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Age as a Risk Factor for COVID-19 Infection Among Self-Identifying Latinx Adults

By

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Master of Public Health

Epidemiology

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B.S. Georgia State University, 2019

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An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
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Master of Public Health
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ABSTRACT

Age as a Risk Factor for COVID-19 Infection Among Self-Identifying Latinx Adults

By Daniel Milan

Objectives: This study aims to explore the effects and association of age and gender and those who test positive for COVID-19 in a sample of self-identifying Latinx adults within Georgia.

Methods: We conducted a case-control study analysis evaluating the association between age and gender and positive COVID-19 test in a sample of Latinx individuals who were tested for COVID-19 between April 2020 and February 2021. Ethnicity was self-reported, age was categorized into four groups, 18-29, 30-39, 40-49, and 50+ years, and gender was categorized as either male or female. Logistic regression was used to estimate associations between each age category and a positive COVID-19 test result using age of 50+ years as the reference category while adjusting for gender.

Results: Of the included 922 Latinx adults eligible for analysis, 117 (12.7%) had a positive COVID-19 test. The population was 55% female (n=510) and the mean age was 38 years (standard deviation of 12.6). Younger people had a higher likelihood of a positive COVID-19 infection compared to the reference category of 50+ years After controlling for gender, Latinx adults between the ages of 18-29 years were more than two times as likely to have a positive COVID-19 test than those age 50+ years (aOR: 2.38, 95% CI: 1.22-4.67). This difference was larger for those age 40-49 years (aOR: 2.55, 95% CI: 1.28-5.08). Those age 30-39 years were two times more likely to have a positive COVID-19 test, but this increased risk was not statistically significant (aOR: 1.99 95% CI: 0.99-4.04).

Discussion: Our findings that younger age groups were at an increased risk for COVID-19 does not align with previous aggregated data across all US populations and analyses of aggregated minority populations. Differences seen in Latinx populations within state level data are missed in national data and might be due to either incomplete data or various underlying risk factors not fully considered. Disparities found within subpopulations at local levels that are created by systems of health inequities allows public health agencies to collaborate with grassroots organizations in preventative communication and allocating resources to those most vulnerable.

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INTRODUCTION

As of April 2021, SARS-CoV-2, the virus that causes COVID-19 infection, has contributed to more than 31 million cases of COVID-19 resulting in over 500,000 deaths in the United States alone (1). Though advances in prevention have shown promising results, surveillance for 7-day averages continue to report over 60,000 new cases a day in the US (2). With about 41% of the total US population having received at least one dose of a COVID-19 vaccine, there are still many concerns for risk of morbidity and mortality as state public health organizations continue to allocate resources for local communities (2). Reluctance of preventative measures, coupled with incomplete data, contribute to the difficulty to protect those most vulnerable to the impacts of COVID-19 (3).

The impact of COVID-19 has disproportionately affected minority populations in the United States since the early developments of the pandemic. In the US, the Latinx population accounts for approximately 18% of the total population (4). By May of 2020, at least 33% of all known US cases were Latinx, showing the disproportionate burden of COVID-19 infections in the Latinx population compared to the overall US population (5). The overall impact and severity of cases may also be explained by certain socioeconomic risk factors that are associated with the disproportionate prevalence of comorbidities, such as HIV, in minority groups that overlap with COVID-19 (6-7).

While being Latinx is not an objective risk factor for an infectious disease such as COVID-19, this is a common risk indicator pointing to additional underlying risk factors including certain exposures, susceptibility, and related health behaviors create systems of health inequity that exacerbate existing disparities (8-9). These risk factors become more apparent at the local level as states with regions of higher concentrations of Latinx

individuals report having an increased risk of cases and deaths caused by COVID-19 (7). It is important for state public health agencies to analyze these types of issues that can be missed in national data.

As of April 2021, COVID-19 has contributed to more than one million cases in Georgia resulting in almost 20,000 deaths with a 7-day average of 1426 new cases a day (1, 10). Of cases with reported ethnicity information, about 14% of the total number of cases self-identify as Latinx highlighting the burden of COVID-19 infection within this demographic making up about 10% of the state's population (10-11). Though the percentage is considerably lower than the national average, there are certain counties in Georgia that share a larger representation of Latinx individuals than the national average including Hall, Whitfield, and Gwinnett counties (12).

It is difficult to estimate accurately all Latinx individuals that reside throughout Georgia but working with local community organizations ease the burden of directing certain resources to these pockets of communities. The *Consulado General de Mexico* is just one of many organizations catering COVID-19 related resources to all Latinx individuals from surrounding counties in addition to gathering data as they continuously work with public health agencies including the Rollins School of Public Health at Emory University (13-14). With Georgia being one of the lowest states for vaccination rates per 100,000, the use of this information is useful in directing resources to Latinx subgroups most vulnerable for COVID-19 infection (2).

It is clear, prevention measures are at the greatest need in this population. Overlapping risk factors and indicators of health compounds to create a greater risk resulting in COVID-19 disparities that continue to persist. Along with minority groups,

those aged greater than 65 years are disproportionately represented in the overall number of deaths within the US; however, the number of incident cases have seen drastic decreases in this age group due to high rates of vaccinations. However, as cases decrease in older adults, there are corresponding increases in younger groups (15-16). It is possible that certain sociodemographic characteristics for Latinx adults could be associated with COVID-19 at the state level that are not reflective of the statistics for the total US population. This study aims to explore the effects and association of age and gender and those who test positive for COVID-19 in a sample of self-identifying Latinx adults within Georgia.

METHODS

Study Design, Data Sources, and Participants

An unconditional case-control study design was used to investigate an association of age and gender and COVID-19 infection. All data used were from a series of COVID-19 testing events conducted by Emory's COVID-19 Outbreak Response Team and PRISIM Health, both based within the Rollins School of Public Health at Emory University. The data for these analyses come from testing events in Atlanta and Gainesville, GA. Dates for testing events spanned from April 28, 2020, until February 20, 2021. Testing data included lab results from nasopharyngeal swabs, anterior nares swabs, and saliva tests that were used to identify an active COVID-19 infection among participants. All of these are PCR tests and for the purposes of this study, all three will be referred to as a COVID-19 test. Data from testing events were used only if ethnicity, age, and gender variables were reported. Other information gathered varied from each testing event but generally included self-reported contact information, additional demographics, symptoms, and exposure.

Though these testing events were targeted for Latinx populations, there were no exclusion criteria for administering a COVID-19 test; however, the aim of this study was to examine predictors of a positive COVID-19 test among Latinx adults. Our analysis includes all self-identifying Latinx adults, aged 18 years and above, who identified as either male or female. Consideration of other racial or ethnicity groups were not included in any analysis.

Study Variables

The primary outcome of interest was a positive COVID-19 result determined from any PCR COVID-19 test. Age category was the primary exposure of interest and participants were categorized as follows: 18-29, 30-39, 40-49, and 50+ years. The selection of age categories was determined by previous literature and distribution of data available for analysis. Gender, categorized as male or female, was included in the final model as a potential covariate.

Statistical Analysis

All hypothesis testing used a significance level of alpha = 0.05, and all statistical analyses were conducted in SAS, version 9.4. Descriptive statistics were used for all variables of interest. Multivariate logistic regression was used for final analyses. Adjusted odds ratios along with 95% Wald Confidence Intervals were calculated using PROC LOGISTIC to estimate associations between each age category and a positive COVID-19 test result using age of 50+ years as the reference category while adjusting for gender. Any observations with missing outcomes, data points, or self-reported answers that did not fall into our criteria for covariates of interest were dropped. The partial Wald test was used to determine statistical significance after adjusting for covariates. Likelihood Ratio tests and Wald tests using PROC GENMOD and PROC LOGISTIC, respectively, were used to test for interaction between age categories and gender. Confounding was determined by a change in odds ratios calculated from our gold standard model by more than 10%.

RESULTS

Of the total 1211 subjects who participated in the COVID-19 testing events, 266 were excluded because they did not identify as Latinx, 23 were excluded because of missing data points, and 1 subject was excluded because they identified as non-binary, falling outside of the criteria for the gender variable. Figure 1 displays a flow diagram of the inclusion of study participants from the study population into our analytic sample.

Of the included 922 Latinx adults eligible for analysis, 117 (12.7%) had a positive COVID-19 test. Table 1 presents the characteristics of our study population, including distribution of age categories, for all participants; 412 (44.6%) were male, and the mean age of our study population was 38 years with a standard deviation of 12.6.

The p-value for the multiple partial Wald test for the three dummy variables in the age category showed that age category was significantly associated with a positive COVID-19 test after adjusting for gender. The p-value for the partial Wald test for the gender variable indicated it was not significantly associated with a positive COVID-19 test after adjusting for age category. Both Likelihood Ratio tests and Wald tests using PROC GENMOD and PROC LOGISTIC, respectively, indicated no statistically significant interaction between age categories and gender. Similarly, when assessing gender as a confounding variable, there was not clear evidence to suggest that dropping gender in our model changed our odds ratios calculated from our gold standard model by more than 10%, however, it was retained in the final model.

Among all Latinx adults in our analysis, each age category had a higher likelihood of a positive COVID-19 infection compared to the reference category of 50+ years after

controlling for gender. Latinx adults between the ages of 18-29 years were more than two times as likely to have a positive COVID-19 test than those age 50+ years (aOR: 2.38, 95% CI: 1.22-4.67). This difference was even larger for those age 40-49 years (aOR: 2.55, 95% CI: 1.28-5.08). Those age 30-39 years were two times more likely to have a positive COVID-19 test, but this increased risk was not statistically significant (aOR: 1.99 95% CI: 0.99-4.04). Table 2 presents these adjusted odds ratios and additional unadjusted odds ratios for the risk of a positive COVID-19 test. All other adjusted odds ratios comparing all age categories were included and are shown in Figure 2; however, they were not statistically significant.

DISCUSSION

Minority groups have suffered continuous disproportionate effects of COVID-19 including risk of infection, severity and mortality (17, 18). Individual state level data are important to assess when reporting such information as they may differ from multiple state aggregated data or when Latinx individuals are considered as a homogenous group (8, 19). There are limited research findings to address the latter. Using information from a sample of self-identifying Latinx individuals who were tested for COVID-19 in Georgia, this study sought to identify if there were differences by age and gender for those who tested positive for COVID-19. In the Latinx population we tested between April 2020 and February 2021, younger age groups were associated with positive COVID-19 test results compared to those over 50+ years after adjusting for gender. There were no significant differences in testing positive for COVID-19 by gender.

Our main finding that younger age groups are at greater risk for a positive COVID-19 infection compared with older age groups is consistent with some previous findings for Latinx individuals (16). However, this finding is not consistent with early aggregated data from the total US population that identified older minority groups as having the greatest incidence and risk for COVID-19 (20-22). This inconsistency is also seen with US aggregated data and some individual state data that analyzed age differences in minority populations, all of which found that older minority groups had greater incidence and risk for COVID-19 (16, 22). Though older populations have had the greatest risk for COVID-19, the incidence per 100,000 for younger age groups between 18 and 54 years of age, have drastically increased throughout the end 2020 and could help explain how aggregated data masks associations not previously found in state

level data (2, 20). Reasons for the increased incidence in younger age groups as the pandemic continued include earlier access to vaccinations in the older populations and more movement outside of homes in younger groups,

Our main findings suggest that in Latinx populations, younger age groups are at an increased risk for incidence of COVID-19 than older age groups across the entire first year of the pandemic in Georgia. This suggests that there are additional factors that should be taken into consideration rather than just age and gender in the Latinx population. Social factors and determinants of health provide clarity as to why this difference exists in Latinx and other minority populations. Occupation is a primary example where younger minority populations are overrepresented in essential work forces where exposure to COVID-19 is greater due to proximity of work contacts, crowding in work spaces, and increased number of contacts (23, 24). Alternatives within these environments, such as working from home, are minimal. Access to quality education that provides flexible job opportunities are also limited within minority populations and contributes to these consequential decisions (24). Transportation, geographic location, language, and multigenerational and crowded housing are just some of the many intertwined risk factors in the inequitable health systems younger minority populations face that contribute to a greater risk of COVID-19 infection and overall lower quality of health (21, 24).

Additional findings from this analysis indicated that self-identifying Latinx men were at an increased risk for a positive COVID-19 test compared to women. Though this was not significantly significant, it is consistent with some previous findings that report greater incidence in positive COVID-19 tests among men than women in both Latinx and

Black individuals (16). While differences in cases have varied nationally by gender, the explanations for this remain unclear. Some findings can potentially explain these gender differences including previous comorbidities, health behaviors, and even differences in susceptibility by known biological factors for immune responses (25-26).

For every state in the US, there is a large proportion of cases, hospitalizations, and deaths that are missing race, ethnicity, and sex (27). Efforts to minimize incomplete national data through the standardization of state data collection have not been effective as states continuously reported missing information. In Georgia, there are approximately 154,000 cases with either missing race, ethnicity, or sex information (10). Incomplete data complicates identifying burdens of disease in specific populations. Analyzing incomplete data for relevant and significant associations does not provide the best data to use and hinders the goal of providing equitable responses in state and in federal policy and program efforts (28).

It is important to note that these data were mostly collected from a time period when vaccinations were not yet made available to adults over the age of 65 years in Georgia which occurred on January 11, 2021 (29). Since that time, there has been a drastic drop in COVID-19 rates, hospitalizations and deaths in Georgia among those over the age of 65 years. This is not an explanation for the results we saw in the Latinx population in the fall of 2020. Expansion of eligibility criteria continued to widen with all US adults being eligible for the vaccine since April 19, 2021. With 82.6% of those aged 65 years and older having at least one dose of a COVID-19 vaccine in the US, we will continue to see drastic decreases in COVID-19 related morbidity and mortality resulting in significant differences between age groups and risk of COVID-19 infection (2).

We note several limitations in our study. First, each COVID-19 testing event was targeted to all Latinx individuals and attracted some who may not be a current resident of Georgia, potentially influencing the accuracy of the comparison to Latinx individuals residing in Georgia. External validity is also of concern when making inferences to Latinx populations outside of Georgia and other minority populations anywhere in the US. Though different minority populations share similar patterns of burden for incidence of COVID-19, there are some clear distinctions based on various risk factors including, age, sex, and geography (16). Additionally, there was limited information collected to ascertain additional associations that could be important to consider such as work exposures, housing, geographical location, nationality, language and literacy. For Latinx and other minority populations, it is essential to take these non-medical factors and other health behaviors into consideration as they play an important role in risks related to COVID-19 (30). Finally, consideration of other genders was not used in this study and one individual, who identified as non-binary, was excluded from analysis.

This study found younger age groups of Latinx individuals in Georgia were at an increased risk for COVID-19 throughout the pandemic. These findings are not reflective of previous associations found from aggregated US data on race and ethnicity. It is important to understand reasons systems of health inequities create persisting disparities and the difficulty of using these aggregated national data to identify disparities that exist within subpopulations of the United States. The utilization of individual state data aids in recognizing COVID-19 health inequities that burden minority populations. Thorough examination of all possible medically related information along with social determinants of health should be taken into consideration when analyzing Latinx or other minority

populations for their risks related to COVID-19. This evidence allows for state public health agencies to collaborate with grassroots organizations in preventative communication and allocating resources to those most vulnerable.

REFERENCES

1. COVID-19 Map. *Johns Hopkins Coronavirus Resource Center*. (https://coronavirus.jhu.edu/map.html).
2. CDC. COVID Data Tracker. *Centers for Disease Control and Prevention*. 2020;(https://covid.cdc.gov/covid-data-tracker).
3. Bustamante AV, Chen J, Rodriguez HP, Rizzo JA, Ortega AN. Use of Preventive Care Services Among Latino Subgroups. *American Journal of Preventive Medicine*. 2010;38(6):610–619.
4. "U.S. Census Bureau QuickFacts: United States." https://www.census.gov/quickfacts/fact/table/US/RHI725219.
5. Stokes EK. Coronavirus Disease 2019 Case Surveillance — United States, January 22–May 30, 2020. *MMWR Morb Mortal Wkly Rep* [electronic article]. 2020;69. (https://www.cdc.gov/mmwr/volumes/69/wr/mm6924e2.htm).
6. Meyerowitz EA, Kim AY, Ard KL, Basgoz N, Chu JT, Hurtado RM, Lee CK, He W, Minukas T, Nelson S and Ojikutu BO. Disproportionate burden of coronavirus disease 2019 among racial minorities and those in congregate settings among a large cohort of people with HIV. *AIDS*. 2020;34(12):1781–1787.
7. Rodriguez-Diaz CE, Guilamo-Ramos V, Mena L, Hall E, Honermann B, Crowley JS, Baral S, Prado GJ, Marzan-Rodriguez M, Beyrer C, Sullivan PS. Risk for COVID-19 infection and death among Latinos in the United States: examining heterogeneity in transmission dynamics. *Annals of Epidemiology*. 2020;52:46-53.e2.

8. Raine S, Liu A, Mintz J, Wahood W, Huntley K, Haffizulla F. Racial and Ethnic Disparities in COVID-19 Outcomes: Social Determination of Health. *International Journal of Environmental Research and Public Health*. 2020;17(21):8115.
9. Pasco RF, Fox SJ, Johnston SC, Pignone M, Meyers LA. Estimated Association of Construction Work With Risks of COVID-19 Infection and Hospitalization in Texas. *JAMA Network Open*. 2020;3(10):e2026373–e2026373.
10. COVID-19 Status Report. *Georgia Department of Public Health*. (https://dph.georgia.gov/covid-19-daily-status-report).
11. U.S. Census Bureau QuickFacts: Georgia. (https://www.census.gov/quickfacts/GA).
12. Georgia Hispanic or Latino Origin Population Percentage by County. (https://www.indexmundi.com/facts/united-states/quick-facts/georgia/hispanic-or-latino-population-percentage#map).
13. Consulado de México en Atlanta. (https://consulmex.sre.gob.mx/atlanta/index.php).
14. Emory Partners with Mexican Consulate to Address COVID-19 Disparities in Latinx Community | Rollins School of Public Health | Emory University | Atlanta GA. (https://sph.emory.edu/news/news-release/2020/08/mexican-consulate-partnership.html).
15. Gold JA, Rossen LM, Ahmad FB, Sutton P, Li Z, Salvatore PP, Coyle JP, DeCuir J, Baack BN, Durant TM, Dominguez KL. Race, Ethnicity, and Age Trends in Persons Who Died from COVID-19 — United States, May–August 2020. *MMWR Morb Mortal Wkly Rep* [electronic article]. 2020;69. (https://www.cdc.gov/mmwr/volumes/69/wr/mm6942e1.htm).

16. Rentsch CT, Kidwai-Khan F, Tate JP, Park LS, King Jr JT, Skanderson M, Hauser RG, Schultze A, Jarvis CI, Holodniy M, Lo Re III V. Patterns of COVID-19 testing and mortality by race and ethnicity among United States veterans: A nationwide cohort study. *PLOS Medicine*. 2020;17(9):e1003379.
17. Ojinnaka CO, Adepoju OE, Burgess AV, Woodard L. Factors Associated with COVID-Related Mortality: the Case of Texas. *J. Racial and Ethnic Health Disparities* [electronic article]. 2020;(https://doi.org/10.1007/s40615-020-00913-5).
18. Abedi V, Olulana O, Avula V, Chaudhary D, Khan A, Shahjouei S, Li J, Zand R. Racial, Economic, and Health Inequality and COVID-19 Infection in the United States. *J. Racial and Ethnic Health Disparities* [electronic article]. 2020;(https://doi.org/10.1007/s40615-020-00833-4).
19. Khazanchi R, Beiter ER, Gondi S, Beckman AL, Bilinski A, Ganguli I. County-Level Association of Social Vulnerability with COVID-19 Cases and Deaths in the USA. *J GEN INTERN MED*. 2020;35(9):2784–2787.
20. CDC MMWR. COVID-19 Stats: COVID-19 Incidence, by Age Group — United States, March 1–November 14, 2020. *MMWR Morb Mortal Wkly Rep* [electronic article]. 2021;69. (https://www.cdc.gov/mmwr/volumes/69/wr/mm695152a8.htm).
21. Garcia MA, Homan PA, García C, Brown TH. The Color of COVID-19: Structural Racism and the Pandemic's Disproportionate Impact on Older Black and Latinx Adults. The Journals of Gerontology Series B Psychological Sciences and Social Sciences. 2020;XX:1–6.

22. Azar KM, Shen Z, Romanelli RJ, Lockhart SH, Smits K, Robinson S, Brown S, Pressman AR. Disparities In Outcomes Among COVID-19 Patients In A Large Health Care System In California. Health Affairs. 2020;39(7):1253–1262.
23. Dyal JW. COVID-19 Among Workers in Meat and Poultry Processing Facilities — 19 States, April 2020. MMWR Morb Mortal Wkly Rep [electronic article]. 2020;69.
24. CDC. Community, Work, and School. *Centers for Disease Control and Prevention*. 2020;(https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html).
25. Van Dyke ME, Mendoza MC, Li W, Parker EM, Belay B, Davis EM, Quint JJ, Penman-Aguilar A, Clarke KE. Racial and Gender-Based Differences in COVID-19. Front. Public Health [electronic article]. 2020;8. (https://www.frontiersin.org/articles/10.3389/fpubh.2020.00418/full).
26. Walter LA, McGregor AJ. Sex- and Gender-specific Observations and Implications for COVID-19. West J Emerg Med. 2020;21(3):507–509.
27. Racial Data Dashboard. The COVID Tracking Project. (https://covidtracking.com/race/dashboard).
28. Bhatia R, Sledge I, Baral S. The Missing Science: Epidemiological data gaps for COVID-19 policy in the United States. Public and Global Health; 2021.(http://medrxiv.org/lookup/doi/10.1101/2021.02.11.21251602).
29. COVID Vaccine. Georgia Department of Public Health. (https://dph.georgia.gov/covid-vaccine).

30. Williamson EJ, Walker AJ, Bhaskaran K, Bacon S, Bates C, Morton CE, Curtis HJ, Mehrkar A, Evans D, Inglesby P, Cockburn J. Factors associated with COVID-19-related death using OpenSAFELY. Nature. 2020;584(7821):430–436.

Figure 1. Subjects included in risk of a positive COVID-19 test analysis.

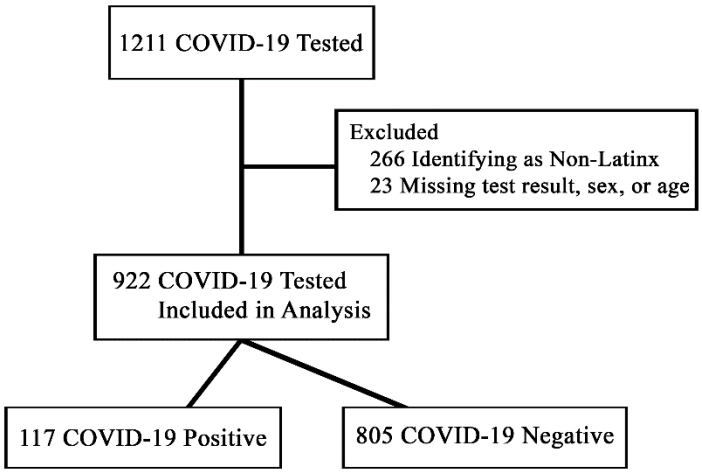

Figure 2. Odds Ratios comparing each Age Category with 95% Wald Confidence Intervals.

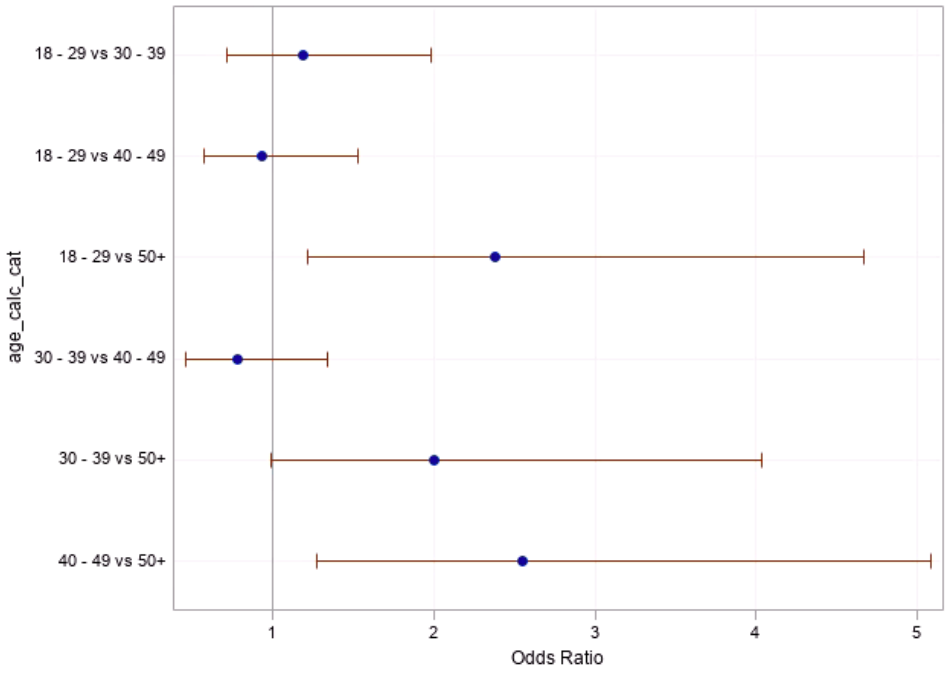

Table 1: Characteristics of Self-Identifying Latinx Adults. by COVID-19 status			
	Total	**Positive COVID-19**	**Negative COVID-19**
	n (%)	n (%)	n (%)
Total Observations	922	117 (12.7)	805 (87.3)
Age Group (years)			
18-29	286 (30.1)	42 (35.9)	244 (30.3)
30-39	233 (25.2)	29 (24.8)	204 (25.3)
40-49	233 (24.2)	34 (29.1)	189 (23.5)
50+	181 (19.6)	12 (10.3)	168 (20.1)
Mean Age (SD)	38 (12.6)	35.9 (11.3)	38.3 (12.8)
Gender			
Male	412 (44.6)	59 (50.4)	353 (43.9)
Female	510 (55.3)	58 (49.6)	452 (56.1)

Table 2: Logistic Regression Analysis: Association between age category and positive COVID-19 test						
	Crude Models			**Adjusted Models**		
	OR	95% CI	p-value	OR	95% CI	p-value
Age Group (years)						
18-29	2.41	(1.23, 4.71)	0.01	2.38	1.22, 4.67	0.011
30-39	1.99	(0.99, 4.02)	0.06	1.99	0.99, 4.04	0.054
40-49	2.52	(1.26, 5.02)	0.009	2.55	1.28, 5.08	0.008
50+	Ref.	--	--	Ref.	--	--
Gender						
Male	1.3	(0.88, 1.92)	0.18	1.28	(0.87, 1.89)	0.21
Female	Ref.	--	--	Ref.	--	--