the past 2 weeks with 5 response options was made a binary outcome (infrequent ["sometimes" or "rarely"] vs frequent ["usually," "always," or "not been in public places"]). Past 2-week frequency of engaging in 4 social recreational activities (listed in **Table 1**) was measured. Responses to the 4 items ("0," "1," "2-3" [recoded = 2.5], "4-6" [recoded = 5], or "≥7" [recoded = 7] times) were summed into a continuous outcome (range: 0-28) and examined individually as binary outcomes (≥1 vs 0 times).

Associations of political party with physical distancing were estimated in linear (continuous outcomes) or logistic (dichotomous outcomes) regression models, yielding regression weights (*B*; mean difference) or odds ratios (ORs) with 95% CIs, respectively. Planned pairwise tests compared Republicans with each other group. After unadjusted models, we adjusted for a priori confounders (eg, demographics, perceived COVID-19 vulnerability, and youth and adult risk-taking behaviors) (**Table 2**).[1-3] Statistical significance was $P < .05$ (2-tailed).

Results | Of 3134 cohort enrollees with valid contact information invited to take the survey, 2179 (69.5%) agreed. For the analytic sample with exposure and outcome data (n = 2065; mean [SD] age, 21.2 [0.4] years; 61.2% female), descriptive statistics for political party and physical distancing variables and covariates are reported in the left-hand portions of Table 1 and Table 2, respectively. In the analytic sample, 891 respondents identified themselves as Democrats (43.1%), 148 (7.2%) as Republicans, 320 as Independent/other (15.5%), and 706 (34.2%) as don't know/decline to answer; 1737 (84.8%) reported living in Los Angeles County and 210 (10.3%) elsewhere in California.

Infrequent physical distancing was more common in Republican participants (36 [24.3%]) than Democrats (46 [5.2%]; OR, 5.9; 95% CI, 3.7-9.5; $P < .001$), Independent/other (21 [6.6%]; OR, 4.6; 95% CI, 2.6-8.2; $P < .001$), or don't know/decline to answer (40 [5.7%]; OR, 5.4; 95% CI, 3.3-8.8; $P < .001$) groups. Total number of past 2-week social recreational activities was higher among Republican participants (mean [SD], 3.6 [4.2]) than Democrat participants (mean [SD], 1.9 [2.7]; $B = 1.8$; 95% CI, 1.2-2.3; $P < .001$), Independent/other (mean [SD], 2.2 [2.9]; $B = 1.4$; 95% CI, 0.9-2.0; $P < .001$), or don't know/decline to answer (mean [SD], 2.2 [3.2]; $B = 1.4$; 95% CI, 0.8-1.9; $P < .001$) groups. Republicans vs other groups were more likely to visit public indoor venues (eg, malls), visit restaurants/bars/clubs, or attend or host parties with 10 people or more (Table 1). Associations of Republican party affiliation with all outcomes were consistent across unadjusted and covariate-adjusted models (Table 1). Table 2 presents covariate association estimates.

Discussion | In this study of young adults, predominantly living in Los Angeles County or elsewhere in California, self-reported Republican political party affiliation was associated with less frequent physical distancing and participating in social recreational activities that may perpetuate the COVID-19 pandemic. California recommends all residents practice physical distancing and requires mask wearing when outside the home. This study extends prior research[2,3] by extensive adjustment for possible confounders, focusing on young adults, and data collection after widespread public health messaging about physical distancing.

Limitations of the study include a focus on young adults in 1 county in 1 state, possible reporting biases, and the small proportions of Republicans relative to their national prevalence in young adults, which is about 23%.[6] These limitations notwithstanding, our findings suggest that efforts to promote physical distancing among young adults during the

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Table 1. Prevalence and Frequency of Physical Distancing Behaviors in the Past 2 Weeks, by Political Party Affiliation[a]

Outcome	Descriptive statistics, No. (%), or mean (SD)					Association estimates, OR (95% CI) or *B* (95% CI)					
	Overall sample (n = 2065)	Democrat (n = 891)	Republican (n = 148)	Independent/ other (n = 320)	Don't know/decline answer (n = 706)	Republican vs Democrat[a]		Republican vs Independent/other[a]		Republican vs don't know/decline to answer[a]	
						Unadjusted	Adjusted[b]	Unadjusted	Adjusted[b]	Unadjusted	Adjusted[b]
Infrequent physical distancing[c]	143 (6.9)	46 (5.2)	36 (24.3)	21 (6.6)	40 (5.7)	5.9 (3.7-9.5)	4.4 (2.6-7.6)	4.6 (2.6-8.2)	4.2 (2.2-7.9)	5.4 (3.3-8.8)	4.5 (2.5-8.1)
Total No. times engaged in social recreation activities[d]	2.2 (3.1)	1.9 (2.7)	3.6 (4.2)	2.2 (2.9)	2.2 (3.2)	1.8 (1.2-2.3)	1.6 (1.0-2.1)	1.4 (0.9-2.0)	1.4 (0.8-2.0)	1.4 (0.8-1.9)	1.2 (0.7-1.8)
Engaged in activity[e]											
Visit restaurant, bar, or club	695 (33.9)	257 (29.0)	82 (56.6)	120 (37.9)	236 (33.6)	3.2 (2.2-4.6)	3.0 (2.1-4.5)	2.1 (1.4-3.2)	2.1 (1.4-3.3)	2.6 (1.8-3.7)	2.2 (1.5-3.3)
Host party with >10 people	246 (12.0)	100 (11.3)	28 (19.2)	29 (9.1)	89 (12.6)	1.9 (1.2-3.0)	2.3 (1.4-3.9)	2.4 (1.3-4.2)	2.5 (1.4-4.6)	1.6 (1.0-2.6)	1.9 (1.2-3.2)
Attend party with >10 people	650 (31.6)	268 (30.1)	68 (46.9)	91 (28.8)	223 (31.6)	2.0 (1.4-2.9)	2.1 (1.5-3.1)	2.2 (1.5-3.3)	2.4 (1.5-3.6)	1.9 (1.3-2.8)	2.0 (1.4-3.0)
Visit indoor public venue (eg, mall)	671 (32.7)	272 (30.6)	64 (43.8)	108 (34.1)	227 (32.3)	1.8 (1.2-2.5)	2.1 (1.4-3.0)	1.5 (1.0-2.3)	1.7 (1.1-2.5)	1.6 (1.1-2.4)	2.0 (1.4-3.0)

Abbreviations, *B*, mean difference; OR, odds ratio.

[a] Self-identified political party affiliation ("Democrat," "Republican," "Independent" or "something else," "don't know" or "prefer not to answer"), 6 forced-choice response options collapsed into 4 categories.

[b] Estimates from multivariable regression models including all covariates listed in Table 2 as simultaneous regressors and school fixed effects.

[c] Self-reported frequency of practicing physical distancing (staying ≥6 feet away from other people) in the past 2 weeks (infrequent ["sometimes" or "rarely"] vs frequent ["usually," "always," or "not been in public places"]). Descriptive statistics are number (percentage). Association estimates are ORs from logistic regression models (n = 2065).

[d] Self-reported total frequency of times engaged in 4 social recreational activities in the past 2 weeks (each activity rated "0," "1," "2-3" [recoded = 2.5], "4-6" [recoded = 5], or "≥7" [recoded = 7] times; responses summed [range: 0-28]). Descriptive statistics are mean (SD). Association estimates are *B* from linear regression models (n = 2062).

[e] Engaged in respective activity 1 or more vs 0 times in the past 2 weeks. Descriptive statistics are number (percentage). Association estimates are ORs from logistic regression models for bar/restaurant (n = 2050), host party (n = 2057), attend party (n = 2056), indoor recreational venues (n = 2055).

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Table 2. Covariate Descriptive Statistics and Associations With Physical Distancing in the Past 2 Weeks[a]

Covariates	No. (col %) or mean (SD)	Infrequent vs frequent physical distancing, OR (95% CI)[b]	Total No. social recreation activities, *B* (95% CI)[c]	OR (95% CI) Engaged in respective activity ≥1 vs 0 times[d]			
				Visit restaurant, bar, or club	Host party >10 people	Attend party >10 people	Visit indoor public venue
Survey month							
May	127 (6.2)	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
June	1461 (70.8)	0.9 (0.4 to 1.9)	1.2 (0.7 to 1.7)	4.7 (2.5 to 8.7)	1.3 (0.7 to 2.4)	2.1 (1.3 to 3.3)	4.9 (2.6 to 9.4)
July/August	477 (23.1)	0.7 (0.3 to 1.6)	1.7 (1.1 to 2.2)	6.7 (3.5 to 12.5)	1.3 (0.6 to 2.5)	1.8 (1.1 to 3.0)	7.4 (3.8 to 14.3)
Age, y	21.2 (0.4)[e]	0.7 (0.5 to 1.2)	0.1 (-0.3 to 0.4)	1.1 (0.8 to 1.4)	1.2 (0.8 to 1.7)	0.9 (0.7 to 1.2)	1.2 (0.9 to 1.5)
Female vs male sex	1264 (61.2)	1.3 (0.9 to 1.9)	0.3 (0.0 to 0.6)	1.2 (0.9 to 1.4)	1.6 (1.1 to 2.2)	1.1 (0.9 to 1.3)	1.2 (1.0 to 1.5)
Race/ethnicity							
Non-Hispanic White	338 (16.7)	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Non-Hispanic Black	90 (4.4)	1.1 (0.4 to 2.8)	-0.1 (-0.8 to 0.7)	1.0 (0.6 to 1.8)	1.1 (0.5 to 2.3)	1.3 (0.7 to 2.2)	1.6 (0.9 to 2.7)
Hispanic	950 (46.8)	0.7 (0.4 to 1.3)	-0.2 (-0.6 to 0.2)	0.9 (0.7 to 1.2)	1.4 (0.9 to 2.2)	1.3 (0.9 to 1.8)	1.4 (1.0 to 1.9)
Asian	389 (19.2)	0.5 (0.2 to 1.2)	-0.7 (-1.3 to 0.2)	0.7 (0.5 to 1.1)	0.4 (0.2 to 0.8)	0.6 (0.4 to 0.9)	0.7 (0.5 to 1.1)
Other/multiracial	263 (13.0)	0.7 (0.4 to 1.4)	-0.2 (-0.7 to 0.3)	0.9 (0.6 to 1.3)	1.1 (0.6 to 1.9)	1.1 (0.7 to 1.6)	1.0 (0.7 to 1.5)
Location							
Los Angeles County	1737 (84.8)	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Another CA county	210 (10.3)	0.9 (0.5 to 1.8)	-0.4 (-0.8 to 0.0)	1.1 (0.8 to 1.6)	0.8 (0.5 to 1.4)	0.9 (0.6 to 1.2)	0.9 (0.7 to 1.3)
Outside CA	101 (4.9)	1.6 (0.8 to 3.2)	0.7 (0.1 to 1.3)	1.7 (1.1 to 2.7)	0.4 (0.2 to 1.0)	0.9 (0.6 to 1.5)	1.6 (1.0 to 2.5)
Health insurance							
Private	948 (46.7)	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Medicaid/VA/others	888 (43.7)	1.0 (0.7 to 1.5)	0.1 (-0.2 to 0.4)	0.9 (0.7 to 1.1)	1.0 (0.7 to 1.4)	1.2 (1.0 to 1.5)	1.4 (1.1 to 1.7)
No insurance	196 (9.6)	0.8 (0.4 to 1.8)	0.4 (-0.1 to 0.9)	1.1 (0.8 to 1.6)	0.9 (0.5 to 1.5)	1.0 (0.7 to 1.4)	1.7 (1.2 to 2.4)
In degree program	1292 (62.6)	0.6 (0.4 to 0.9)	0.1 (-0.2 to 0.4)	1.4 (1.1 to 1.7)	1.2 (0.9 to 1.6)	0.9 (0.8 to 1.2)	1.0 (0.8 to 1.2)
Lives with parent(s)	1549 (75.3)	0.8 (0.5 to 1.2)	0.1 (-0.2 to 0.4)	1.1 (0.9 to 1.4)	1.2 (0.9 to 1.7)	1.0 (0.8 to 1.3)	1.1 (0.9 to 1.4)
Financial situation[f]	1137 (55.5)	1.1 (0.7 to 1.6)	-0.2 (-0.4 to 0.1)	1.2 (1.0 to 1.5)	0.8 (0.6 to 1.1)	0.9 (0.8 to 1.2)	1.0 (0.8 to 1.2)
Sexual orientation[g]	461 (22.5)	0.5 (0.3 to 0.9)	-0.6 (-0.9 to 0.3)	1.0 (0.8 to 1.3)	0.7 (0.5 to 1.1)	0.9 (0.7 to 1.1)	0.8 (0.6 to 1.0)
Current							
Tobacco use[h]	374 (18.1)	2.1 (1.4 to 3.2)	0.1 (-0.3 to 0.4)	1.3 (1.0 to 1.7)	1.0 (0.6 to 1.4)	1.3 (1.0 to 1.7)	1.0 (0.8 to 1.3)
Alcohol use[h]	1182 (57.3)	1.3 (0.8 to 2.0)	0.4 (0.1 to 0.7)	1.5 (1.2 to 1.9)	1.3 (1.0 to 1.8)	1.6 (1.3 to 2.0)	0.9 (0.8 to 1.2)
Cannabis use[h]	707 (34.3)	0.9 (0.6 to 1.4)	0.4 (0.0 to 0.7)	1.3 (1.0 to 1.6)	1.2 (0.8 to 1.6)	1.2 (1.0 to 1.5)	1.3 (1.0 to 1.7)
Other drug use[h]	117 (5.7)	1.8 (0.9 to 3.5)	1.1 (0.5 to 1.7)	1.4 (0.9 to 2.1)	1.0 (0.5 to 1.8)	1.5 (1.0 to 2.2)	1.6 (1.1 to 2.5)
Perceived health[i]	393 (19.1)[e]	1.7 (1.1 to 2.6)	0.1 (-0.2 to 0.5)	0.9 (0.7 to 1.1)	1.0 (0.7 to 1.5)	0.9 (0.7 to 1.2)	1.1 (0.8 to 1.4)
Possibly had COVID-19[j]	120 (5.8)	1.1 (0.5 to 2.3)	-0.1 (-0.6 to 0.5)	0.8 (0.5 to 1.2)	0.9 (0.5 to 1.7)	1.1 (0.7 to 1.6)	0.9 (0.6 to 1.4)
Perceived chance of contracting COVID-19[k,l]	36.1 (24.3)[e]	1.1 (0.9 to 1.4)	0.1 (0.0 to 0.3)	1.0 (0.9 to 1.1)	1.1 (0.9 to 1.3)	1.0 (0.9 to 1.2)	1.1 (0.9 to 1.2)

(continued)

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Table 2. Covariate Descriptive Statistics and Associations With Physical Distancing in the Past 2 Weeks[a] (continued)

Covariates	No. (col %) or mean (SD)	Infrequent vs frequent physical distancing, OR (95% CI)[b]	Total No. social recreation activities, *B* (95% CI)[c]	OR (95% CI) Engaged in respective activity ≥1 vs 0 times[d]			
				Visit restaurant, bar, or club	Host party >10 people	Attend party >10 people	Visit indoor public venue
Perceived chance of dying if got COVID-19[l,m]	21.2 (24.3)[e]	0.7 (0.6 to 0.9)	-0.1 (-0.2 to 0.0)	1.0 (0.9 to 1.1)	1.0 (0.9 to 1.2)	1.0 (0.9 to 1.1)	0.9 (0.8 to 1.0)
Age 14							
Substance use[n]	749 (36.6)	1.4 (0.9 to 2.1)	0.1 (-0.2 to 0.5)	1.1 (0.9 to 1.4)	0.9 (0.6 to 1.2)	1.2 (0.9 to 1.5)	0.9 (0.7 to 1.1)
Impulsivity[l,o]	2.4 (1.5)[e]	0.9 (0.7 to 1.1)	0.1 (0.0 to 0.3)	1.1 (1.0 to 1.2)	1.1 (0.9 to 1.2)	1.1 (1.0 to 1.3)	1.0 (0.9 to 1.1)
Delinquency[l,p]	15.2 (4.5)[e]	1.2 (1.0 to 1.4)	0.1 (0.0 to 0.3)	1.0 (0.9 to 1.1)	1.1 (1.0 to 1.3)	1.0 (0.9 to 1.1)	1.1 (1.0 to 1.2)

Abbreviations, *B*, mean difference; CA, California; col, column percent; OR, odds ratio; VA, Veterans Affairs.

[a] Estimates from multivariable regression models including all covariates and political party affiliation as simultaneous regressors and high school fixed effects. Missing covariate data (missing range: 0-107) managed with multi-imputation using 20 multiply-imputed data sets.

[b] Logistic regression model for infrequent physical distancing in past 2 weeks (n = 2065).

[c] Linear regression model for total times engaged in 4 social recreational activities over the past 2 weeks (range: 0-28) (n = 2062).

[d] Logistic regression models for bar/restaurant (n = 2050), host party (n = 2057), attend party (n = 2056), indoor recreational places (n = 2055).

[e] Mean (SD)

[f] "Meet needs," "meet basic expenses," or "don't meet basic expenses" vs "live comfortably."

[g] Lesbian, gay, bisexual, queer, questioning, or other sexual orientation vs straight.

[h] Past 30-day use of any tobacco product (cigarettes, electronic cigarettes with nicotine, cigars, or hookah; yes/no), alcohol (yes/no), any cannabis product (cannabis vaping, concentrates, edibles, or blunts; yes/no), or any other drug (any illicit drug or nonmedical use of prescription drug; yes/no).

[i] "In general, would you say your health is 'fair,' or 'poor' vs 'good,' 'very good,' or 'excellent'?"

[j] "Have you had COVID-19?" "Yes" or "maybe" vs "no."

[k] "How likely do you think it is that you will contract COVID-19?" ("no chance" to "will definitely get it"), range: 0-100.

[l] Regression model estimates use rescaled variable into SD unit scores (M = 0, SD = 1).

[m] "If you were to get COVID-19, how likely do you think it would be that you would die?" ("no chance" to "definitely"), range: 0-100.

[n] Ever use of any psychoactive substance for fun or to get high in 9th grade (fall 2013) survey wave.

[o] Temperament and Character Inventory impulsivity scale (5 items; eg, "I do things based on how I feel in the moment") in 9th grade, range, 0-5.

[p] Sum of past 6-month frequency of 11 behaviors (eg, stealing, lying to parents; 1 [never] to 6 [≥10 times]) in 9th grade, range: 11-66.

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COVID-19 pandemic should consider the role of political affiliation.

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Accepted for Publication: October 3, 2020.

Published Online: December 14, 2020. doi:10.1001/jamainternmed.2020.6898

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Obtained funding: Leventhal, Barrington-Trimis, McConnell, Unger.
Administrative, technical, or material support: Leventhal, Sussman, Cho.
Supervision: Leventhal, McConnell, Unger.

Conflict of Interest Disclosures: None reported.

Funding/Support: Research reported in this publication was supported by the National Cancer Institute under Award Number R01CA229617 (Barrington-Trimis/Leventhal) and by the National Institute on Drug Abuse Award Number K24DA048160. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Role of the Funder/Sponsor: The National Cancer Institute and the National Institute on Drug Abuse had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

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COMMENT & RESPONSE

Variation in Biosimilar Uptake in Europe

To the Editor We are pleased with the continuous focus on biosimilars to reduce the cost of biological drugs. In their Research Letter, Chen and colleagues[1] describe the shift in use of infliximab from biooriginator to biosimilar in patients enrolled in Medicare fee-for-service. In the 2 years after launch, infliximab biosimilar uptake was only 10%. The authors[1] compare this with a 40% uptake of filgrastim biosimilars and speculate that the modest infliximab shift could be due to barriers to adopting biosimilars for chronic conditions. They further suggest that one of the reasons could be physicians being hesitant to switch patients already treated with the biooriginator due to unfamiliarity with the biosimilar.[1] The authors argue that the experience of patients in the US is similar to that of patients in Europe, but we believe this is too simplistic a comparison and would like to emphasize that implementation varies widely across Europe.

In Denmark, we have conducted several near-complete shifts from biooriginator to biosimilar, even in drugs used for chronic diseases, with the sole purpose of cutting expenses of pharmacological treatment. The shifts have included shifting patients already treated with the biooriginator. In 2015, a well-coordinated shift from infliximab biooriginator to biosimilar led to 97% biosimilar uptake within the first year, which reduced the total cost of infliximab by two-thirds.[2] In 2016, a successful shift of etanercept was conducted with a biosimilar uptake of 85% only 6 months after patent expiration.[2] In December 2018, only 2 months after the Danish patent expiration of the adalimumab biooriginator, the biosimilar uptake was more than 95%, which led to cost reductions of more than 80%.[3] All examples are of drugs used to treat the same chronic conditions as are treated with infliximab. We believe that the most important factors in making a successful shift to biosimilar drugs in Denmark were determination, hearings and discussions with clinicians, economic incitements, and, most importantly, thorough planning.

While the US has low biosimilar uptake, the rest of the world gains knowledge on biosimilars being a safe, effective, and less expensive alternative to biooriginators, in the exact same way as generics.[4,5] In the US, the continued focus should be on removing the legal, financial, and regulatory barriers that hamper the use of biosimilars, leading to reduced competition and lack of cost savings. From our perspective there is also a continuous need for educating patients and prescribers that the US Food and Drug Administration is ensuring that biosimilars available in the US are effective and safe.

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Published Online: December 7, 2020. doi:10.1001/jamainternmed.2020.6567

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