A cross sectional analysis of the impact of a language barrier in the osteoarthritic Latina population

OKLAHOMA STATE UNIVERSITY
CENTER FOR HEALTH SCIENCES

Avery Dutcher, B.S.[1], Harisha Chinthalapally, B.S.[1], Benjamin Greiner, D.O.[2], & Micah Hartwell Ph.D [1]

1. Oklahoma State University College of Osteopathic Medicine, Office of Medical Student Research; University of Texas Medical Branch, Galveston, Department of Internal Medicine

BACKGROUND

- Osteoarthritis (OA) is a very prominent musculoskeletal disorder that affects approximately 303 million people worldwide.[1,6]
- Numerous studies have shown language barriers interfere with the ability of Spanish speakers to communicate their pain symptoms to non-Spanish speaking physicians.[2,3,5,7]
- The challenge that language barriers present to the Latina population in regards to the diagnosis and treatment of osteoarthritis remain largely unknown.

HYPOTHESIS

- We hypothesize that the presence of a language barrier will negatively affect diagnosis and treatment of OA, leading to worse health outcomes for the Latina population.

METHODS

- We analyzed data from the CDC's Behavioral Risk Screening and Surveillance System, combining the 2017-2020 cycles using sampling weights provided by BRFSS, adjusted for multiple cycles.
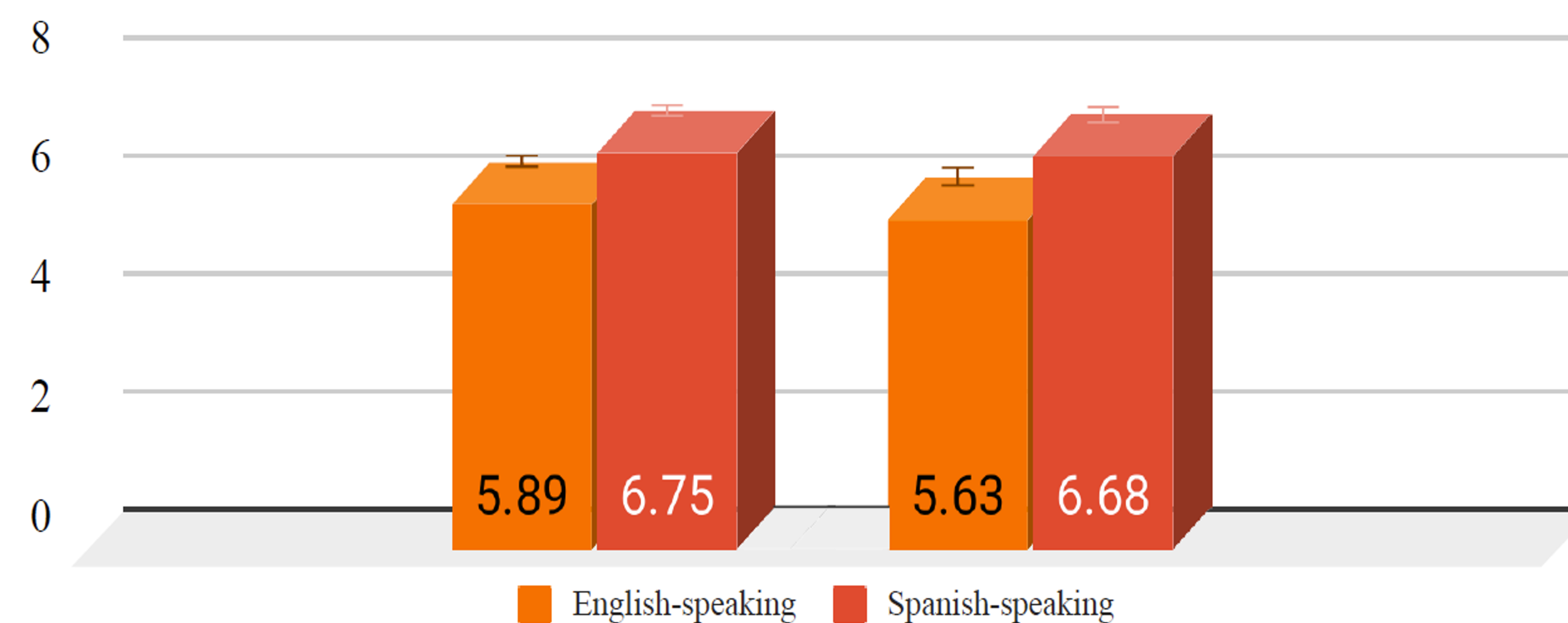
- To distinguish language groups, we assessed what version of the survey was submitted—English or Spanish.

- Next, we calculated prevalence estimates for arthritis diagnosis, limitations, and joint pain (ranged 0-10) and tested for associations between language groups and by age (40+ and 65+).

RESULTS

- Among Latinas aged 40+, the odds of being diagnosed with OA were lower for Spanish-speaking women than English speaking; however, among those 65+, there was no significant association (Table).
- Spanish speaking Latinas 65+ were more likely to report being limited by pain than the English speaking group (Table).
- Differences in pain score between Spanish and English speaking groups were statistically significant for the 40+ (t = 5.25. $p < .001$) and 65+ age ranges (t=5.27, $p < 0.001$; Figure).

Average Arthritis Pain score (1-10) among English and Spanish Speaking Latinas

Legend: English-speaking (5.89, 5.63), Spanish-speaking (6.75, 6.68)

Table 1. Arthritis and symptoms among latina women 40+ years and 65+ years and over.

	Women 40+			Women 65+		
	English Speaking	Spanish Speaking	Odds Ratio	English Speaking	Spanish Speaking	Odds Ratio
	N, (%)	N, (%)	(95%CI)	N, (%)	N, (%)	(95%CI)
Have you been told you have arthritis?						
Yes	1646975 (18.91%)	1587645 (18.23%)	**.89 (.81-.98)**	608658 (23.6%)	770928 (29.89%)	1.11 (.95-1.30)
Limited because of symptoms						
Yes	361314 (24.37%)	390020 (26.31%)	1.08 (.89-1.30)	115223 (18.26%)	174318 (27.62%)	**1.43 (1.09-1.87)**
Arthritis affects ability to work						
Yes	314868 (21.55%)	338956 (23.2%)	1.09 (.91-1.33)	91227 (14.87%)	118501 (19.31%)	1.12 (.84-1.50)

CONCLUSION

- Our study shows that Spanish speaking Latina women who are 40+ are less likely to be diagnosed with OA.
- Spanish speaking Latinas 40+ and 65+ groups reported a higher average joint pain.
- Results from this study shed light on the fact that language barriers have a major effect on the quality of holistic healthcare that osteopathic physicians are required to provide.[4]

SIGNIFICANCE OF FINDINGS

- Language barriers pose a threat to the long term health outcomes of the Latina population.
- There is a gap in adequate treatment following the diagnosis which is represented by reports of higher intensity pain.
- Implementing translators in all medical settings can lessen the adverse outcomes that result from language barriers. [4]

REFERENCES

1. Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017.Lancet. 2018; 392: 1789-1858

2. Im, E. O., Lee, S. H., Liu, Y., Lim, H. J., Guevara, E., & Chee, W. (2009). A national online forum on ethnic differences in cancer pain experience. Nursing research, 58(2), 86..

3. Leiyu Shi, Lydie A. Lebrun & Jenna Tsai (2009) The influence of English proficiency on access to care,Ethnicity & Health, 14:6, 625-642, DOI: 10.1080/13557850903248639

4. Al Shamsi, H., Almutairi, A. G., Al Mashrafi, S., & Al Kalbani, T. (2020). Implications of Language Barriers for Healthcare: A Systematic Review. Oman medical journal, 35(2), e122. https://doi.org/10.5001/omj.2020.40

5.Cohen AL, Rivara F, Marcuse EK, McPhillips H, Davis R. Are language barriers associated with serious medical events in hospitalized pediatric patients? Pediatrics. 2005 Sep;116(3):575-9. doi: 10.1542/peds.2005-0521. PMID: 16140695.

6. Anna Litwic, Mark H. Edwards, Elaine M. Dennison, Cyrus Cooper, Epidemiology and burden of osteoarthritis, British Medical Bulletin, Volume 105, Issue 1, March 2013, Pages 185–199, https://doi.org/10.1093/bmb/lds038

7.Im E, Guevera E, Chee W. The pain experience of Hispanic patients with cancer in the United States. Oncology Nursing Forum. 2007;34:861–868.