

**Manuscript title:** Demographic, structural, and psychological predictors of risk-increasing and mask wearing behaviors among US adults between December 2020–March 2021

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**Abstract (198/200 words)**

**Objectives.** To assess demographic, structural, and psychological predictors of risk-increasing and risk-decreasing behaviors. **Methods.** This study used data from an online longitudinal, three-wave COVID-19 survey (12/20 to 03/21) regarding the behaviors, attitudes, and experiences of US Veteran (n=584) and non-Veteran (n=346) adults. **Results.** Inability to get groceries delivered emerged as the strongest predictor of more frequent risk-increasing behavior across all timepoints. Other consistent predictors of more frequent risk-increasing behavior and less frequent mask wearing included less worry about getting COVID-19, disbelief in science, belief in COVID-19 conspiracies, and negative perceptions of the state response. No demographic factor consistently predicted risk-increasing behavior or mask wearing, though different demographic predictors emerged for more frequent risk-increasing behaviors (e.g., higher health literacy) and mask-wearing (e.g., older age and urban residence) at certain timepoints. The most frequently endorsed reasons for having contact with others concerned health-related (food, medical care, and exercise) and social needs (seeing friends/family and boredom). **Conclusions.** These findings highlight key individual-level determinants of risk-increasing behaviors and mask wearing which encompass demographic, structural, and psychological factors. **Practice implications.** Findings can support public health experts and health communicators promote engagement with risk-reducing behaviors and address key barriers to engaging in these behaviors.

**Key words.** COVID-19, behavior change, psychological factors, public health measures, health behaviors, risk behaviors

## 1. Introduction

Throughout the COVID-19 pandemic, the effectiveness of non-pharmaceutical interventions has relied heavily on public avoidance of risk-increasing behaviors (e.g., avoiding large gatherings and optional social events) and adoption of risk-decreasing behaviors (e.g., wearing masks when in public). Due to sub-optimal vaccine uptake and the emergence of new COVID-19 variants,[1,2] engagement with non-pharmaceutical interventions remains an important strategy for individuals to protect themselves from being infected and limiting the impact of COVID-19 within their communities. For effective health communication and education, both at the individual-level (e.g., direct conversations with patients) and population-level (e.g., public health messaging), it is necessary to understand the key factors that might explain why people may or may not engage with certain health behaviors. Therefore, it is important for researchers, policy makers, health communicators, and medical practitioners to identify the factors associated with engaging in COVID-19 related risk behaviors, such as participating in large social gatherings, going on optional travel, and not wearing masks when in public.[3]

Research investigating factors associated with individuals' COVID-19 related risk behaviors include, among others, demographic characteristics (e.g., age, gender, race/ethnicity, and income),[4–6] psychological factors (e.g., perceived social norms, moral obligations, and risk perceptions),[5,7,8] and political beliefs (e.g., trust in government and political ideology).[5,9] These findings played an important role in the development of strategies for communicating with people about their COVID-19 related health behaviors in ways that matter to them and that address their concerns and values,[10,11] which represents a fundamental shared goal for public health and patient education.

However, research that simultaneously examines multiple factors associated with COVID-19 related risk behaviors is limited, making it difficult to assess the relative influence of the individual factors or their interactions. For example, some research has only investigated the associations between individuals' demographic characteristics and adherence to non-pharmaceutical guidelines,[12] whereas other research only examined the associations between psychological factors and specific risk behaviors.[7,8] In addition, the pandemic and recommendations for public behavior are constantly changing, requiring longitudinal data to capture nuances in individuals' behaviors across different stages of the pandemic, which may be missed by cross-sectional research taken at a single time point. As a result, the development of health communication strategies and interventions, which benefit from tailoring their approach to factors that have the most consistent or notable impact on behaviors when considered together,[10,11] may be undermined by this research gap.

The goal of the current research is to examine the associations between COVID-19 risk behaviors and a range of individual factors of US resident adults, including demographic characteristics, structural factors, and psychological factors over three timepoints between December-2020 and March-2021. Additionally, given that previous research indicates it is not always possible for individuals to engage in COVID-19 infection control guidelines,[6] we further sought to understand participants' reasons for not engaging in social distancing despite public health recommendations for doing so.

Based on extant research, we hypothesized that individuals who are younger,[5] residing in urban areas,[13,14] non-US Veterans,[15] non-Hispanic white,[16,17] with fewer comorbidities,[4] lower health literacy,[18] and lower subjective numeracy[19] would report more frequently engaging in risk-increasing behaviors (e.g., going to gatherings of 10 people or more) and less frequent risk-reducing behavior (e.g., wearing a mask when in public).

Extending our model beyond these demographic factors, we expected that being less worried about COVID-19,[8,20] lower COVID-19 risk perceptions,[8,21] not being able to work from home,[6,22] worse internet quality,[6,23] not being able to get groceries delivered,[4,24] less help from friends/family,[21] less trust in health care and disbelief in science,[5,25] greater belief in COVID-19 conspiracies,[26–28] more conservative political views,[5,9] and negative views of the state response to the COVID-19 pandemic[5] would predict more frequent risk-increasing behaviors and less frequent risk-reducing behaviors while accounting for respondents' demographic characteristics.

## **2. Methods**

### **2.1. Recruitment and respondents.**

Respondents were recruited and compensated by Qualtrics for participating in a three-wave online longitudinal study.[29] The first survey was conducted between December 2-27, 2020. All respondents who completed the first survey were invited to the second survey, conducted between January 21 and February 6, 2021 and to the third survey, conducted between March 8-23, 2021. This study was conducted in English language and was deemed exempt by University of Utah and the Salt Lake City VA IRBs.

## **2.2. Procedure and measures.**

Respondents completed three surveys about their behaviors, well-being, healthcare experiences, and attitudes regarding the COVID-19 pandemic (all surveys available in the supplementary materials). The January and March surveys contained two short messaging experiments about features of COVID-19 vaccines and are reported separately.[30,31] Description of all measures included in these analyses (e.g., items, response scales, and descriptive statistics) are available in the supplementary materials.

### **2.2.1. Primary outcome measures.**

Our primary outcome measures were self-reported frequency of engaging in risk-increasing behaviors and wearing a mask when in public. We measured risk-increasing behaviors by asking how frequently respondents were engaging in five behaviors (e.g., “Going to gatherings of 10 people or more”). These measures demonstrated good reliability across all three surveys (Wave 1, Cronbach’s alpha [ $\alpha$ ]=.83; Wave 2  $\alpha$ =.83; Wave 3  $\alpha$ =.87) and were averaged at each timepoint for analyses. We measured frequency of mask wearing with a single question (“Wearing a mask over your nose and mouth when you are in a public place (e.g., a store)”). Risk-increasing and mask wearing questions were measured on a 6-point scale (1=Never; 6=Very frequently) and in all three surveys.

### **2.2.2. Predictor variables.**

Predictor variables covered three domains: Demographic factors, structural factors, and psychological factors. *Demographic factors* included respondents’ age, residence location (rural

vs. urban), Veteran status (non-Veteran vs. Veteran), total number of comorbidities,[32] health literacy,[33] numeracy,[34,35] and Race/Ethnicity. *Structural factors* included respondents' capacity to work from home, to order groceries for delivery, quality of internet connection, and having friends or family members who have helped so they did not have to go out in public. *Psychological factors* included respondents' worry about getting COVID-19 and risk perceptions about their likelihood of getting COVID-19 and, if they did get COVID-19, their likelihood of being hospitalized and their likelihood of dying. Additional measures included respondents' trust in healthcare,[36] disbelief in science,[37] belief in COVID-19 related conspiracies,[38] political ideology, and attitudes towards the state government response to the pandemic.

### **2.3. Pre-registered analysis.**

All analyses were conducted in R studio Version 1.4.1106.[39] Our analytical approach was to first run correlations to assess the bivariate relationships between predictor variables and primary outcome measures (frequency of engaging in risk-increasing behaviors and wearing a mask when in public). Next, we ran a baseline multiple linear regression model to test whether the demographic factors predicted risk-increasing behaviors in December 2020. Using a hierarchical approach, we then introduced all of the remaining measures to create the full model. We repeated these analyses for the second (January-2021) and third (March-2021) timepoints and with frequency of mask wearing when in public as the dependent variable.

### **2.4. Exploratory analysis.**

In an additional exploratory analysis, we re-ran our preregistered analysis with respondents' vaccination status (received  $\geq 1$  dose of a COVID-19 vaccine or not) included as a predictor of



risk-increasing behaviors and mask wearing in January-2021 and March-2021. We also report the reasons given by respondents in the December-2020 survey as to why they were not always able to distance from others.

### **3. Results**

#### **3.1. Respondents**

A total of 930 respondents completed all three surveys and were included in the analyses (completion rate: 44% overall, 55% for Veterans, and 33% for non-Veterans). Respondents in our analytic sample had a median age between 55 and 74 years old; most respondents identified as male (735 (79%)), US Veterans (584 (63%)), and with a median household income between \$50,000-\$99,999. The majority of respondents identified as non-Hispanic White (720 (77%)), 92 respondents (10%) identified as Hispanic, and 63 respondents (7%) identified as non-Hispanic Black. Over half of respondents (440 (64%)) reported having a pre-existing condition that made them more vulnerable to COVID-19. In January, 165 respondents (18%) reported having received a COVID-19 vaccine. Out of these 165 respondents, almost all had only received their first dose (160 (97%)) with the few remaining respondents (5 (3%)) having received two doses. The number of respondents reported having received a COVID-19 vaccine increased to 620 (67%) in March, with 206 (33%) reporting having received their first dose and 414 (67%) having received two doses. Full demographics are shown in Table 1.

#### **3.2. Survey completers and non-completers.**

We compared respondents who completed all three surveys (completers) to those who completed only one or two surveys (non-completers). Compared to non-completers, completers were older

( $\geq 55$  yrs) and more likely to report their gender identity as male (see Table 2). Non-completers were more likely to report that they were non-Hispanic White, being U.S military Veterans, having annual household income  $\geq \$50,000$ , and residing in an urban location. On average, non-completers reported lower health literacy and numeracy, lower trust in healthcare, greater disbelief in science, and being angrier with the state response to COVID-19 than completers. In addition, non-completers were more likely to report having help from friends and family so that they do not have to go out in public, getting groceries delivered, and working from home, but less likely to report having good quality internet. Further details are available on the project repository (<https://doi.org/10.17605/OSF.IO/63GTE>).[29]

### **3.3. Pre-registered results.**

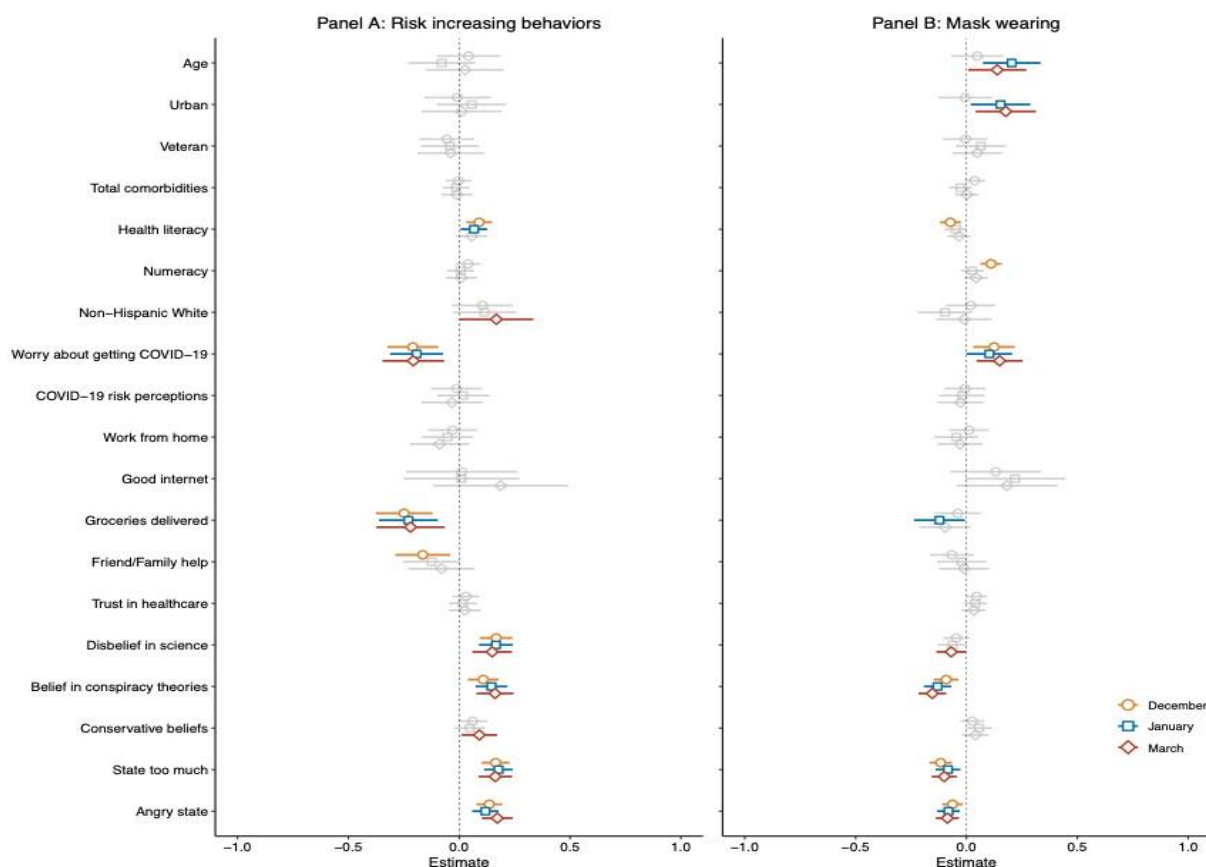
Results from the baseline regression models described below are shown in Tables 3 and 4 alongside the results of the full models, which are described below and shown in Figure 1.

#### **3.3.1. Predictors of risk-increasing behaviors.**

In the full model, more frequently engaging in risk-increasing behaviors was associated with lower health literacy (in December-2020 and January-2021) and being non-Hispanic White (in March-2021), disbelief in science, greater belief in conspiracies, feeling that the state was doing too much to limit the spread of COVID-19, and anger with the state response (at all three time points), and having more conservative beliefs (in March-2021). Less frequently engaging in risk-increasing behaviors was associated with being more worried about getting COVID-19 and getting groceries delivered (at all three timepoints) and having help from friends and family so that participants did not have to go out in public themselves (in December-2020).

### 3.3.2. Predictors of mask-wearing.

In the full model, more frequently wearing a mask when in public was associated with older age and living in an urban location (in January-2021 and March-2021), higher health literacy and higher numeracy (in December-2020), being more worried about getting COVID-19 predicted (at all three timepoints), and getting groceries delivered (in January-2021). Less frequently wearing a mask when in public was associated with greater belief in conspiracies, feeling that the state was doing too much to limit the spread of COVID-19, and anger with the state response (at all three time points) and disbelief in science (in March-2021).



**Figure 1.** Plot of regression models for risk-increasing behavior and mask wearing across all three timepoints. The point shapes represent the standardized regression coefficient with error bars for 95% confidence intervals. Significant predictors ( $p < .05$ ) are highlighted in color with non-significant predictors in grey.

### **3.4. Exploratory results.**

#### **3.4.1. Impact of vaccination status.**

Overall, the findings from the pre-registered analyses remained consistent following the inclusion of respondents' vaccination status as a predictor of risk-increasing behaviors and mask wearing (supplementary Tables 3 and 4). Notable differences from the original analyses included, having received at least one dose of a COVID-19 vaccine emerging as a statistically significant predictor of mask wearing in March only and three previously statistically significant predictors no longer reaching the cut-off for statistically significant. These were being non-Hispanic White ( $p=.053$ ), which was a statistically significant predictor of risk-increasing behaviors in January in the original analyses ( $p=.048$ ), as well as older age ( $p=.290$ ) and disbelief in science ( $p=.071$ ) which were statistically significant predictors of mask wearing in March in the original analyses ( $p=.038$  and  $p=.043$ , respectively).

#### **3.4.2. Reasons for having contact with other people.**

In addition to the regression results, to better understand the barriers to distancing from others, we examined participants' responses to a question in the December-2020 survey asking their reasons for not always being able to do so. Table 5 presents the frequencies of reasons chosen by the respondents. Getting food and seeing family in person were the two most cited reasons for frequent contact with others. Respondents also endorsed a range of other reasons for having some contact with others, which included needing to exercise, exercising their freedom to do what they want, boredom or getting tired of being inside the house, seeing friends, going to the pharmacy, and getting medical care.

## **4. Discussion and Conclusion**

### **4.1. Discussion**

The present study provides evidence on the demographic, structural, and psychological factors associated with individuals' risk increasing behaviors (e.g., Going to gatherings of 10 people or more) and public mask wearing over a four-month period during the pandemic (December 2020-March 2021). Our findings align with previous research suggesting that a plethora of variables account for individuals' COVID-19 related risk behaviors[4,5,7,12,40] and offer unique evidence on the presence and magnitude of these relationships when considered together, which can help guide individual-level conversations with patients and population-level public health communications. In addition, our findings provide insights into the behaviors of US adults during a period of the pandemic which has been understudied in comparison to the period preceding the rollout of the COVID-19 vaccines.

A number of prior studies reported on the influence of demographic factors in public COVID-19 related risk behaviors.[4,41,42] In the present study, we found that age, health literacy, numeracy, and Race/Ethnicity predicted reported frequency of risk-increasing behaviors and mask wearing, but not at all timepoints. Specifically, we found unique demographic predictors of more frequently engaging in risk-increasing behaviors (identifying as non-Hispanic White and lower health literacy) and more frequent mask wearing (older age, urban residence, and higher subjective numeracy) at individual timepoints. Although older age was a significant predictor of more frequently wearing a mask when in public during waves 2 (January 2021) and 3 (March 2021), it is important to note that whilst accounting for structural and psychological factors, no

demographic factor consistently predicted risk-increasing behavior or mask wearing across all three timepoints in our study.

Overall, we found that risk-increasing behaviors and wearing a mask when in public shared several similar consistent predictors. Aligned with prior work conducted at different periods of the pandemic and in different countries, we found that being more worried about COVID-19[43] and having greater belief in science[44] predicted lower frequency of risk-increasing behaviors and higher frequency of mask wearing, whereas greater belief in COVID-19 conspiracies[26,45] and negative attitudes towards the state response to the pandemic[5] predicted more frequent risk-increasing behaviors and less frequent mask wearing. These findings are aligned with prior work showing the importance of philosophical beliefs on engagement with COVID-19 health behaviors [46] and reinforce the need for developing effective methods for communicating health-related risk information and earning the trust of patients and the general public.[47] In addition, these findings also highlight the challenge to health communicators and educators posed by the rapid rise in the prevalence of COVID-19 related conspiracy theories and by the politicization of public health recommendations and communications during the pandemic.

Across the three timepoints there was consistent evidence that the variables positively associated with our measure of risk-increasing behaviors tended to also be negatively associated with the measure of risk-reducing behavior (wearing a mask when in public). However, reported frequency of engaging in risk-increasing behaviors and mask wearing were also associated with different sets of variables, which are important to consider when developing and communicating

public health guidelines regarding COVID-19 mitigation moving forwards as well as for future health crises.

In particular, we found that structural factors such as having groceries delivered and support from friends/family were consistent and important predictors of reporting lower frequency of engaging in risk-increasing behaviors, but that this was not the case for mask wearing. These differences are aligned with studies of smart phone mobility-data[6,48] which have found that many individuals who may be willing to engage with public health guidelines have likely been unable to do so due to a range of external factors such as needing to go to work in-person with others or, as in the present study, go and get their shopping in-person.

These findings on the influence of structural factors on behavior were further supported by participants' reported reasons for having contact with others. Respondents who were not able to always distance from others at the time of the December-2020 survey reported health-related (food, medical care, and exercise) and social (desires to see friends/family in person and feelings of boredom) needs as the most common causes for having contact with others. These findings echo prior calls for ensuring adequate structural support to help people avoid engaging in risk-increasing behaviors, particularly for those in low-income communities.[6,48]

A subset of respondents indicated that not always distancing from others was an expression of their freedom to do what they want. The preference for individual expressions of liberty over collective benefit has been noted in other studies as a primary justification for why people are not fully honest or consistent about following COVID-19 guidelines.[46,49] Relatedly, anger and

disagreement with the state response to the COVID-19 pandemic were consistent predictors of greater reported frequency of risk-increasing behavior and lower reported frequency of wearing masks when in public. These findings further emphasize the importance and value of effective communication to promote trust in public health efforts and engender public support for policies and infection control guidelines.[50]

The effect sizes for the relationships observed in the present study are mostly consistent with unit changes in the predictor variables corresponding to small-to-moderate changes in the frequency of engaging in risk-increasing behaviors and mask wearing. The magnitude of these relationships is aligned with studies from other periods of the pandemic[4,7,20,40,45], enhancing confidence in the reliability of these findings and their relevance for guiding health communication and patient counselling efforts.

The COVID-19 vaccination rollout in the US began after the first survey had been sent out to respondents. We conducted an exploratory analysis to assess the impact of receiving  $\geq 1$  dose of a COVID-19 vaccination on respondents' behaviors in the January and March surveys. COVID-19 vaccination was positively associated with increased frequency of wearing a mask when in public in the March survey but otherwise did not appear to substantially impact respondents' frequency of risk-increasing behaviors or mask wearing in public when considered alongside other factors. These findings are aligned with prior studies which have found that engagement in COVID-19 related health behaviors did not alter substantially during the initial months of the COVID-19 vaccine rollout.[51–54]



Our results should be considered in light of several limitations. For instance, our sample included English speaking US Veteran and non-Veteran adults who were able and willing to complete a longitudinal online survey over a four-month period during the pandemic. Thus, while our sample provides important insights into the behaviors, beliefs, and attitudes of US adults during a critical period during the pandemic, it cannot be considered representative of the general population. As with many studies conducted during the pandemic, tracking respondents more frequently and over a longer study period would have allowed further insights into their attitudes and behaviors, but was not possible in the present study due to practical considerations (e.g., cost and attrition rates). Consistent measurement of predictor variables across all time would also have allowed for a more robust analytical approach. In addition, it is important to acknowledge that the respondents who did not complete all three surveys may have had different experiences to those included in the analyses who enrolled and completed the study, which we were unable to measure. Our findings are also reliant on the accuracy and honesty of self-reported survey responses to the somewhat sensitive topics, which have known limitations.[55]

## **4.2. Conclusion**

Public behavior continues to play a critical role in the spread and the impact of COVID-19. Overall, the current research adds to our understanding of the individual determinants of risk-increasing behaviors and mask wearing during the COVID-19 pandemic that encompass demographic, structural, and psychological factors during the early stages of the vaccine rollout in the US.

## **4.1. Practice implications**

The present findings highlight the plethora of factors associated with important health behaviors during a critical period of the COVID-19 pandemic, with important implications for public health communication and education efforts in the current health crises as well as future ones.

Taken together these findings further illustrate that there is no quick fix for promoting engagement with health guidelines among the public and patients[47,56]. Instead, these findings speak to the need for continued efforts to develop communication and counselling strategies to address concerns at the forefront of disengagement with health recommendations among patients and members of the public. For instance, these findings reinforce the need for public health research to develop and test methods for communicating health information to that ensure all people are fully informed of the risks of COVID-19 as the virus continues to evolve and circulate throughout communities. Identifying strategies for engaging with the public and patients in order to build trust represents another critical goal for public health research and may go a long way to addressing the growing influence of conspiracy beliefs, political partisanship, and disengagement with public health and science generally. In addition, these findings point to influential structural barriers (e.g., inability to get groceries online) that can reduce engagement in risk-reducing behaviors even among those who are keen to do so. Improving structural support, particularly in communities most affected by these barriers, is therefore critical for maximising the benefits of public health measures reliant on public engagement.

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<b>Table 1. Respondent demographics overall and according to Veteran status.</b>			
	Overall (n=930)	Veteran (n=584)	Non-Veteran (n=346)
Age in yrs – no. (%)			
18 to 34	37 (4)	0 (0)	37 (11)
35 to 54	87 (9)	16 (3)	71 (21)
55 to 74	591 (64)	390 (67)	201 (58)
75 or older	213 (23)	176 (30)	37 (10)
Did not respond	2 (<1)	2 (<1)	0 (0)
Gender – n (%)			
Female	193 (21)	38 (7)	155 (45)
Male	735 (79)	545 (93)	190 (55)
Non-binary/Third gender or Transgender man/Transman	2 (<1)	1 (<1)	1 (<1)
Race/Ethnicity – no. (%)			
Non-Hispanic White	720 (77)	447 (77)	273 (79)
Non-Hispanic Black	64 (7)	44 (8)	20 (6)
Hispanic	92 (10)	61 (10)	31 (9)
Asian/Asian American	26 (3)	9 (2)	17 (5)
American Indian/Alaskan Native	4 (<1)	4 (1)	0 (0)
Native Hawaiian/Other Pacific Islander	2 (<1)	2 (<1)	0 (0)
Another race	14 (2)	11 (2)	3 (1)
Multiracial	8 (1)	6 (1)	2 (1)
Income – no. (%)			
\$0 - \$49k	206 (22)	117 (20)	89 (26)
\$50K to \$99K	362 (39)	232 (40)	130 (38)
\$100K or more	325 (35)	216 (37)	109 (32)
Prefer not to say	37 (4)	19 (3)	18 (5)
Residence – no. (%)			
Rural	151 (16)	96 (16)	55 (16)
Small city (<100,000)	159 (17)	101 (17)	58 (17)
Suburban, near a large city	457 (49)	277 (47)	180 (52)
Mid-sized city (100,000-1million)	90 (10)	60 (10)	30 (9)
large city (>1million)	70 (8)	47 (8)	23 (7)
Other	3 (<1)	3 (1)	0 (0)
Vaccination status in January 2021 – no. (%)			
None	765 (82)	463 (79)	302 (87)
One dose	160 (17)	118 (20)	42 (12)
Two doses	5 (1)	3 (1)	2 (1)
Vaccination status in March 2021 – no. (%)			
None (March)	310 (33)	146 (25)	164 (47)
One dose (March)	206 (22)	128 (22)	78 (23)
Two doses (March)	414 (45)	310 (53)	104 (30)

<b>Table 2.</b> Demographic characteristics among completers and non-completers				
		Completers ( <i>n</i> =930)	Non-completers ( <i>n</i> =1155)	p
Age in yrs – no. (%)				
	18 to 34	234 (20.3)	37 (4.0)	<.001*
	35 to 54	293 (25.4)	87 (9.4)	
	55 to 74	458 (39.7)	591 (63.5)	
	75 or older	165 (14.3)	213 (22.9)	
	Did not respond	5 (0.4)	2 (0.2)	
Gender – n (%)				
	Female	442 (38.3)	193 (20.8)	<.001*
	Male	697 (60.3)	735 (79.0)	
	Non-binary/Third gender or Transgender man/Transman or prefer to self-describe	9 (0.8)	2 (0.2)	
	Prefer not to say	7 (0.6)	0 (0)	
Race/Ethnicity – no. (%)				
	Any other Race/Ethnicity	319 (27.6)	210 (22.6)	.010
	Non-Hispanic White	836 (72.4)	720 (77.4)	
Income – no. (%)				
	\$0 - \$49k	433 (37.5)	206 (22.2)	<.001
	\$50K to \$99K	368 (31.9)	362 (38.9)	
	\$100K or more	285 (24.7)	325 (34.9)	
	Prefer not to say	69 (6.0)	37 (4.0)	
Residence – no. (%)				
	Rural	241 (20.9)	151 (16.3)	.004
	Urban	907 (78.8)	776 (83.7)	
	Other	3 (0.3)	0 (0)	
Veteran status – no. (%)				
	Non-Veteran	679 (58.8)	346 (37.2)	<.001
	Veteran	476 (41.2)	584 (62.8)	
Total comorbidities				
	Mean (SD)	1.6 (1.9)	1.5 (1.4)	.060
Health literacy				
	Mean (SD)	1.6 (1.1)	1.2 (0.7)	<.001
Numeracy				
	Mean (SD)	4.5 (1.4)	5.0 (1.1)	<.001
Worry about getting COVID-19				
	Mean (SD)	3.0 (1.4)	2.9 (1.3)	.107
COVID-19 risk perceptions				
	Mean (SD)	2.5 (1.1)	2.5 (0.9)	.161
Friend/Family help – no. (%)				

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No	692 (59.9)	660 (71.0)	<.001
Yes	463 (40.1)	270 (29.0)	
Groceries delivered – no. (%)			
No	701 (60.7)	693 (74.5)	<.001
Yes	454 (39.3)	237 (25.5)	
Good internet – no. (%)			
No	153 (14.3)	46 (5.5)	<.001
Yes	919 (85.7)	798 (94.5)	
Work from home – no. (%)			
No	526 (45.7)	490 (53.1)	.001
Yes	626 (54.3)	433 (46.9)	
Trust in healthcare			
Mean (SD)	4.0 (1.1)	4.3 (1.1)	<.001
Disbelief in science			
Mean (SD)	3.7 (1.5)	3.3 (1.6)	<.001
State too much			
Mean (SD)	2.6 (1.1)	2.6 (1.1)	.833
Angry state			
Mean (SD)	2.9 (1.4)	2.8 (1.4)	.009

Chi-squared test with Yate's continuity correction used to assess for associations between categories (\*indicates Fisher's Exact test) and Welch's independent samples t-test to compare means.

<b>Table 3. Regression coefficients from the baseline and full models predicting reported frequency of risk-increasing behaviors.</b>						
	December-2020		January-2021		March-2021	
	Baseline model	Full model	Baseline model	Full model	Baseline model	Full model
Age	0.02 (-0.15, 0.18)	0.04 (-0.10, 0.19)	-0.11 (-0.28, 0.06)	-0.08 (-0.23, 0.07)	0.01 (-0.18, 0.20)	0.03 (-0.15, 0.20)
Urban	-0.16 (-0.32, 0.01)	-0.01 (-0.16, 0.14)	-0.11 (-0.29, 0.06)	0.06 (-0.10, 0.21)	-0.16 (-0.36, 0.04)	0.01 (-0.17, 0.19)
Veteran	0.02 (-0.12, 0.15)	-0.05 (-0.18, 0.07)	0.02 (-0.12, 0.16)	-0.04 (-0.17, 0.09)	0.05 (-0.11, 0.22)	-0.04 (-0.19, 0.11)
Total comorbidities	-0.03 (-0.08, 0.01)	-0.00 (-0.04, 0.04)	-0.04 (-0.09, 0.01)	-0.01 (-0.05, 0.03)	-0.04 (-0.09, 0.02)	-0.01 (-0.06, 0.04)
Health literacy	<b>0.14 (0.05, 0.23)</b>	<b>0.13 (0.05, 0.22)</b>	<b>0.11 (0.02, 0.21)</b>	<b>0.10 (0.01, 0.19)</b>	0.09 (-0.02, 0.21)	0.08 (-0.02, 0.19)
Numeracy	0.01 (-0.07, 0.09)	0.05 (-0.02, 0.12)	-0.03 (-0.12, 0.05)	0.01 (-0.07, 0.09)	-0.04 (-0.13, 0.06)	0.01 (-0.08, 0.10)
Non-Hispanic White	0.14 (-0.01, 0.30)	0.10 (-0.03, 0.24)	0.14 (-0.02, 0.30)	0.11 (-0.03, 0.26)	<b>0.21 (0.03, 0.40)</b>	<b>0.17 (0.00, 0.33)</b>
Worry about getting COVID-19	-	<b>-0.16 (-0.25, -0.07)</b>	-	<b>-0.15 (-0.24, -0.06)</b>	-	<b>-0.16 (-0.27, -0.05)</b>
COVID-19 risk perceptions	-	-0.01 (-0.13, 0.11)	-	0.02 (-0.11, 0.15)	-	-0.03 (-0.18, 0.11)
Work from home	-	-0.03 (-0.14, 0.08)	-	-0.05 (-0.17, 0.06)	-	-0.09 (-0.22, 0.05)
Good internet	-	0.01 (-0.24, 0.26)	-	0.01 (-0.25, 0.27)	-	0.19 (-0.12, 0.49)
Groceries delivered	-	<b>-0.25 (-0.38, -0.12)</b>	-	<b>-0.23 (-0.36, -0.10)</b>	-	<b>-0.22 (-0.37, -0.07)</b>
Friend/Family help	-	<b>-0.16 (-0.29, -0.04)</b>	-	-0.12 (-0.25, 0.00)	-	-0.08 (-0.23, 0.07)
Trust in healthcare	-	0.03 (-0.03, 0.08)	-	0.02 (-0.04, 0.07)	-	0.02 (-0.05, 0.09)
Disbelief in science	-	<b>0.11 (0.06, 0.15)</b>	-	<b>0.11 (0.06, 0.16)</b>	-	<b>0.10 (0.04, 0.15)</b>
Belief in COVID-19 conspiracies	-	<b>0.12 (0.04, 0.19)</b>	-	<b>0.16 (0.08, 0.23)</b>	-	<b>0.17 (0.08, 0.26)</b>
Conservative beliefs	-	0.03 (-0.00, 0.07)	-	0.03 (-0.01, 0.07)	-	<b>0.05 (0.01, 0.10)</b>
State too much	-	<b>0.15 (0.09, 0.21)</b>	-	<b>0.16 (0.10, 0.22)</b>	-	<b>0.15 (0.08, 0.22)</b>
Angry state	-	<b>0.09 (0.05, 0.13)</b>	-	<b>0.08 (0.04, 0.12)</b>	-	<b>0.12 (0.07, 0.17)</b>

Note. 95% confidence intervals (CIs) for unstandardized regression coefficients are shown in parentheses. Outcomes of significance tests for model predictors are implied by CIs that do not include zero (shown in bold font).

<b>Table 4. Regression coefficients from the baseline and full models predicting reported frequency of wearing a mask when in public.</b>						
	December-2020		January-2021		March-2021	
	Baseline model	Full model	Baseline model	Full model	Baseline model	Full model
Age	0.08 (-0.04, 0.20)	0.05 (-0.07, 0.17)	<b>0.25 (0.12, 0.38)</b>	<b>0.20 (0.07, 0.33)</b>	<b>0.20 (0.06, 0.33)</b>	<b>0.14 (0.01, 0.27)</b>
Urban	0.07 (-0.06, 0.19)	-0.01 (-0.13, 0.12)	<b>0.20 (0.07, 0.33)</b>	<b>0.15 (0.02, 0.29)</b>	<b>0.23 (0.09, 0.37)</b>	<b>0.18 (0.04, 0.31)</b>
Veteran	-0.02 (-0.13, 0.08)	-0.00 (-0.11, 0.10)	0.08 (-0.03, 0.19)	0.06 (-0.05, 0.18)	0.04 (-0.08, 0.16)	0.05 (-0.06, 0.16)
Total comorbidities	<b>0.04 (0.00, 0.07)</b>	0.03 (-0.01, 0.06)	-0.01 (-0.05, 0.02)	-0.02 (-0.06, 0.02)	0.01 (-0.03, 0.05)	0.00 (-0.04, 0.04)
Health literacy	<b>-0.13 (-0.20, -0.06)</b>	<b>-0.11 (-0.18, -0.04)</b>	<b>-0.11 (-0.18, -0.03)</b>	-0.07 (-0.15, 0.01)	<b>-0.09 (-0.17, -0.01)</b>	-0.05 (-0.13, 0.03)
Numeracy	<b>0.16 (0.10, 0.22)</b>	<b>0.14 (0.08, 0.20)</b>	0.06 (-0.00, 0.13)	0.03 (-0.03, 0.10)	<b>0.09 (0.02, 0.16)</b>	0.05 (-0.01, 0.12)
Non-Hispanic White	0.01 (-0.11, 0.12)	0.02 (-0.09, 0.13)	-0.08 (-0.20, 0.04)	-0.10 (-0.22, 0.03)	-0.03 (-0.16, 0.10)	-0.01 (-0.14, 0.11)
Worry about getting COVID-19	-	<b>0.10 (0.02, 0.17)</b>	-	<b>0.08 (0.00, 0.16)</b>	-	<b>0.12 (0.04, 0.20)</b>
COVID-19 risk perceptions	-	-0.01 (-0.11, 0.09)	-	-0.02 (-0.13, 0.09)	-	-0.03 (-0.14, 0.08)
Work from home	-	0.01 (-0.08, 0.10)	-	-0.05 (-0.14, 0.05)	-	-0.03 (-0.13, 0.07)
Good internet	-	0.13 (-0.07, 0.34)	-	0.22 (-0.01, 0.44)	-	0.18 (-0.05, 0.41)
Groceries delivered	-	-0.04 (-0.14, 0.06)	-	<b>-0.12 (-0.24, -0.01)</b>	-	-0.10 (-0.21, 0.02)
Friend/Family help	-	-0.07 (-0.17, 0.03)	-	-0.02 (-0.13, 0.09)	-	-0.01 (-0.12, 0.10)
Trust in healthcare	-	0.04 (-0.00, 0.09)	-	0.04 (-0.01, 0.09)	-	0.03 (-0.02, 0.08)
Disbelief in science	-	-0.03 (-0.07, 0.01)	-	-0.04 (-0.08, 0.00)	-	<b>-0.04 (-0.09, -0.00)</b>
Belief in COVID-19 conspiracies	-	<b>-0.10 (-0.16, -0.04)</b>	-	<b>-0.14 (-0.21, -0.07)</b>	-	<b>-0.17 (-0.23, -0.10)</b>
Conservative beliefs	-	0.02 (-0.02, 0.05)	-	0.03 (-0.00, 0.07)	-	0.02 (-0.01, 0.06)
State too much	-	<b>-0.11 (-0.15, -0.06)</b>	-	<b>-0.08 (-0.13, -0.03)</b>	-	<b>-0.09 (-0.14, -0.04)</b>
Angry state	-	<b>-0.04 (-0.08, -0.01)</b>	-	<b>-0.06 (-0.09, -0.02)</b>	-	<b>-0.06 (-0.10, -0.02)</b>

Note. 95% confidence intervals (CIs) for unstandardized regression coefficients are shown in parentheses. Outcomes of significance tests for model predictors are implied by CIs that do not include zero (shown in bold font).



<b>Table 5. Reasons given by respondents for why they were not always able to distance from others (December-2020 survey).</b>				
	<i>Frequency reason caused contact with others</i>			<i>n</i>
	Never	Sometimes	Often	
Reasons – n (%)				
Getting food	41 (8)	345 (68)	120 (24)	504
Seeing family in person	120 (24)	299 (59)	88 (17)	504
Getting exercise	266 (53)	169 (33)	70 (14)	505
Exercising my freedom to do what I want	288 (57)	152 (30)	66 (13)	507
Boredom or getting tired of being inside the house	231 (46)	212 (42)	63 (13)	506
Going to the pharmacy	148 (29)	299 (59)	60 (12)	507
Work	383 (76)	69 (14)	52 (10)	506
Seeing friends in person	131 (26)	324 (64)	52 (10)	505
Getting medical care (go to doctor or hospital)	126 (25)	335 (66)	46 (9)	507
Going to church (or other religious worship)	327 (70)	99 (21)	43 (9)	469
I did not think it is important to distance myself from others	379 (75)	86 (17)	41 (8)	507
Walking a pet	428 (85)	46 (9)	32 (6)	506
Need to provide care for family (besides children) or other loved ones	401 (79)	78 (15)	26 (5)	506

# RUNNING TITLE: COVID-19 BEHAVIOR

## Supplemental tables

<b>Supp-Table 1. Bivariate correlation and regression coefficients for predictor variables and frequency of risk-increasing behaviors.</b>						
	December-2020		January-2021		March-2021	
	<i>r</i>	$\beta$	<i>r</i>	$\beta$	<i>r</i>	$\beta$
Age	-0.09 (-0.15, -0.03)	0.04 (-0.10, 0.19)	-0.13 (-0.20, -0.07)	-0.08 (-0.23, 0.07)	-0.05 (-0.11, 0.01)	0.03 (-0.15, 0.20)
Urban	-0.07 (-0.13, 0.00)	-0.01 (-0.16, 0.14)	-0.05 (-0.12, 0.01)	0.06 (-0.10, 0.21)	-0.06 (-0.12, 0.00)	0.01 (-0.17, 0.19)
Veteran	-0.05 (-0.11, 0.02)	-0.05 (-0.18, 0.07)	-0.06 (-0.13, 0.00)	-0.04 (-0.17, 0.09)	-0.04 (-0.11, 0.02)	-0.04 (-0.19, 0.11)
Total comorbidities	-0.01 (-0.07, 0.06)	-0.00 (-0.04, 0.04)	-0.03 (-0.09, 0.04)	-0.01 (-0.05, 0.03)	0.01 (-0.05, 0.07)	-0.01 (-0.06, 0.04)
Health literacy	0.08 (0.02, 0.14)	<b>0.13 (0.05, 0.22)</b>	0.07 (0.00, 0.13)	<b>0.10 (0.01, 0.19)</b>	0.04 (-0.03, 0.10)	0.08 (-0.02, 0.19)
Numeracy	0.02 (-0.04, 0.09)	0.05 (-0.02, 0.12)	-0.02 (-0.09, 0.04)	0.01 (-0.07, 0.09)	-0.01 (-0.08, 0.05)	0.01 (-0.08, 0.10)
Non-Hispanic White	0.06 (0.00, 0.12)	0.10 (-0.03, 0.24)	0.04 (-0.02, 0.11)	0.11 (-0.03, 0.26)	0.08 (0.01, 0.14)	<b>0.17 (0.00, 0.33)</b>
Worry about getting COVID-19	-0.37 (-0.42, -0.31)	<b>-0.16 (-0.25, -0.07)</b>	-0.35 (-0.40, -0.29)	<b>-0.15 (-0.24, -0.06)</b>	-0.35 (-0.41, -0.29)	<b>-0.16 (-0.27, -0.05)</b>
COVID-19 risk perceptions	-0.32 (-0.38, -0.26)	-0.01 (-0.13, 0.11)	-0.31 (-0.37, -0.25)	0.02 (-0.11, 0.15)	-0.32 (-0.37, -0.26)	-0.03 (-0.18, 0.11)
Work from home	-0.08 (-0.15, -0.02)	-0.03 (-0.14, 0.08)	-0.09 (-0.15, -0.02)	-0.05 (-0.17, 0.06)	-0.10 (-0.16, -0.04)	-0.09 (-0.22, 0.05)
Good internet	-0.02 (-0.08, 0.05)	0.01 (-0.24, 0.26)	-0.03 (-0.09, 0.04)	0.01 (-0.25, 0.27)	0.02 (-0.05, 0.08)	0.19 (-0.12, 0.49)
Groceries delivered	-0.22 (-0.28, -0.16)	<b>-0.25 (-0.38, -0.12)</b>	-0.21 (-0.27, -0.15)	<b>-0.23 (-0.36, -0.10)</b>	-0.18 (-0.25, -0.12)	<b>-0.22 (-0.37, -0.07)</b>
Friend/Family help	-0.15 (-0.22, -0.09)	<b>-0.16 (-0.29, -0.04)</b>	-0.13 (-0.20, -0.07)	-0.12 (-0.25, 0.00)	-0.10 (-0.16, -0.03)	-0.08 (-0.23, 0.07)
Trust in healthcare	-0.02 (-0.08, 0.05)	0.03 (-0.03, 0.08)	-0.07 (-0.13, 0.00)	0.02 (-0.04, 0.07)	-0.03 (-0.09, 0.04)	0.02 (-0.05, 0.09)
Disbelief in science	0.40 (0.34, 0.45)	<b>0.11 (0.06, 0.15)</b>	0.40 (0.35, 0.46)	<b>0.11 (0.06, 0.16)</b>	0.36 (0.30, 0.41)	<b>0.10 (0.04, 0.15)</b>
Belief in COVID-19 conspiracies	0.34 (0.28, 0.39)	<b>0.12 (0.04, 0.19)</b>	0.37 (0.32, 0.43)	<b>0.16 (0.08, 0.23)</b>	0.34 (0.28, 0.40)	<b>0.17 (0.08, 0.26)</b>
Conservative beliefs	0.33 (0.27, 0.38)	0.03 (-0.00, 0.07)	0.30 (0.24, 0.36)	0.03 (-0.01, 0.07)	0.30 (0.24, 0.36)	<b>0.05 (0.01, 0.10)</b>
State too much	0.32 (0.26, 0.38)	<b>0.15 (0.09, 0.21)</b>	0.33 (0.27, 0.38)	<b>0.16 (0.10, 0.22)</b>	0.30 (0.24, 0.35)	<b>0.15 (0.08, 0.22)</b>
Angry state	0.13 (0.06, 0.19)	<b>0.09 (0.05, 0.13)</b>	0.12 (0.05, 0.18)	<b>0.08 (0.04, 0.12)</b>	0.15 (0.08, 0.21)	<b>0.12 (0.07, 0.17)</b>

Note. *r* represents the bivariate correlation coefficient.  $\beta$  represents the unstandardized regression coefficient. 95% confidence intervals (CIs) are shown in parentheses. Outcomes of significance tests for model predictors are implied by CIs that do not include zero (shown in bold font)

<b>Supp-Table 2. Bivariate correlation and regression coefficients for predictor variables and frequency of wearing a mask when in public.</b>						
	December-2020		January-2021		March-2021	
	<i>r</i>	$\beta$	<i>r</i>	$\beta$	<i>r</i>	$\beta$
Age	0.19 (0.12, 0.25)	0.05 (-0.07, 0.17)	0.23 (0.17, 0.29)	<b>0.20 (0.07, 0.33)</b>	0.16 (0.10, 0.23)	<b>0.14 (0.01, 0.27)</b>
Urban	0.05 (-0.01, 0.12)	-0.01 (-0.13, 0.12)	0.11 (0.05, 0.17)	<b>0.15 (0.02, 0.29)</b>	0.12 (0.06, 0.18)	<b>0.18 (0.04, 0.31)</b>
Veteran	0.06 (-0.01, 0.12)	-0.00 (-0.11, 0.10)	0.01 (-0.06, 0.07)	0.06 (-0.05, 0.18)	0.04 (-0.03, 0.10)	0.05 (-0.06, 0.16)
Total comorbidities	0.03 (-0.03, 0.09)	0.03 (-0.01, 0.06)	0.11 (0.05, 0.17)	-0.02 (-0.06, 0.02)	0.08 (0.01, 0.14)	0.00 (-0.04, 0.04)
Health literacy	-0.13 (-0.19, -0.07)	<b>-0.11 (-0.18, -0.04)</b>	-0.10 (-0.17, -0.04)	-0.07 (-0.15, 0.01)	-0.07 (-0.14, -0.01)	-0.05 (-0.13, 0.03)
Numeracy	0.17 (0.10, 0.23)	<b>0.14 (0.08, 0.20)</b>	0.08 (0.02, 0.15)	0.03 (-0.03, 0.10)	0.11 (0.04, 0.17)	0.05 (-0.01, 0.12)
Non-Hispanic White	0.05 (-0.01, 0.12)	0.02 (-0.09, 0.13)	0.00 (-0.06, 0.07)	-0.10 (-0.22, 0.03)	0.02 (-0.04, 0.08)	-0.01 (-0.14, 0.11)
Worry about getting COVID-19	0.22 (0.16, 0.28)	<b>0.10 (0.02, 0.17)</b>	0.16 (0.09, 0.22)	<b>0.08 (0.00, 0.16)</b>	0.22 (0.16, 0.28)	<b>0.12 (0.04, 0.20)</b>
COVID-19 risk perceptions	0.20 (0.14, 0.27)	-0.01 (-0.11, 0.09)	0.14 (0.08, 0.20)	-0.02 (-0.13, 0.09)	0.20 (0.14, 0.26)	-0.03 (-0.14, 0.08)
Work from home	0.03 (-0.03, 0.10)	0.01 (-0.08, 0.10)	0.00 (-0.07, 0.06)	-0.05 (-0.14, 0.05)	0.02 (-0.05, 0.08)	-0.03 (-0.13, 0.07)
Good internet	0.08 (0.01, 0.15)	0.13 (-0.07, 0.34)	0.12 (0.05, 0.19)	0.22 (-0.01, 0.44)	0.10 (0.03, 0.16)	0.18 (-0.05, 0.41)
Groceries delivered	0.03 (-0.03, 0.10)	-0.04 (-0.14, 0.06)	-0.02 (-0.09, 0.04)	<b>-0.12 (-0.24, -0.01)</b>	0.01 (-0.05, 0.08)	-0.10 (-0.21, 0.02)
Friend/Family help	0.01 (-0.05, 0.08)	-0.07 (-0.17, 0.03)	0.03 (-0.04, 0.09)	-0.02 (-0.13, 0.09)	0.04 (-0.02, 0.10)	-0.01 (-0.12, 0.10)
Trust in healthcare	0.16 (0.09, 0.22)	0.04 (-0.00, 0.09)	0.16 (0.10, 0.22)	0.04 (-0.01, 0.09)	0.15 (0.08, 0.21)	0.03 (-0.02, 0.08)
Disbelief in science	-0.29 (-0.35, -0.23)	-0.03 (-0.07, 0.01)	-0.26 (-0.32, -0.20)	-0.04 (-0.08, 0.00)	-0.31 (-0.37, -0.25)	<b>-0.04 (-0.09, -0.00)</b>
Belief in COVID-19 conspiracies	-0.32 (-0.38, -0.26)	<b>-0.10 (-0.16, -0.04)</b>	-0.29 (-0.35, -0.23)	<b>-0.14 (-0.21, -0.07)</b>	-0.34 (-0.40, -0.28)	<b>-0.17 (-0.23, -0.10)</b>
Conservative beliefs	-0.11 (-0.17, -0.04)	0.02 (-0.02, 0.05)	-0.08 (-0.15, -0.02)	0.03 (-0.00, 0.07)	-0.13 (-0.19, -0.06)	0.02 (-0.01, 0.06)
State too much	-0.21 (-0.28, -0.15)	<b>-0.11 (-0.15, -0.06)</b>	-0.15 (-0.21, -0.08)	<b>-0.08 (-0.13, -0.03)</b>	-0.19 (-0.25, -0.13)	<b>-0.09 (-0.14, -0.04)</b>
Angry state	-0.06 (-0.13, 0.00)	<b>-0.04 (-0.08, -0.01)</b>	-0.11 (-0.18, -0.05)	<b>-0.06 (-0.09, -0.02)</b>	-0.11 (-0.18, -0.05)	<b>-0.06 (-0.10, -0.02)</b>

Note. *r* represents the bivariate correlation coefficient.  $\beta$  represents the unstandardized regression coefficient. 95% confidence intervals (CIs) are shown in parentheses. Outcomes of significance tests for model predictors are implied by CIs that do not include zero (shown in bold font).

<b>Supp-Table 3. Regression coefficients from the original and exploratory models predicting reported frequency of risk-increasing behaviors.</b>								
	Original wave 2 model		New wave 2 model		Original wave 3 model		New wave 3 model	
	$\beta$ (95%CI)	<i>p</i> value	$\beta$ (95%CI)	<i>p</i> value	$\beta$ (95%CI)	<i>p</i> value	$\beta$ (95%CI)	<i>p</i> value
Age	-0.08 (-0.23, 0.07)	0.308	-0.08 (-0.23, 0.07)	0.284	0.03 (-0.15, 0.20)	0.773	-0.03 (-0.22, 0.17)	0.799
Urban	0.06 (-0.10, 0.21)	0.482	0.05 (-0.10, 0.21)	0.501	0.01 (-0.17, 0.19)	0.906	0.01 (-0.18, 0.19)	0.956
Veteran	-0.04 (-0.17, 0.09)	0.526	-0.04 (-0.17, 0.09)	0.503	-0.04 (-0.19, 0.11)	0.618	-0.04 (-0.19, 0.11)	0.578
Total comorbidities	-0.01 (-0.05, 0.03)	0.630	-0.01 (-0.06, 0.03)	0.608	-0.01 (-0.06, 0.04)	0.772	-0.01 (-0.06, 0.04)	0.692
Health literacy	<b>0.10 (0.01, 0.19)</b>	<b>0.030</b>	<b>0.10 (0.01, 0.19)</b>	<b>0.029</b>	0.08 (-0.02, 0.19)	0.112	0.08 (-0.02, 0.19)	0.107
Numeracy	0.01 (-0.07, 0.09)	0.820	0.01 (-0.07, 0.08)	0.869	0.01 (-0.08, 0.10)	0.787	0.01 (-0.08, 0.10)	0.841
Non-Hispanic White	0.11 (-0.03, 0.26)	0.119	0.11 (-0.03, 0.26)	0.119	<b>0.17 (0.00, 0.33)</b>	<b>0.048</b>	0.16 (-0.00, 0.33)	0.053
Worry about getting COVID-19	<b>-0.15 (-0.24, -0.06)</b>	<b>0.002</b>	<b>-0.15 (-0.24, -0.05)</b>	<b>0.002</b>	<b>-0.16 (-0.27, -0.05)</b>	<b>0.003</b>	<b>-0.16 (-0.27, -0.06)</b>	<b>0.003</b>
COVID-19 risk perceptions	0.02 (-0.11, 0.15)	0.769	0.02 (-0.11, 0.14)	0.804	-0.03 (-0.18, 0.11)	0.642	-0.03 (-0.18, 0.11)	0.647
Work from home	-0.05 (-0.17, 0.06)	0.369	-0.05 (-0.17, 0.06)	0.368	-0.09 (-0.22, 0.05)	0.193	-0.10 (-0.23, 0.04)	0.152
Good internet	0.01 (-0.25, 0.27)	0.946	0.01 (-0.25, 0.27)	0.951	0.19 (-0.12, 0.49)	0.228	0.18 (-0.13, 0.48)	0.254
Groceries delivered	<b>-0.23 (-0.36, -0.10)</b>	<b>0.001</b>	<b>-0.23 (-0.37, -0.10)</b>	<b>0.001</b>	<b>-0.22 (-0.37, -0.07)</b>	<b>0.005</b>	<b>-0.22 (-0.37, -0.06)</b>	<b>0.006</b>
Friend/Family help	-0.12 (-0.25, 0.00)	0.058	-0.13 (-0.25, 0.00)	0.054	-0.08 (-0.23, 0.07)	0.293	-0.09 (-0.24, 0.06)	0.259
Trust in healthcare	0.02 (-0.04, 0.07)	0.598	0.02 (-0.04, 0.08)	0.586	0.02 (-0.05, 0.09)	0.506	0.02 (-0.05, 0.09)	0.556
Disbelief in science	<b>0.11 (0.06, 0.16)</b>	<b>&lt;.001</b>	<b>0.11 (0.06, 0.16)</b>	<b>&lt;.001</b>	<b>0.10 (0.04, 0.15)</b>	<b>0.001</b>	<b>0.10 (0.04, 0.16)</b>	<b>0.001</b>
Belief in COVID-19 conspiracies	<b>0.16 (0.08, 0.23)</b>	<b>&lt;.001</b>	<b>0.16 (0.08, 0.23)</b>	<b>&lt;.001</b>	<b>0.17 (0.08, 0.26)</b>	<b>&lt;.001</b>	<b>0.18 (0.09, 0.27)</b>	<b>&lt;.001</b>
Conservative beliefs	0.03 (-0.01, 0.07)	0.173	0.03 (-0.01, 0.07)	0.179	<b>0.05 (0.01, 0.10)</b>	<b>0.026</b>	<b>0.05 (0.00, 0.10)</b>	<b>0.031</b>
State too much	<b>0.16 (0.10, 0.22)</b>	<b>&lt;.001</b>	<b>0.16 (0.10, 0.22)</b>	<b>&lt;.001</b>	<b>0.15 (0.08, 0.22)</b>	<b>&lt;.001</b>	<b>0.15 (0.08, 0.22)</b>	<b>&lt;.001</b>
Angry state	<b>0.08 (0.04, 0.12)</b>	<b>&lt;.001</b>	<b>0.08 (0.04, 0.12)</b>	<b>&lt;.001</b>	<b>0.12 (0.07, 0.17)</b>	<b>&lt;.001</b>	<b>0.12 (0.07, 0.17)</b>	<b>&lt;.001</b>
COVID-19 vaccine uptake ( $\geq 1$ dose)			0.05 (-0.10, 0.20)	0.509			0.11 (-0.06, 0.28)	0.219
(N, R <sup>2</sup> , adjusted)	834, .317, .301)		(834, .317, .300)		(834, .297, .281)		(834, .299, .281)	

<b>Supp-Table 4. Regression coefficients from the original and exploratory models predicting reported frequency of wearing a mask when in public</b>								
	Original wave 2 model		New wave 2 model		Original wave 3 model		New wave 3 model	
	$\beta$ (95%CI)	<i>p</i> value	$\beta$ (95%CI)	<i>p</i> value	$\beta$ (95%CI)	<i>p</i> value	$\beta$ (95%CI)	<i>p</i> value
Age	<b>0.20 (0.07, 0.33)</b>	<b>0.002</b>	<b>0.21 (0.08, 0.34)</b>	<b>0.002</b>	<b>0.14 (0.01, 0.27)</b>	<b>0.038</b>	0.08 (-0.07, 0.22)	0.290
Urban	<b>0.15 (0.02, 0.29)</b>	<b>0.025</b>	<b>0.16 (0.02, 0.29)</b>	<b>0.024</b>	<b>0.18 (0.04, 0.31)</b>	<b>0.011</b>	<b>0.17 (0.03, 0.31)</b>	<b>0.014</b>
Veteran	0.06 (-0.05, 0.18)	0.255	0.07 (-0.05, 0.18)	0.243	0.05 (-0.06, 0.16)	0.397	0.04 (-0.07, 0.16)	0.451
Total comorbidities	-0.02 (-0.06, 0.02)	0.311	-0.02 (-0.06, 0.02)	0.325	0.00 (-0.04, 0.04)	0.926	-0.00 (-0.04, 0.04)	0.936
Health literacy	-0.07 (-0.15, 0.01)	0.072	-0.07 (-0.15, 0.01)	0.070	-0.05 (-0.13, 0.03)	0.211	-0.05 (-0.13, 0.03)	0.222
Numeracy	0.03 (-0.03, 0.10)	0.313	0.04 (-0.03, 0.10)	0.290	0.05 (-0.01, 0.12)	0.106	0.05 (-0.02, 0.12)	0.132
Non-Hispanic White	-0.10 (-0.22, 0.03)	0.123	-0.10 (-0.22, 0.03)	0.123	-0.01 (-0.14, 0.11)	0.864	-0.01 (-0.14, 0.11)	0.814
Worry about getting COVID-19	<b>0.08 (0.00, 0.16)</b>	<b>0.050</b>	0.08 (-0.00, 0.16)	0.055	<b>0.12 (0.04, 0.20)</b>	<b>0.005</b>	<b>0.11 (0.03, 0.19)</b>	<b>0.007</b>
COVID-19 risk perceptions	-0.02 (-0.13, 0.09)	0.708	-0.02 (-0.13, 0.09)	0.739	-0.03 (-0.14, 0.08)	0.609	-0.03 (-0.14, 0.08)	0.615
Work from home	-0.05 (-0.14, 0.05)	0.368	-0.05 (-0.14, 0.05)	0.369	-0.03 (-0.13, 0.07)	0.573	-0.04 (-0.14, 0.06)	0.433
Good internet	0.22 (-0.01, 0.44)	0.057	0.22 (-0.01, 0.45)	0.057	0.18 (-0.05, 0.41)	0.117	0.17 (-0.06, 0.40)	0.143
Groceries delivered	<b>-0.12 (-0.24, -0.01)</b>	<b>0.037</b>	<b>-0.12 (-0.23, -0.00)</b>	<b>0.043</b>	-0.10 (-0.21, 0.02)	0.101	-0.09 (-0.21, 0.02)	0.120
Friend/Family help	-0.02 (-0.13, 0.09)	0.701	-0.02 (-0.13, 0.09)	0.724	-0.01 (-0.12, 0.10)	0.860	-0.02 (-0.13, 0.09)	0.762
Trust in healthcare	0.04 (-0.01, 0.09)	0.152	0.04 (-0.01, 0.09)	0.157	0.03 (-0.02, 0.08)	0.239	0.03 (-0.02, 0.08)	0.291
Disbelief in science	-0.04 (-0.08, 0.00)	0.061	-0.04 (-0.08, 0.00)	0.055	<b>-0.04 (-0.09, -0.00)</b>	<b>0.043</b>	-0.04 (-0.08, 0.00)	0.071
Belief in COVID-19 conspiracies	<b>-0.14 (-0.21, -0.07)</b>	<b>&lt;.001</b>	<b>-0.14 (-0.21, -0.07)</b>	<b>&lt;.001</b>	<b>-0.17 (-0.23, -0.10)</b>	<b>&lt;.001</b>	<b>-0.16 (-0.23, -0.10)</b>	<b>&lt;.001</b>
Conservative beliefs	0.03 (-0.00, 0.07)	0.061	0.03 (-0.00, 0.07)	0.060	0.02 (-0.01, 0.06)	0.190	0.02 (-0.01, 0.06)	0.227
State too much	<b>-0.08 (-0.13, -0.03)</b>	<b>0.003</b>	<b>-0.08 (-0.13, -0.03)</b>	<b>0.003</b>	<b>-0.09 (-0.14, -0.04)</b>	<b>0.001</b>	<b>-0.09 (-0.14, -0.04)</b>	<b>0.001</b>
Angry state	<b>-0.06 (-0.09, -0.02)</b>	<b>0.002</b>	<b>-0.06 (-0.09, -0.02)</b>	<b>0.002</b>	<b>-0.06 (-0.10, -0.02)</b>	<b>0.001</b>	<b>-0.06 (-0.10, -0.02)</b>	<b>0.001</b>
COVID-19 vaccine uptake ( $\geq 1$ dose)			-0.04 (-0.17, 0.09)	0.561			<b>0.13 (0.00, 0.26)</b>	<b>0.049</b>
(N, R <sup>2</sup> , adjusted)	(834, 0.180, 0.161)		(834, 0.180, 0.160)		(834, 0.210, 0.192)		(834, 0.214, 0.195)	