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Perceptions of Mask Use During the COVID-19 Pandemic

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INTRODUCTION

- The CDC recommends covering of the face and nose during the COVID-19 pandemic as a primary mitigation strategy for viral transmission.¹ Masks minimize the number of viral particles emitted by the wearer; mask use serves to reduce the effects on population transmission.²
- Mask wearing behaviors have been shown to vary across different groups like gender identity, however, differences between people with and without lung disease have yet to be explored.³
- Goal:** Examine perceptions, attitudes, and behaviors related to mask use during the COVID-19 pandemic of those with and without lung disease nationally.

SAMPLE

- $n = 1,367$, 78.6% female, ages 18-88, $M_{age} = 46.10$, $SD = 16.85$
- White = 91.5%, Hispanic/Latinx = 2.6%, Asian = 2.4%, African American = 0.7%, Other/Decline = 4.9%
- Diagnosed with Chronic Lung Disease = 162 (11.7%); Asthma = 72.2%, COPD = 18.8%, Pulmonary Hypertension = 2.3%, Infection = 2.3%
- Diagnosed with Chronic Lung Disease and currently using prescription respiratory medication = 147 (84%); Inhalers = 79.4%, Pills = 23.4%, Nebulizers = 17.1%, Oxyvaen = 6.3%

METHODS

- Cross-sectional 3–5-min self-report survey administered via RedCap, an online polling tool.
- Questions were asked regarding demographics, importance of mask wearing in different settings, barriers to mask wearing, and COVID-19 mitigation strategies.
- Disseminated via American Lung Association, Front Porch Forum, Vermont Department of Health, UVMHC patients, and personal contacts.
- Collected data analyzed in SPSS using chi-squared and logistical regression analyses.
- No IRB review required (project falls under the public health practice domain).

RESULTS

Figure 1

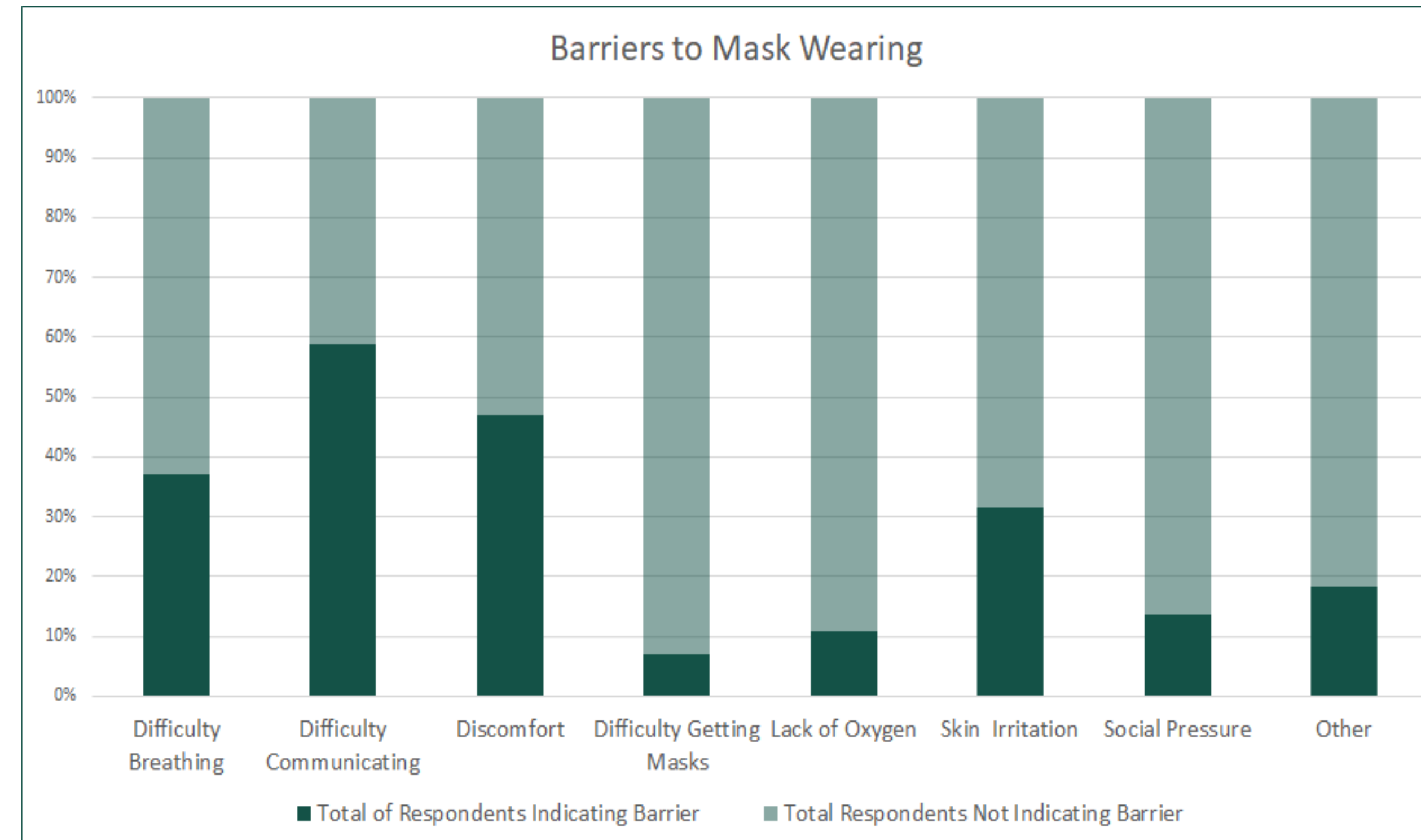


Figure 2

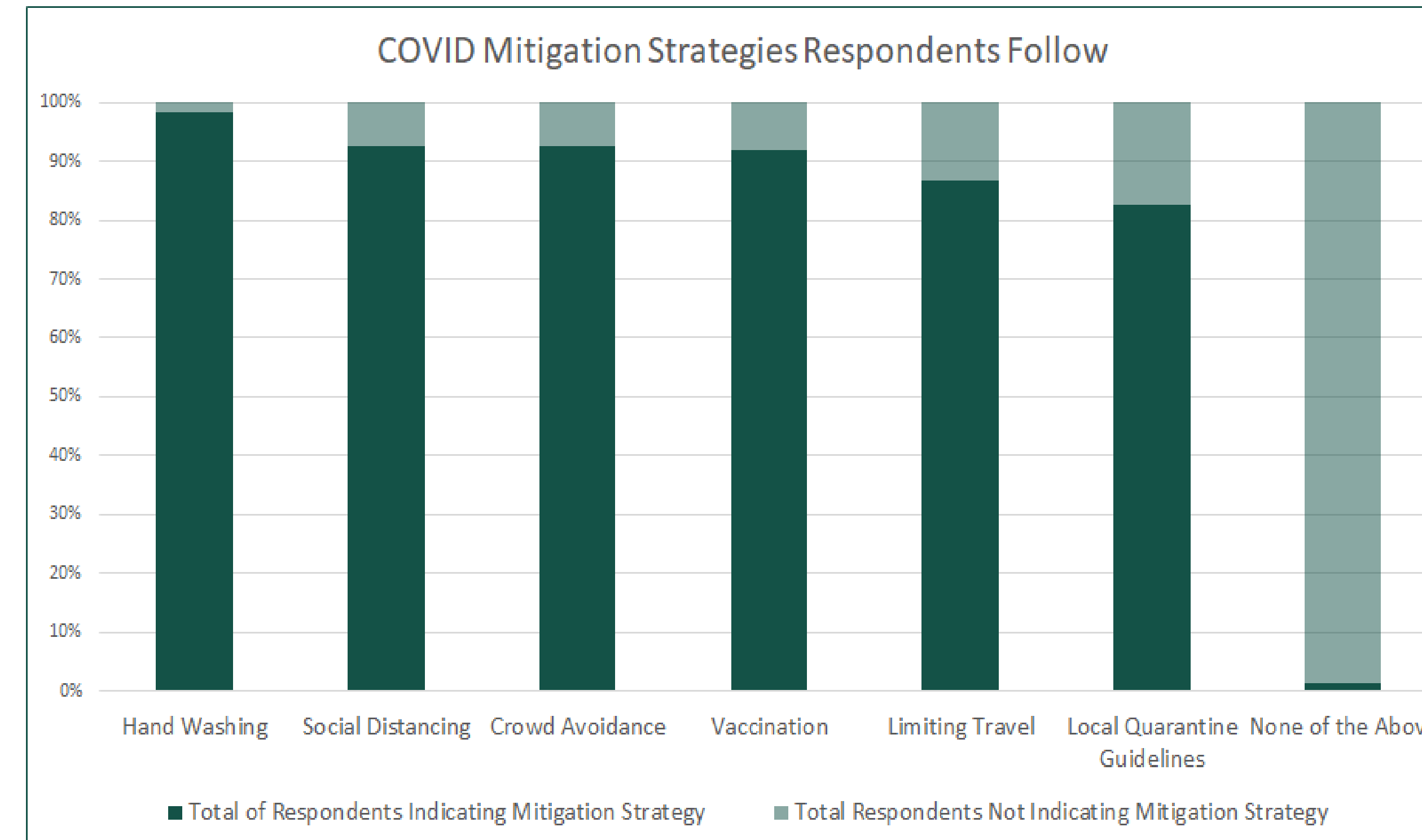


Figure 3

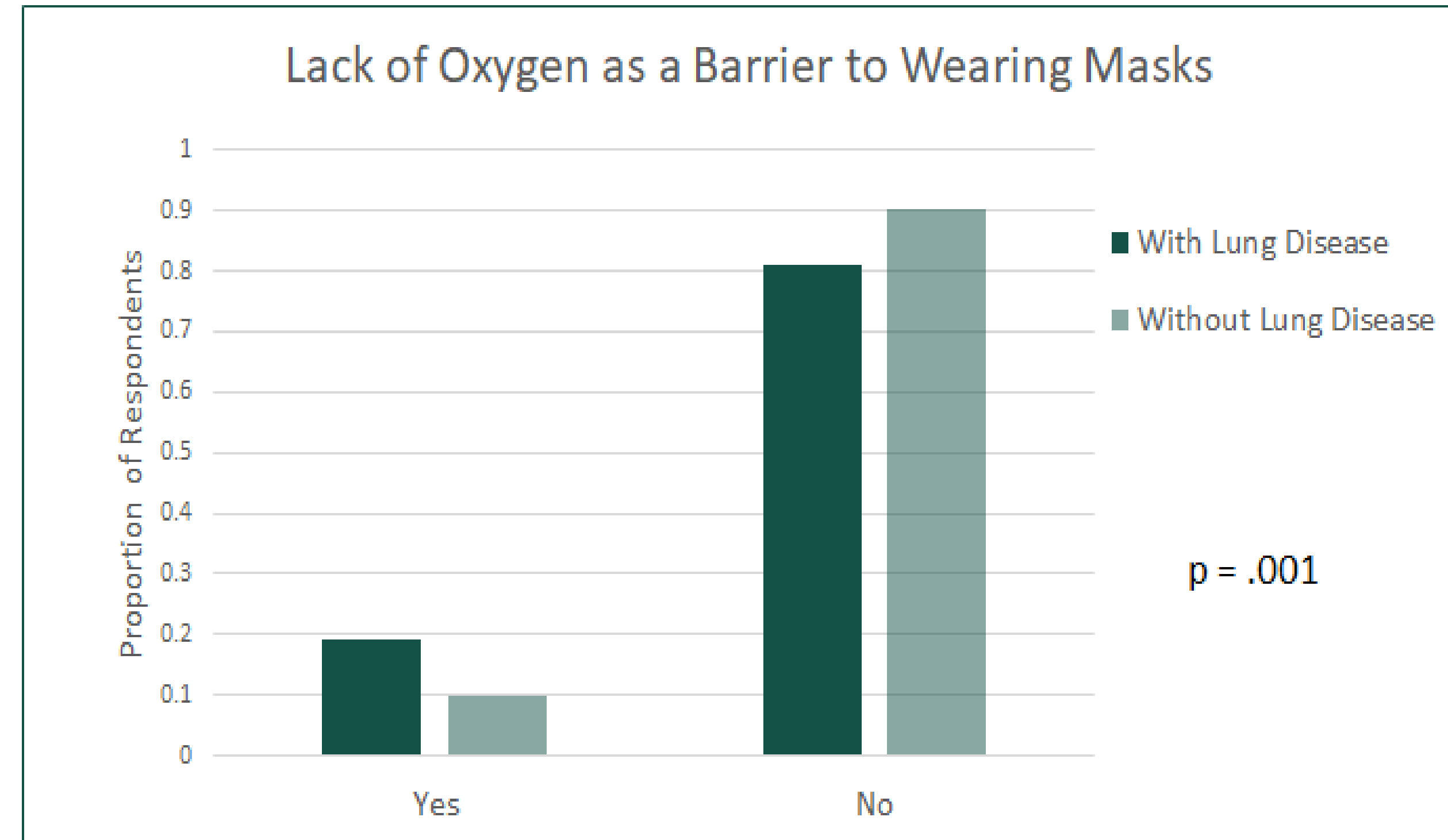


Figure 4

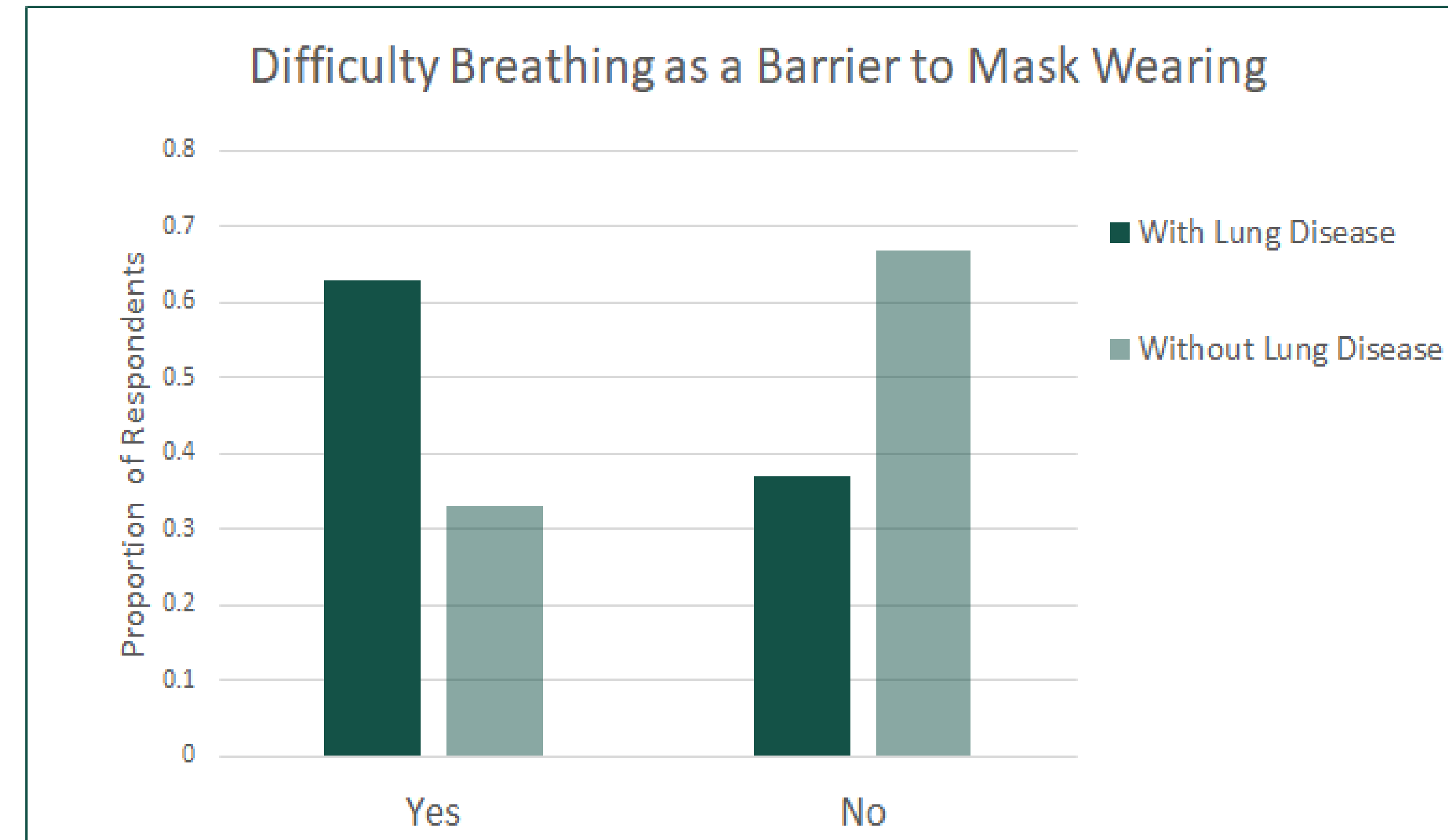
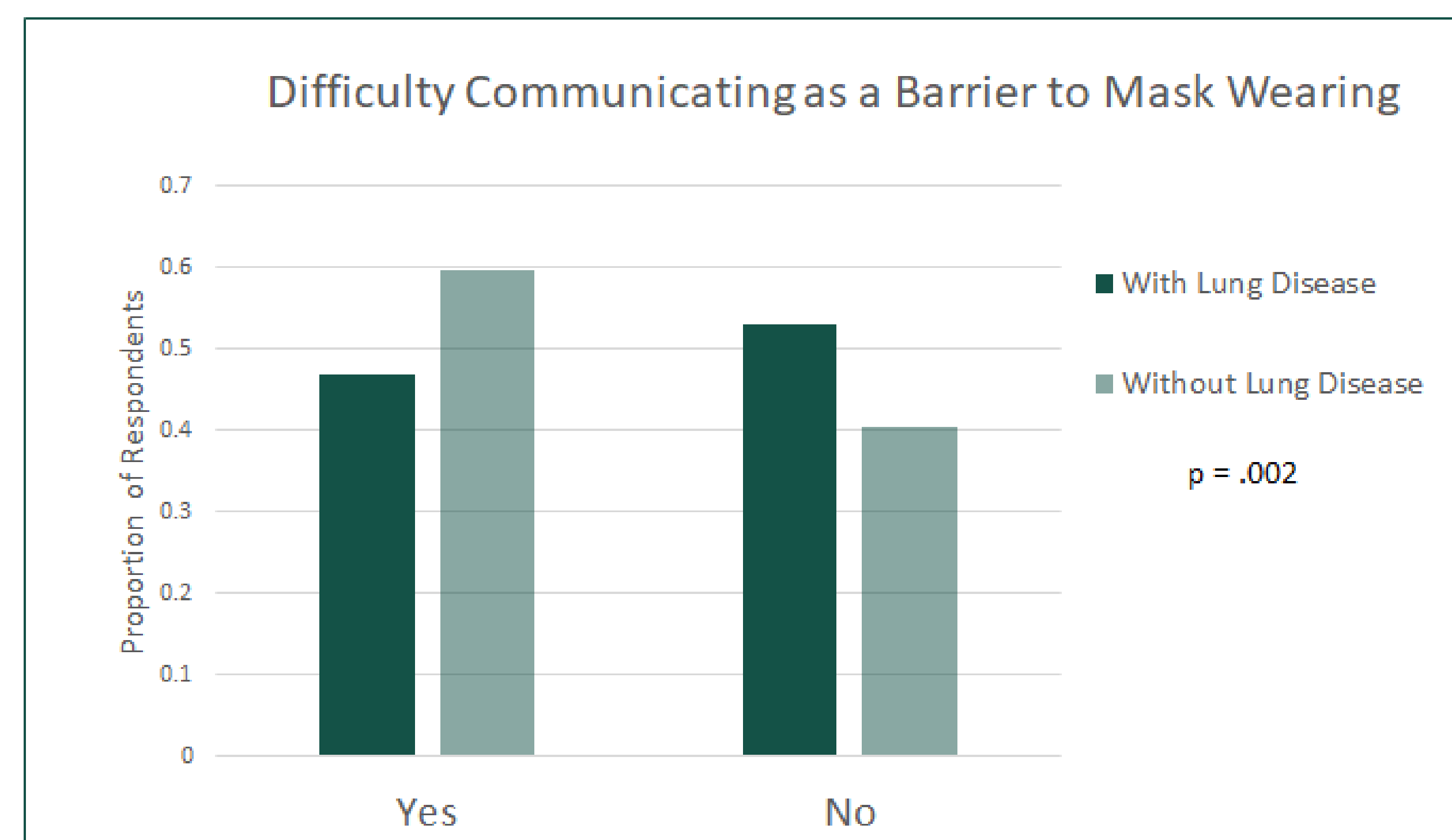


Figure 5



Figures 3, 4, and 5 depict how respondents with a diagnosis of chronic lung disease versus those without lung disease view the lack of oxygen, difficulty breathing, and difficulty communicating as barriers to mask wearing. Each graph gives the proportion of people with and without chronic lung disease who answered yes/no as well as the p-value of the chi-squared analysis of how these two populations answered is given. While there were no significant differences between how these groups view other barriers to mask wearing, we did find a significant difference in how the three barriers shown in the graphs are perceived.

RESULTS

- Respondents diagnosed *with* lung disease:
 - have different perceptions on barriers to mask wearing than those who have not been diagnosed with lung disease.
 - are more likely to reference difficulty breathing and lack of oxygen as barriers to mask wearing.
- Respondents *without* chronic lung disease are more likely to cite difficulty communicating as a barrier to mask wearing.
- There was a significant difference between the perceptions of mask wearing regarding gender identity and urban vs. rural residency, which reflects the findings of previous research.³
- No significant difference found in how people with and without chronic lung disease view the importance of mask wearing in different settings.
- Educational status or yearly income was not found to have a significant impact on survey responses.

DISCUSSION

- Patients with lung disease are more likely to cite difficulty breathing as a barrier to mask use. This finding elicits a need for clinical reassurance that mask wearing does not reduce breathing capacity.
- Patients with lung disease are less likely to indicate difficulty communicating as a barrier than those without lung disease. This finding suggests concerns about ease of breathing and oxygenation overshadow other barriers.
- Differences in mask wearing habits between respondents living in urban versus those rural environments may originate from differences in perceived risk.
- The study was limited by small cohort of respondents diagnosed with chronic lung disease. Other limitations include short survey disbursement period and possibly limited access to the survey for some potential respondents.
- Our study contributes novel evidence about perceptions around mask wearing and as well as to the importance of addressing barriers to mask wearing amongst those with lung disease.

Table 1:

Difficulty Breathing as a Barrier to Mask Wearing	B	S.E.	P-value	Exp(B)	95% C.I. for EXP(B)	
					Lower	Upper
Gender	-0.129	0.146	0.38	0.879	0.66	1.172
Diagnosis of Lung Disease	-1.189	0.177	0	0.304	0.215	0.431
Age	0.007	0.004	0.04	1.007	1	1.015
Constant	0.155	0.257	0.547	1.168		
Lack of Oxygen as a Barrier to Mask Wearing	B	S.E.	P-value	Exp(B)	95% C.I. for EXP(B)	
					Lower	Upper
Gender	-0.173	0.229	0.452	0.841	0.537	1.319
Diagnosis of Lung Disease	-0.747	0.228	0.001	0.474	0.303	0.741
Age	0.006	0.005	0.264	1.006	0.995	1.017
Constant	-1.743	0.368	0	0.175		
Difficulty Communicating as a Barrier to Mask Wearing	B	S.E.	P-value	Exp(B)	95% C.I. for EXP(B)	
					Lower	Upper
Gender	-0.152	0.138	0.269	0.859	0.656	1.125
Diagnosis of Lung Disease	0.449	0.171	0.009	1.567	1.12	2.192
Age	-0.006	0.003	0.065	0.994	0.987	1
Constant	0.258	0.249	0.3	1.294		

Table 1 gives the results of the binary logistic regression analysis that models the relationship between gender, age, and diagnosis of lung disease with how individuals responded to the questions regarding barriers to mask wearing. Highlighted in green are the significance values for whether a diagnosis of lung disease can predict how an individual answers if difficulty breathing, lack of oxygen, or difficulty communicating are barriers to mask wearing, while also controlling for confounding the factors of age and gender. Our results show a significant, predictive relationship between diagnosis of chronic lung disease and perception of these three barriers to using masks during the Covid-19 pandemic.

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