

COVID-19 Exposure Risk by Speakers of Spanish and English Using a Web-Based Self-assessment Tool



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INTRODUCTION

The COVID-19 pandemic has demonstrated stark racial disparities in how it has affected Hispanic/Latino populations in the USA. Epidemiological data support this showing higher exposure risk, disease prevalence, and mortality in Hispanic/Latino populations compared to their white counterparts.^{1, 2} However, previous work, to our knowledge, does not make a distinction on the basis of Spanish language usage. In this concise report, we detail a comparison of Spanish- vs. English-speaking respondents to a web-based COVID-19 self-assessment tool.³ We believe this criterion targets a specifically underserved community with less access to care, less than adequate healthcare literacy, and a specific need for targeted study and intervention.⁴

METHODS

In March 2020, our team launched a free, web-based COVID-19 self-assessment tool for use by the general public. The self-assessment tool was developed based on guidance from the Centers for Disease Control and Prevention for the general population. Initially, we launched the tool in English only, but it soon became clear that Spanish speakers were eager to utilize the tool, and we created a Spanish language version. Our tool (<https://covidassessment.org/>) was developed by a team of clinicians from the USC Gehr Center for Health Systems Science and Innovation, in partnership with Akido Labs. Web analytics software was used to track tool utilization between March 16, 2020, and October 15, 2020.

For this analysis, we compared responses of English- vs. Spanish-speaking respondents to the questions: “Have you been in contact with someone diagnosed with COVID-19 either within 2 days before their symptoms started, while they had symptoms, within 10 days after their symptoms began, or within 3 days after their symptoms ended?” and “Does your job or work require you to be in close proximity (<6 feet) to other people?” Contact and proximity were the outcomes of

interest with “yes” or “no” responses. Associations between language preference and outcomes were explored in adult users using logistic regression controlling for age and sex. All data was analyzed using SAS version 9.4.

RESULTS

There were 41,326 responses with our outcomes of interest and covariates (Table 1). The average age of users was 35.0 years (SD=13.6) with more female (60.1%) than male (39.9%) users. Among all users, 96.4% were English speakers and 3.6% were Spanish speakers. More than half reported having contact with someone diagnosed with COVID-19 (56.7%) as well as having a job that requires them to be in close proximity to others (52.9%). After controlling for age and sex, the odds of having contact with someone who was diagnosed with COVID-19 in Spanish speakers was twice that of English speakers (odds ratio (OR)=2.0, 95% confidence interval (CI)=1.7–2.3) and was statistically significant ($p<0.001$). Similarly, Spanish speakers had 1.4 higher odds of being in close proximity to others due to their job than compared to English speakers (OR=1.4, 95% CI=1.3–1.6; $p<0.001$).

Table 1 Data Overview: COVID-19 Assessment Tool Survey Results

Variables	Mean	SD	Range
Age (years)	35.0	13.6	18–100
Sex	<i>n</i> *	%	
Female	24,827	60.1	
Male	16,499	39.9	
Language			
English	39,819	96.4	
Spanish	1507	3.6	
Contact ^a			
Yes	16,373	56.7	
No	12,488	43.3	
Proximity to others ^b			
Yes	21,868	52.9	
No	19,458	47.1	

*Denominators may be different due to missing data

^aContact: Have you been in contact with someone diagnosed with COVID-19 either within 2 days before their symptoms started, while they had symptoms, within 10 days after their symptoms began, or within 3 days after their symptoms ended?

^bProximity: Does your job or work require you to be in close proximity (<6 feet) to other people?

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DISCUSSION

Our data suggests that Spanish speakers may be at a higher risk of exposure to COVID-19 due to contact with others personally and professionally as compared to English speakers. Results are consistent with prior research suggesting that Hispanic/Latino communities are disproportionately at risk of COVID-19 infection.¹ However, our language-based approach may target a specific subset of the population and provide future direction for more targeted interventions to address these disparities.

Based on existing racial comparisons, we suspect that the association between Spanish language and COVID-19 exposure is at least partially driven by socioeconomic conditions that disproportionately place Spanish-speakers in frontline jobs that necessitate close interaction with others.⁵ Similar factors may also lead to greater challenges for Spanish-speaking communities in physically distancing from high-risk family members.⁶ By using Spanish language as a differentiator, we hope to deepen the understanding of disparities in this community and provide basis for future investigation.

Disparities in COVID-19 outcomes between Spanish and non-Spanish speakers may be driven by living conditions that necessitate greater interactions with others who may be at risk for spreading the infection. Efforts to address health disparities in Spanish-speaking communities must address the underlying socioeconomic conditions that may lead to disparities. Our data highlight the need for targeted, preventive public health measures to protect Spanish-speaking communities from COVID-19. In the future, we hope to educate Spanish-speaking communities about the value of our tool and expand to additional languages.

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Author Data Availability The dataset analyzed during the current study is available from the corresponding author on reasonable request.

Declarations:

Conflict of Interest: None of authors have any conflicts of interest to report.

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