

Disparities in Season Flu Vaccine uptake among Spanish and English-Speaking Hispanic Americans



A Cross-Sectional Analysis of Behavioral Risk Factor Surveillance Systems (BRFSS) from 2017-2020.

Authors : Del Perkins, B.A.,¹ Angel Giron Lopez, M.P.H.,² Benjamin Greiner, D.O.,² Micah Hartwell, Ph.D.^{1,2,4}

¹Oklahoma State University College of Osteopathic Medicine at Cherokee Nation, Office of Medical Student Research, Tahlequah, Oklahoma ²Oklahoma State University College of Osteopathic Medicine, Office of Medical Student Research, Tulsa, Oklahoma ³University of Texas Medical Branch, Department of Internal Medicine, Galveston, Texas ⁴Oklahoma State University Center for Health Sciences, Department of Psychiatry and Behavioral Sciences, Tulsa, Oklahoma

INTRODUCTION

Research has shown that vaccination for Seasonal Influenza (flu) is associated with a nearly 1/3 reduction in flu-related mortality and a 1/4 reduction in likelihood of ICU admission.¹

From 2009-2019, Hispanic residents of the United States had the third highest rate of flu-related hospitalization with more severe outcomes including intensive care and mortality than non-Hispanic Whites.²

OBJECTIVES

The purpose of this study is to analyze Behavioral Risk Factor Surveillance System (BRFSS) data in order to compare rates between Spanish- and English- speaking Hispanics aged 18-64 and among those 65 and older from 2017-2020 with a secondary objective to investigate trends among age groups by sex.

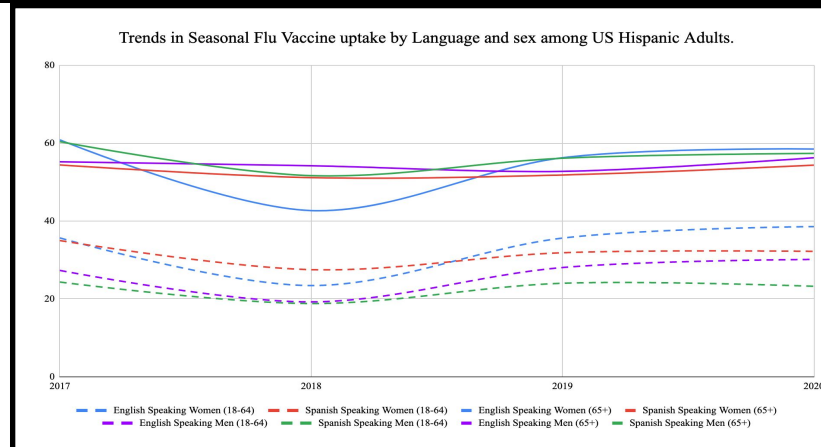
METHODS

We extracted data from the Behavioral Risk Factor Surveillance System (BRFSS) from 2017-2020.

Respondents were included if they identified as being Hispanic and responding to a questions regarding flu vaccination (either via shot or nasal spray). Other variables extracted included the language of survey used (to identify Spanish and English speaking participants), age (18-64 and 65+), and sex.

We then estimated the prevalence of flu vaccination among easy BRFSS cycle overall and among each sub-group (Language, sex, and age-group) and used χ^2 tests of independence to determine associations among groupings.

RESULTS



Each year, the 65 and older age grouping had higher rates of flu vaccine uptake compared to the 18-64 age group.

In the 18-64 age group, English speaking men were about 3-7% more likely than spanish-speaking men to get vaccinated across the board.

Spanish speaking women aged 18-64 were 4% more likely to get vaccinated than their english speaking counterparts in the year 2018, but had lower vaccination rates in other years.

In the age group population of 65+ women, spanish speaking women were almost 8.5% more likely to have been vaccinated than the english speaking women in 2018.

RECOMMENDATIONS

Each year there are nearly 1 billion cases of influenza globally, and between 260,000 to 650,000 influenza associated respiratory deaths.¹ In the United States from 1999 to 2019, Influenza and Pneumonia infection has been the 9th leading cause of death², and there is an estimated annual burden of \$11.2 billion dollars on the United States healthcare system.³

Influenza continues to be one of the most significant preventable causes of illness in the United States, and increasing vaccination rates will help alleviate the burden on the healthcare system as well as save countless amounts of lives.

CONCLUSION

Since English speaking men and women aged 18-64 were more likely to get vaccinated, it is reasonable to conclude speaking predominantly English contributed to the increased vaccination rates.

Due to the fact that Spanish speaking men expressed more of a disparity in vaccination rates compared to Spanish speaking women, we concluded this finding may be due to cultural factors such as male gender roles within the Hispanic Culture.

CLINICAL IMPLICATIONS

Language barriers can be a routine challenge facing healthcare workers in locations of diversity, and this barrier may even perpetuate the decline in empathy expressed by healthcare providers.⁴

Pearson et al., found that Spanish-speaking Hispanics, aged 65 or older, were significantly less likely to have received the influenza vaccine compared to English-speaking Hispanics from 2005-2007⁵; however, our study reveals that this trend changed in 2018 when more Spanish speaking women received vaccination than the english speaking women aged 65+.

REFERENCES

1. Iuliano AD, Roguski KM, Chang HH, et al. Estimates of global seasonal influenza-associated respiratory mortality: a modelling study. *Lancet*. 2018;391(10127):1285-1300.
2. Website. Centers for Disease Control and Prevention. National Center for Health Statistics. Underlying Cause of Death 1999-2019 on CDC WONDER Online Database, released in 2020. Data are from the Multiple Cause of Death Files, 1999-2019, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/ucd101.html> on Dec 20, 2021 2:59:30 PM.
3. Papp MCWS, Muccatello DJ, Stockwell MS, Newall AT. Economic burden of seasonal influenza in the United States. *Vaccine*. 2015;34(7):1960-1966.
4. O'Halloran AC, Holstein R, Cummings G, et al. Rates of Influenza-Associated Hospitalization, Intensive Care Unit Admission, and In-Hospital Death by Race and Ethnicity in the United States From 2009 to 2019. *JAMA Network Open*. 2021;4(6):e212180.
5. Okoli GN, Abou-Setta AM, Neilson CJ, Chai A, Thomson E, Mahmud SM. Determinants of Seasonal Influenza Vaccine Uptake Among the Elderly in the United States: A Systematic Review and Meta-Analysis. *Gerontologist*. 2019;59(2):149-158.
6. Pearson WS, Zhao G, Ford ES. An Analysis of Language as a Barrier to Receiving Influenza Vaccinations among an Elderly Hispanic Population in the United States. *Am J Prev Med*. 2011;51(1):28-37.
7. Elyass M, Rankin J, Chaurani MW. Factors affecting empathetic patient care behaviour among medical doctors and nurses: an integrative literature review. *Baiohm Mediterranean Health Journal*. 2018;2(4):311-318. doi:10.26719/2018.24.3.311
8. Herbert BM, Johnson AE, Pasche-Orlino MK, Brooks MM, Magnum JW. Disparities in Reporting a History of Cardiovascular Disease Among Adults With Limited English Proficiency and Angina. *JAMA Network Open*. 2021;4(2):e2138780.
9. Centers for Disease Control and Prevention (CDC). 2020. CDC - 10153 BRFSS Survey Data and Documentation. [online] Available at: <https://www.cdc.gov/brfss/data-reports/data-documentation/>. [Accessed 12 Jan 2022].
10. "Flu Vaccination Coverage, United States, 2020-21 Influenza Season." Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, October 7, 2021. <https://www.cdc.gov/flu/fluavaccines/coverage-2021estimates.htm#ref>.