Mask Mandates and COVID-19 Related Symptoms in the US

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Abstract:

This study investigates the extent to which the Public Mask Mandate, a policy that requires the use of face masks in public, can protect people from developing COVID-19 symptoms during the initial stage of the pandemic. By exploiting the differential timing of the mask mandate implementation across the United States, we show that mandating masks in public significantly lowers the incidence of developing all COVID-19 symptoms by 0.29 percentage points. Taking the mandate-unaffected individuals who display all symptoms as the benchmark, our estimate implies an average reduction by 290%. The finding provides suggestive evidence for the health benefits of wearing masks in public in the initial stage of the COVID-19 pandemic. The study also highlights the relevance of public mask wearing for the ongoing pandemic where the vaccination rate is precarious and access to vaccines is still limited in many countries.

JEL classification: I12, I18

Keywords: COVID-19; coronavirus symptoms; mask mandates; face masks

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1 Introduction

As the most dreadful public health threat related to a respiratory virus since the 1918 H1N1 influenza pandemic, COVID-19 has caused hundred thousands of deaths and infected millions of people across the globe.[2] During the initial stage of the pandemic, governments across countries relied on non-pharmaceutical interventions as the key strategy in curtailing the transmission of the virus. One example is the policy regarding social distancing such as public gathering bans. Another policy response that was met with substantial opposition at the onset of the COVID-19 breakout is the Public Mask Mandate that requires the use of face masks in public.

This paper evaluates whether the Public Mask Mandate can protect people from developing symptoms of COVID-19 at the beginning of the pandemic. We covers all 11 symptoms established by the Disease Control and Prevention (CDC), including fever or chills, cough, shortness of breath, fatigue, muscle or body aches, headache, loss of taste or smell, sore throat, congestion or runny nose, nausea or vomiting, and diarrhea. The contribution of our study is two folds. First, by examining the effectiveness of wearing face masks in public, our study can provide meaningful implications for the ongoing pandemic where there are still a large number of people unvaccinated and access to vaccines is still limited in many countries. The result of our study can also be relevant for future respiratory pandemics. Second, although the correlation between face masks and COVID-19 infection is documented in several previous studies, very few attempts have been made to ensure internal validity and establish a causal relationship. We address this issue by exploiting

[2] The consequences of the COVID-19 pandemic also includes deteriorating economic performance, rising inequality, and acute psychological distress (Alon et al., 2020; Chetty et al. 2020; Le and Nguyen 2021a; Le and Nguyen 2021b).

the differential timing of the mask mandate implementation across the United States within a difference-in-differences framework.

Our work can be related to two strands of literature. The first line of literature focuses on the importance of non-pharmaceutical interventions in combating COVID-19. For example, measures such as mass quarantine, social distancing, and face masking can help decrease contact rate, the number of positive cases, and the number of deaths (Jarvis et al., 2020; Ferguson et al., 2020; Hellewell et al., 2020). Our study also fits into the second line of work which provides epidemiological evidence on the efficacy of face masks in preventing the transmission of respiratory virus. In particular, surgical masks are found to decrease the release of influenza virus and coronavirus particles in respiratory droplets into the environment (Leung et al., 2020). Homemade cloth masks, despite being less competent than surgical masks, are still much more capable of blocking the dispersal of microorganism-bearing droplets than the without-mask scenario (Davies et al., 2013).

The study makes use of the COVID Impact Survey that focuses exclusively on individual experiences during the COVID-19 outbreak in the U.S. Within a difference-in-differences framework, we find that the Public Mask Mandate lowers the incidence of developing all COVID-19 symptoms by 0.29 percentage points. Taking the proportion of individuals who are not subject to the mandate and display all symptoms as the benchmark, our estimate implies the average decrease by 290%.

The result provides suggestive evidence for the enormous health benefits of wearing masks in public in the initial stage of the COVID-19 pandemic. The finding also highlights the relevance of mask use for the ongoing pandemic as it can protect unvaccinated individuals as well as serve as an important non-pharmaceutical measure in curtailing the virus transmission in developing countries where access to vaccines is still limited. Given its effectiveness in decreasing infection, mask use might still be an appropriate policy response to future outbreaks.

The paper proceeds as follows. Section 2 discusses the data used in the study. Section 3 outlines the empirical strategy. Section 4 presents our estimating results. Section 5 concludes.

2 Data

Health and Demographics − The first source of data is the COVID Impact Survey (CIS), which is funded by the Data Foundation and conducted by the National Opinion Research Center at the University of Chicago (NORC). The dataset provides detailed information on American experiences during the COVID-19 pandemic. Respondents are rewarded a small amount of money as an incentive to complete the survey. Each survey wave occurs over a week-long period. We utilize three survey waves that were conducted during the initial stage of the pandemic, including Wave 1: April 20 - April 26, 2020, Wave 2: May 04 - May 10, 2020, and Wave 3: May 30 - June 08, 2020. The survey sample targets a nationally-representative sample of adults age 18 and older in the U.S. The sample is selected using sampling strata based on age, gender, race/ethnicity, and education (48 sampling strata in total). The size of the selected sample per sampling stratum is determined by the population distribution for each stratum. Sample selection further takes into account expected differential interview completion rates by demographic groups. Therefore, the set of members completing interview is also a representative sample of the target population. To reassure the representativeness, Table A1 in the Appendix compares some key demographic characteristics between the CIS and the Census Population Survey. The differences between the CIS sample and the national statistics are all small and acceptable (around. ±0.1 percentage point), thus confirming the representativeness of the CIS sample.

Standard demographic characteristics, such as gender, educational attainment, race, age group, urban/rural status, household size, and share of children in the household, are obtained straight from the CIS. Most importantly, the CIS enables us to construct measures indicating whether individuals have COVID-19 symptoms. In particular, respondents were asked about whether they experienced any of the listed symptoms in the past 7 days, such as fever, chills, runny or stuffy nose, chest congestion, cough, sore throat, muscle or body aches, headaches, fatigue, or tiredness, shortness of breath, etc. The answers can be Yes, No, or Not Sure. We drop the Not Sure answers and focus on the other two. This comprehensive set of symptoms covers all 11 COVID-19 related symptoms announced by the Disease Control and Prevention (CDC).[3] Besides, these symptoms have been well established to be strong predictors of COVID-19 infection. For systematic reviews and meta-analyses on prior studies of the relationship between these symptoms and COVID-19 infection, please see the works of Alimohamadi et al. (2020), Grant et al. (2020), and Assaker et al. (2020).

Following the CDC guidance, we construct 11 one-zero variables indicating symptoms people may have after exposure to the virus. In particular, the variables include: (i) Fever/Chills equals one if having fever or chills, (ii) Cough equals one if having cough, (iii) Shortness of Breath equals one if having shortness of breath or difficulty breathing, (iv) Fatigue equals one if having fatigue, (v) Muscle/Body Aches equals one if having muscle or body aches, (vi) Headache equals one if having headaches, (vii) Loss of Appetite equals one if having loss of taste or smell, (viii) Sore Throat equals one if having a sore throat, (ix) Congestion/Runny Nose equals one if having congestion or runny nose, (x) Nausea/Vomiting equals one if having nausea or vomiting, and (xi) Diarrhea equals

[3] See https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html for more information regarding the symptoms indicating that people may have COVID-19.

one if having diarrhea. While being well documented in prior studies, it is still interesting to examine the relationship between these symptoms and COVID-19 infection with the newly constructed data. To do so, we regress each of the symptoms on the state-level Positive Rate, which is simply the number of positive tests divided by the total number of tests for the survey week. The positivity rate not only measures the outbreak's severity, but also account for the limitations of testing.[4] The quantified relationships between each of the 11 symptoms and COVID-19 infection, proxied by Positive Rate, are reported in Table A2 and A3 in the Appendix. It is not surprising that the relationships of interest are all positive and statistically significant, thus lending some supports to prior studies.

We also construct two groups of measures reflecting the overall situation. The first group focuses on the nominal number of symptoms (out of 11 ones announced by the CDC) that the respondent experienced, namely: (i) Number of Symptoms stands for the number of symptoms, and (ii) Log Number of Symptoms is calculated as the log of one plus the number of symptoms. The second group includes one-zero variables, namely: (i) Any Symptoms takes the value of one if the respondent reports having one or more symptoms and zero otherwise, (ii) Six or More Symptoms takes the value of one if the respondent reports exhibiting six or more symptoms, and (iii) All Symptoms takes the value of one if the respondent reports displaying all 11 symptoms of COVID-19.

Public Mask Mandate − Our main explanatory variable is an indicator of whether wearing face masks in public is required in the respondent's residing state at the period of the survey. The implementation dates of mask mandates in public are collected from the state government

[4] Since the CDC is not publishing COVID-19 tests for each state on a daily basis, we rely on the COVID Tracking Project for the statistics. Johns Hopkins also relies on this data for its COVID-19 Testing Insights Initiative in supporting the public and policymakers to understand and make decisions about the pandemic related matters.

websites. Given these implementation dates and timing of the survey, we can construct our main explanatory indicating whether respondents are required to wear face masks in public. In particular, the main explanatory, denoted by PMM (i.e. Public Mask Mandate), takes a value of one if an individual is interviewed after the law being imposed and before the law being lifted, and zero otherwise. Table 1 presents the mandate names and the timing of implementation across states as of June 08, 2020. Panel A and B of Table A1 in the Appendix detail summary statistics for independent and outcome variables by the status of exposure to the mandate.

Table 1: Public Mask Mandate by State as of June 08, 2020

State Name	**Date Enacted**	**Date Ended**	**Policy Name**
Connecticut	Apr 17, 2020	Still in Effect	Executive Order No. 7BB
Delaware	May 01, 2020	Still in Effect	Thirteenth Modification to State of Emergency
Hawaii	Apr 20, 2020	Still in Effect	Emergency Order No. 2020-07
Illinois	May 01, 2020	Still in Effect	Executive Order 2020-32
Maine	May 01, 2020	Still in Effect	Executive Order 49 FY 19/20
Maryland	Apr 18, 2020	Still in Effect	Governor Order No. 20-04-15-01
Massachusetts	May 06, 2020	Still in Effect	COVID-19 Order No. 31
Michigan	Apr 26, 2020	Still in Effect	Executive Order No. 2020-60
New Jersey	Apr 10, 2020	Still in Effect	Executive Order No. 125
New Mexico	May 15, 2020	Still in Effect	Public Health Emergency Orders of May 15, 2020
New York	Apr 15, 2020	Still in Effect	Executive Order No. 202.17
Pennsylvania	Apr 17, 2020	Still in Effect	Order of the Secretary of the Department of Health
Rhode Island	Apr 20, 2020	Still in Effect	Executive Order 20-30
Virginia	May 29, 2020	Still in Effect	Executive Order 63
Washington D.C.	Apr 17, 2020	Still in Effect	Mayor's Order 2020-067

Note: States that are not present in this table did not implement the Public Mask Mandate during the time of our study.

3 Empirical Methodology

To examine how Public Mask Mandate can protect individuals from developing the symptoms of COVID-19, we exploit the staggered implementation of the mask mandates across the U.S. during the initial stage of the pandemic in the following difference-in-differences (DID) framework,

$$Y_{ist} = \beta_0 + \beta_1 PMM_{ist} + \delta_s + \theta_t + X'_{ist}\Omega + \epsilon_{ist}$$

where the subscripts i, s, and t refers to the individual, state, and time (week) of the survey. The dependent variable Y_{ist} stands for various measures of COVID-19 symptoms the individual reports to have within the last seven days, including (i) the Number of Symptoms, (ii) the Log Number of Symptoms, (iii) an indicator for whether the individual has at least one symptom (Any Symptoms), (iv) an indicator for whether the individual has at least six symptoms (Six or More Symptoms), and (v) an indicator for whether the individual has all 11 symptoms (All Symptoms). Besides these five main variables, we further examine whether the individual displays each of the 11 symptoms (Fever/Chill, Cough, Shortness of Breath, Fatigue, Muscle/Body Aches, Headache, Loss of Appetite, Sore Throat, Congestion/Runny Nose, Nausea/Vomiting, Diarrhea) individually.

Our main independent variable, PMM_{ist}, is a dummy variable that takes the value of one if the Public Mask Mandate is effective in the individual's residence state at the survey week. We denote by δ_s and θ_t state and week fixed effects, respectively. The vector X'_{ist} is the covariate that captures individual characteristics including gender, educational attainment, race, age group, urban/rural status, household size, and share of children in the household. Finally, ϵ_{ist} stands for the error term. Standard errors throughout the paper are clustered at the statistical area by week level where the statistical area in the survey is either a state or a metropolitan statistical area. Sampling weights are used in all of the regressions since the unweighted estimates may be biased in the presence of endogenous sampling.

The coefficient of interest β_1 summarizes the extent to which the Public Mask Mandate affects individuals' development of COVID-19 symptoms. In this DID framework, the treatment group consists of individuals subject to the Public Mask Mandate at the survey time. Individuals who are not exposed to the mandate in the survey week constitute the control group. Our identification hinges upon the differential timing of the Public Mask Mandate across states. In other words, we compare the health outcomes for individuals under the Public Mask Mandate at the time of survey with those who reside in the same state but were surveyed when the mandate had not been enforced, relative to the analogous differences for individuals living in states where Public Mask Mandate was put into effect in a different time frame or never invoked such a mandate.

4 Results

4.1 The Impacts of Public Mask Mandate on Overall COVID-19 Symptoms

The estimated impacts of the Public Mask Mandate on the overall COVID-19 symptoms are reported in Table 2. Each column is a separate regression and the column heading indicates the outcome variable. All regressions control for state and week fixed effects as well as a full set of individual characteristics. Overall, Table 2 suggests that the implementation of the Public Mask Mandate is effective in suppressing the development of COVID-19 symptoms.

Table 2: The Impact of Public Mask Mandate: Overall Symptoms

	Number of Symptoms (1)	Log Number of Symptoms (2)	Any Symptoms (3)	Six or More Symptoms (4)	All Symptoms (5)
Public Mask Mandate	-0.4342***	-0.1624***	-0.1052***	-0.0471***	-0.0029***
	(0.0962)	(0.0313)	(0.0124)	(0.0050)	(0.0002)
State & Week FE	✓	✓	✓	✓	✓
Observations	16580	16580	16580	16580	16580

Note: *p < 0.1, **p < 0.05, ***p < 0.01. Robust standard errors are clustered at the Statistical Area-by-Week level. Sampling weights are used since the unweighted estimates may be biased in the presence of endogenous sampling.

Evident from Column 1, the number of COVID-19 symptoms declines by 0.43 for those residing in states where people are required to wear masks in public. Using the log number of symptoms as the dependent variable does not change the conclusion (Column 2). As shown in Column 3, individuals exposed to the mandate are 10.53 percentage points less likely to exhibit any symptoms within the last seven days, which corresponds to a 17.5% decrease relative to the fraction of individuals reporting at least one symptom in the control group (Panel B, Table A1). According to Columns 4 and 5, the Public Mask Mandate further lowers the incidence of developing at least six COVID-19 symptoms and all 11 symptoms by 4.71 and 0.29 percentage points, respectively. Taking the proportion of mandate unaffected individuals who display at least six and all symptoms as the benchmark, our estimates imply the average decreases by 124% and 290%, respectively.

4.2 The Impacts of Public Mask Mandate by Symptoms

While the estimates presented in Table 2 are all statistically and economically significant, it could be the case that such significant levels are driven by just one or two symptoms. Therefore, we proceed to examine the impacts of the Public Mask Mandate for each symptom individually. The estimating results from this exercise are reported in Table 3.

We find strong statistical evidence supporting the effectiveness of the Public Mask Mandate in suppressing almost all symptoms of COVID-19. Nine out of 11 coefficients are statistically significant. Particularly, individuals residing in states where the Public Mask Mandate is in place are 4.83, 1.97, 3.11, 7.71 percentage points less likely to suffer from fever/chills, cough, shortness of bread, and fatigue, respectively. The estimates correspond to the decreases by 21.56%, 15.71%, 27.04%, and 64.25% compared to the control means. The Public Mask Mandate also reduces the incidences of muscle/body aches, headache, loss of appetite, nausea/vomiting, and diarrhea by 7.12, 4.30, 6.13, 4.73, and 2.84 percentage points, respectively. Take the fraction of mandate unexposed individuals reporting such symptoms as the benchmark, these estimates imply the average declines by 58.84%, 33.86%, 54.73%, 39.42%, and 24.70%, respectively.

Table 3: The Impact of Public Mask Mandate by Symptom

	Fever or Chills	Cough	Shortness of Breath	Fatigue	Muscle or Body Aches	Headache
	(1)	(2)	(3)	(4)	(5)	(6)
Public Mask Mandate	-0.0483***	-0.0196**	-0.0310*	-0.0770***	-0.0712***	-0.0430***
	(0.0116)	(0.0095)	(0.0163)	(0.0060)	(0.0245)	(0.0121)
State & Week FE	✓	✓	✓	✓	✓	✓
Observations	16580	16580	16580	16580	16580	16580

Note: *p < 0.1, **p < 0.05, ***p < 0.01. Robust standard errors are clustered at the Statistical Area-by-Week level. Sampling weights are used since the unweighted estimates may be biased in the presence of endogenous sampling.

Table 4: The Impact of Public Mask Mandate by Symptom (continued)

	Loss of Appetite	Sore Throat	Congestion or Runny Nose	Nausea or Vomiting	Diarrhea
	(1)	(2)	(3)	(4)	(5)
Public Mask Mandate	-0.0613***	-0.0024	-0.0093	-0.0473***	-0.0284***
	(0.0168)	(0.0251)	(0.0225)	(0.0167)	(0.0096)
State & Week FE	✓	✓	✓	✓	✓
Observations	16580	16580	16580	16580	16580

Note: *p < 0.1, **p < 0.05, ***p < 0.01. Robust standard errors are clustered at the Statistical Area-by-Week level. Sampling weights are used since the unweighted estimates may be biased in the presence of endogenous sampling.

4.3 Discussion

Collectively, we find strong economic and statistical evidence that mandating masks in public significantly lowers the incidence of developing COVID-19 symptoms at the individual level. Since the virus is transmitted from human to human via respiratory droplets, there are multiple reasons why wearing a mask can protect individuals from the risk of infection. First, it is documented that pathogen-bearing droplets can travel from 23 to 27 feet, much farther than the 6-feet distance recommended for social distancing (Bourouiba, 2020). Furthermore, a study by Leung et al. (2020) shows that the exhaled breath of virus patients can have viral RNA and it is also possible for healthy people to accidentally inhale pathogens containing droplets. Therefore, masking or face-covering can lower the risk of catching these droplets not only from infected people but also from those with asymptomatic diseases.

The findings presented in this study underlines the value of mandating face masks among the general public in preventing COVID-19 infection during the early stage. Despite the availability of vaccines, mask use is still relevant for the ongoing pandemic. Unvaccinated individuals are still encouraged to wear face masks in public (CDC, 2021). Furthermore, there is still a probability of the fully vaccinated getting infected with the virus (Boyarsky et al., 2021). Therefore, wearing face masks can be a protective barrier for them. Besides, even though COVID-19 vaccines are available at the current stage, the vaccination rate can be precarious, which means that loosening pandemic-related restrictions such as masking or face covering in public places should be conducted very carefully. Recently, some countries such as Germany and Spain had to strengthen their mask requirements when faced with a slowdown in vaccination rates and a surge in COVID-19 cases (Peeples, 2021). In the current stage, mask use should still be one of the effective non-pharmaceutical measures to downsize community transmission and lessen the burden of the pandemic in many developing countries where access to vaccines is still limited. For future outbreaks, mask use might still be an appropriate policy response given its effectiveness in decreasing infection.

Regarded as a profoundly important pillar of pandemic control, public mask wearing is among the most effective policies at reducing the spread of the virus when compliance is high (Howard et al., 2021). Therefore, governments need to communicate with the public on the benefits of face masks to ensure the highest compliance. It is also important for political leaders and doctors to serve as role models for the public (Lim et al., 2020). Besides, when there is a shortage of face masks, the use of homemade masks should be encouraged since the efficacy of homemade masks, despite being lower than medical masks, is superior to no protection at all (Davies et al., 2013). Furthermore, some degree of interventions in the mask market such as a subsidy is justified given the positive externalities it can generate. In addition, the mask use policy might be implemented in conjunction with other strategies such as social distancing to maximize potential benefits, especially in situations where the vaccination rate is low.

5 Conclusion

We evaluate whether mandating the use of masks in public can protect people from developing COVID-19 symptoms during the early stage of the pandemic. Our study utilizes the COVID Impact Survey that focuses exclusively on individual experiences during the COVID-19 outbreak in the U.S. Our identification strategy exploits the differential timing of the Public Mask Mandate implementation across the U.S. within a difference-in-differences framework. Our main result suggests that the Public Mask Mandate lowers the incidence of developing all COVID-19 symptoms by 0.29 percentage points. Taking the proportion of individuals who are not subject to the mandate and display all symptoms as the benchmark, our estimate implies the average decrease by 290%.

The result provides suggestive evidence for the enormous benefits of wearing masks in public for individual health during the early stage of the pandemic. Given its effectiveness in inhibiting COVID-19 symptoms, mask use is still relevant in the ongoing pandemic. It could serve as a protective barrier for unvaccinated individuals and could still be an important non-pharmaceutical tool to curtail the virus transmission in countries where access to vaccines is limited. Given its effectiveness in decreasing infection, public mask wearing might still be an appropriate policy response to future outbreaks.

Appendix A

Table A1: Representative Check

	Sample (%)	National (%)	Difference
	(1)	(2)	(3)
Male	48.3	48.4	-0.1
Female	51.7	51.6	+0.1
Age 18 - 44	46.0	46.0	0.0
Age 45+	54.0	54.0	0.0
Less than High School	10.5	10.6	-0.1
High School Graduate	28.4	28.3	+0.1
Some College	27.7	27.8	-0.1
College Graduate or Higher	33.4	33.3	+0.1
Non-Hispanic White	63.1	63.1	0.0
Non-Hispanic Black	11.9	11.8	+0.1
Hispanic	16.5	16.5	0.0
Others	8.5	8.6	-0.1

Note: National statistics are from Census CPS 2019. Sampling weights are used in computing these statistics for both data.

Table A2: The Relationship between Symptoms and COVID-19 Infection

	Fever or Chills	Cough	Shortness of Breath	Fatigue	Muscle or Body Aches	Headache
	(1)	(2)	(3)	(4)	(5)	(6)
Positivity Rate	0.1938***	0.0782***	0.0125***	0.0678**	0.1386***	0.0572**
	(0.0359)	(0.0287)	(0.0019)	(0.0284)	(0.0281)	(0.0292)
Observations	19290	19290	19290	19290	19290	19290

Note: *p < 0.1, **p < 0.05, ***p < 0.01. Robust standard errors are clustered at the Statistical Area-by-Week level. Sampling weights are used since the unweighted estimates may be biased in the presence of endogenous sampling.

Table A3: The Relationship between Symptoms and COVID-19 Infection (continued)

	Loss of Appetite	Sore Throat	Congestion or Runny Nose	Nausea or Vomiting	Diarrhea
	(1)	(2)	(3)	(4)	(5)
Positivity Rate	0.1215***	0.0600**	0.0183***	0.0203***	0.0883***
	(0.0273)	(0.0285)	(0.0069)	(0.0052)	(0.0272)
Observations	19290	19290	19290	19290	19290

Note: *p < 0.1, **p < 0.05, ***p < 0.01. Robust standard errors are clustered at the Statistical Area-by-Week level. Sampling weights are used since the unweighted estimates may be biased in the presence of endogenous sampling.

Table A4: Summary Statistics

	Control			Treatment			All		
	Mean	SD	Obs.	Mean	SD	Obs.	Mean	SD	Obs.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Independent Variables									
Being Male	0.431	0.495	19,262	0.417	0.493	3,973	0.429	0.495	23,235
Having Bachelor Degree	0.518	0.500	19,271	0.599	0.490	3,976	0.532	0.499	23,247
Being Non-white	0.289	0.454	16,574	0.245	0.430	3,969	0.281	0.449	20,543
Living in Urban Areas	0.767	0.423	19,271	0.866	0.341	3,976	0.784	0.411	23,247
Household Size	2.475	1.615	19,271	2.285	1.373	3,976	2.443	1.578	23,247
Share of Children (<18)	0.111	0.209	19,271	0.095	0.192	3,976	0.108	0.207	23,247
Age 18-29	0.128	0.334	19,268	0.125	0.331	3,976	0.128	0.334	23,244
Age 30-44	0.249	0.433	19,268	0.229	0.420	3,976	0.246	0.430	23,244
Age 45-59	0.236	0.424	19,268	0.246	0.431	3,976	0.237	0.426	23,244
Age 60+	0.387	0.487	19,268	0.400	0.490	3,976	0.389	0.488	23,244
Panel B: Outcome Variables									
Number of Symptoms	1.526	1.797	19,271	1.458	1.791	3,976	1.514	1.796	23,247
Log(1 + # of Symptoms)	0.703	0.660	19,271	0.672	0.658	3,976	0.697	0.659	23,247
Any Symptoms	0.602	0.490	19,271	0.581	0.493	3,976	0.598	0.490	23,247
Six or More Symptoms	0.037	0.190	19,271	0.038	0.191	3,976	0.038	0.190	23,247
All Symptoms	0.001	0.028	19,271	0.000	0.016	3,976	0.001	0.026	23,247
Fever or Chills	0.225	0.418	19,271	0.217	0.412	3,976	0.224	0.417	23,247
Cough	0.127	0.333	19,271	0.123	0.328	3,976	0.126	0.332	23,247
Shortness of Breath	0.115	0.319	19,271	0.108	0.310	3,976	0.114	0.318	23,247
Fatigue	0.121	0.326	19,271	0.112	0.316	3,976	0.119	0.324	23,247
Muscle or Body Aches	0.120	0.325	19,271	0.121	0.326	3,976	0.120	0.325	23,247
Headache	0.127	0.333	19,271	0.125	0.331	3,976	0.127	0.333	23,247
Loss of Appetite	0.111	0.314	19,271	0.107	0.310	3,976	0.111	0.314	23,247
Sore Throat	0.126	0.332	19,271	0.118	0.323	3,976	0.125	0.331	23,247
Congestion or Runny Nose	0.217	0.412	19,271	0.208	0.406	3,976	0.215	0.411	23,247
Nausea or Vomiting	0.121	0.326	19,271	0.109	0.312	3,976	0.119	0.324	23,247
Diarrhea	0.115	0.320	19,271	0.109	0.312	3,976	0.114	0.318	23,247

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