



Peer-Led Medical Spanish Education: Effects on Interprofessional Student Functional Language Self-Efficacy

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Introduction

- Spanish-speaking communities continue to be medically underserved despite rapid growth within the US population^{1,2,3}
- Studies have shown that patient-provider language concordance is associated with improved patient experience, satisfaction, and outcomes for this population^{4,5}
- Clinicians can contribute to positive change in this area by increasing their Spanish language proficiency
- Increased linguistic educational opportunities are needed for interprofessional health sciences students to meet this need
- This project aimed to examine the impact of peer-led medical Spanish modules on interprofessional health science students' ability to communicate with limited English proficiency, Spanish-speaking patients

Materials & Methods

- An eleven-session medical Spanish curriculum was created and implemented through BSOM's chapter of Latino Medical Student Association (LMSA)
- References included a current best practice text for medical Spanish education, online Spanish language references and dictionaries, and lived experiences in medical Spanish interpretation⁶
- Curriculum materials created included didactic PowerPoint presentations, *Hechos Rápidos* worksheets, and flipped classroom activities
- The first three sessions were introductory
- For sessions four and beyond, learners indicated professional program type, current level of Spanish ability per a CEFR Grid model, and their ability to perform specific patient encounter tasks either in Spanish or as related to interpreter use⁷
- Learners rated their ability to perform these tasks from 'very poor' (1) to 'exceptional' (7) using a modified seven-point Likert scale before and after each session
- Statistical analysis of survey responses was conducted using standardized student t-test with two-tailed variance and $\alpha=0.05$

Figure 1. An outline of the curriculum, including topics covered during each session.

Session	Lesson
1	Introduction and Curriculum Overview
2	Spanish Crash Course: Part 1 (Syntax, Grammar, and Pronunciation)
3	Spanish Crash Course: Part 2 (Verb Conjugation)
4	Getting to Know Your Patient
5	The Chief Complaint: Taking an HPI
6	Discussing Past History and Review of Systems
7	Allergies, Medications, and Side Effects
8	Assessing Risk: The Family and Social History
9	Mental Health, Substance Abuse, and Encouraging Healthy Lifestyle Habits
10	Physical Exam, Assessment, and Plan
11	Informed Consent, Use of an Interpreter, and Knowing Your Limits

References

- Escarcce JJ, Kapur K. Access to and Quality of Health Care. In: National Research Council (US) Panel on Hispanics in the United States; Tienda M, Mitchell F, editors. Hispanics and the Future of America. Washington (DC): National Academies Press (US); 2006. 10. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK19910/>
- Krogstad, J. M., Passel, J. S., Moslimani, M., & Noe-Bustamante, L. (2023, September 22). *Key facts about U.S. Latinos for National Hispanic Heritage Month*. Pew Research Center. <https://www.pewresearch.org/short-reads/2023/09/22/key-facts-about-us-latinos-for-national-hispanic-heritage-month/>
- Moslimani, M., & Noe-Bustamante, L. (2023, August 16). *Facts on Latinos in the U.S.* Pew Research Center. <https://www.pewresearch.org/hispanic/fact-sheet/latinos-in-the-us-fact-sheet/>
- Jacobs, E. A., Sadowski, L. S., & Rathouz, P. J. (2007). The impact of an enhanced interpreter service intervention on hospital costs and patient satisfaction. *Journal of general internal medicine*, 22 Suppl 2(Suppl 2), 306–311. <https://doi.org/10.1007/s11606-007-0357-3>
- Fernandez, A., Schillinger, D., Grumbach, K., Rosenthal, A., Stewart, A. L., Wang, F., & Pérez-Stable, E. J. (2004). Physician language ability and cultural competence. An exploratory study of communication with Spanish-speaking patients. *Journal of general internal medicine*, 19(2), 167–174. <https://doi.org/10.1111/j.1525-1497.2004.30266.x>
- Ortega, P. (2015). *Spanish and the Medical Interview: A Textbook for Clinically Relevant Medical Spanish* (2nd ed.). Elsevier.
- Council of Europe. (n.d.). *Self-assessment Grids (CEFR)*. European Language Portfolio (ELP). <https://www.coe.int/en/web/portfolio/self-assessment-grid>

Materials & Methods (Cont.)

Figure 2. An example of a *Hechos Rápidos* worksheet used during the curriculum.

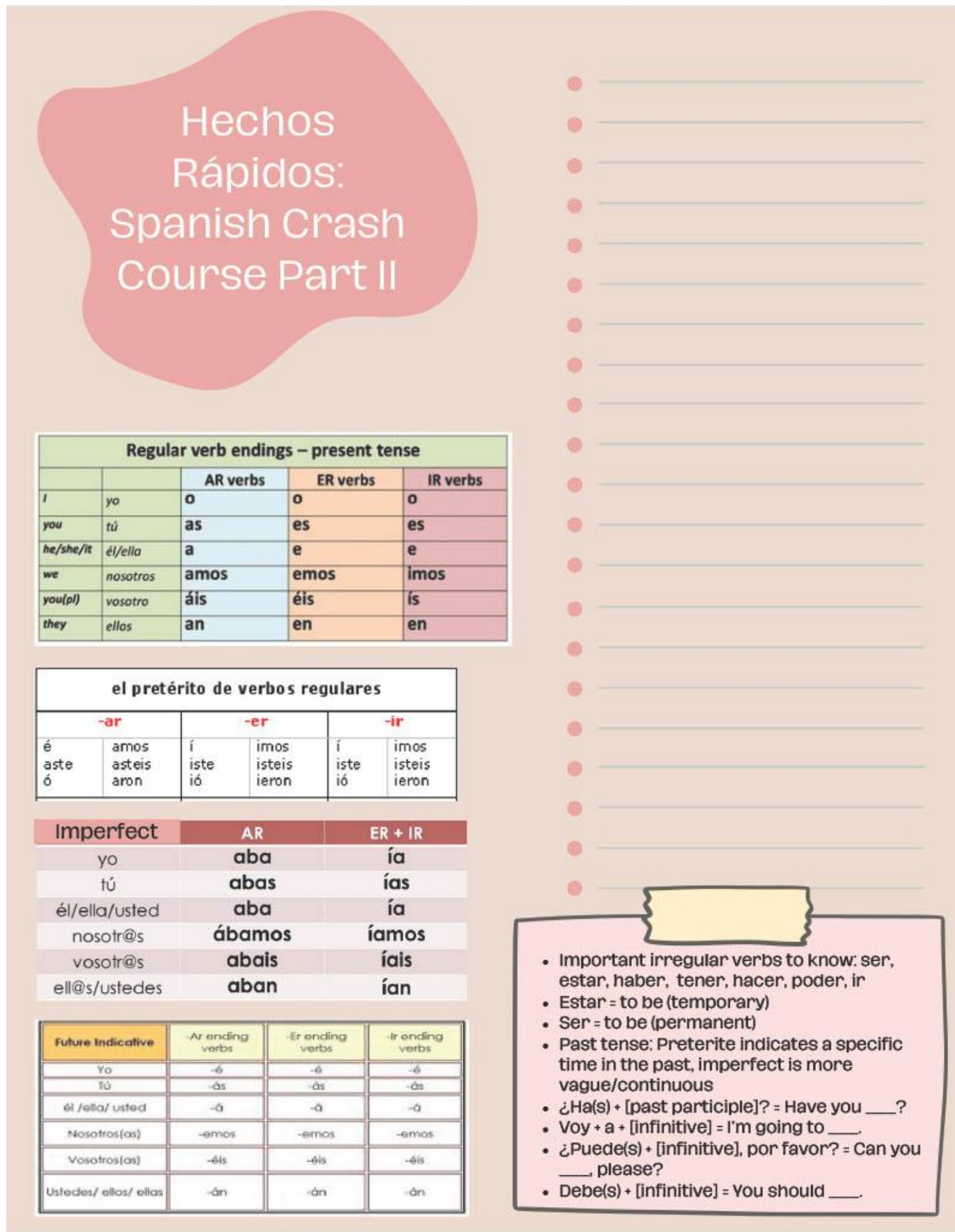
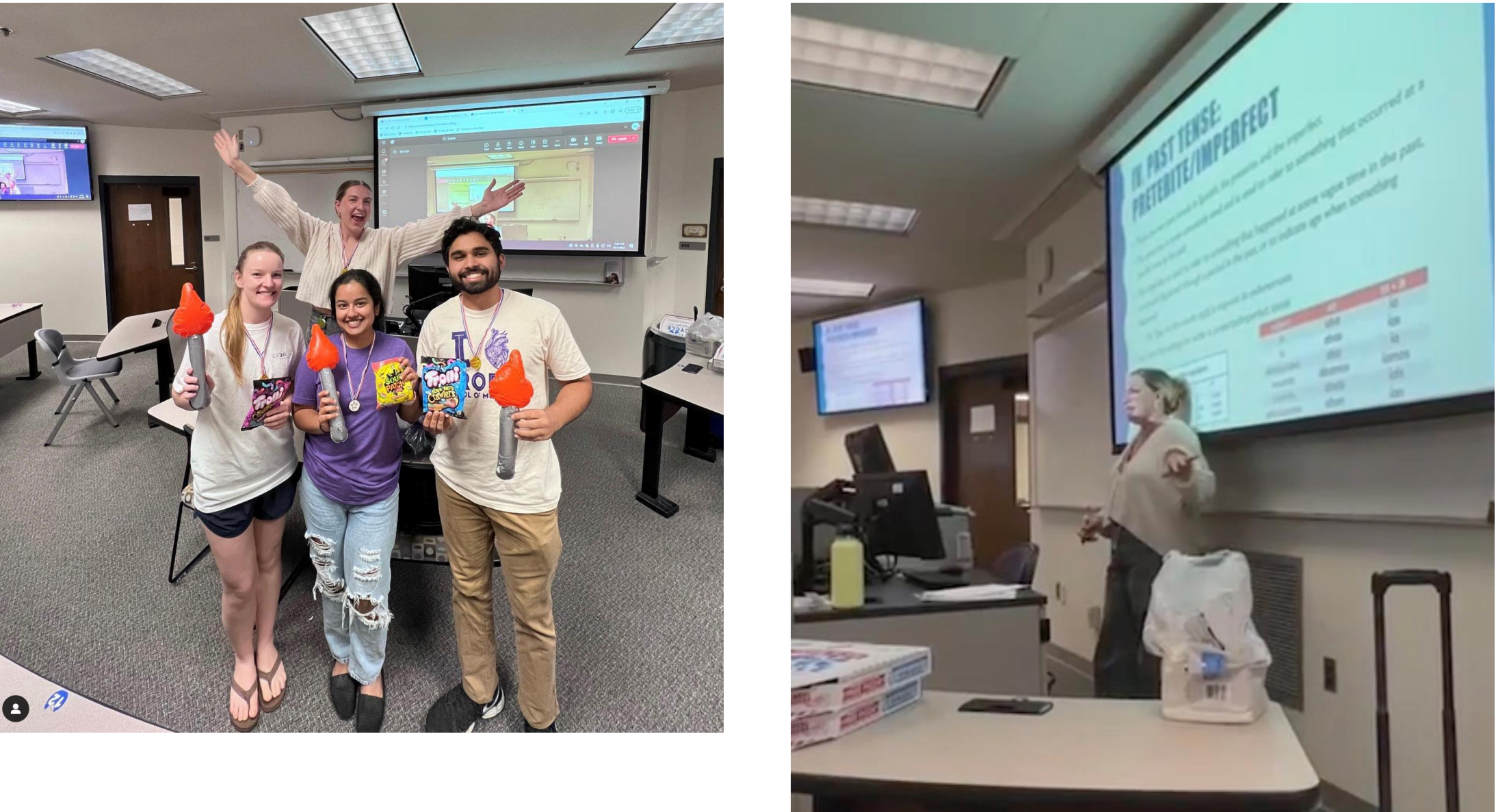


Figure 3. An example of survey questions asked before and after one session.

Session 7: Allergies, Medications, and Side Effects
Please rate your ability to do the following in Spanish in a clinical encounter. Use a 1-7 scale as follows: 1 = Very poor, 2 = poor, 3 = fair, 4 = good, 5 = very good, 6 = excellent, 7 = exceptional

- Perform a medication reconciliation with the patient, including asking about what condition a patient takes a medication for and how they take it.
- Determine medication adherence from the patient interview.
- Determine what medicines the patient is allergic to and what happens when they take these medications.
- Give a patient instructions for taking one medication.
- Give a patient instructions for taking several medications simultaneously.
- Counsel a patient on medication side effects.

Figure 4. Photographs of the curriculum being taught via LMSA.



Results

- On average, four learners were present across eight sessions (n=38)
- Health professional students from programs including allopathic medicine, physician associate, nursing, and nurse anesthesia participated
- Learners reported baseline Spanish ability ranging from 'beginner' to 'advanced.' The largest amount of learners (n=18) were beginner level, followed by intermediate (n=9) and advanced (n=6)
- 100% of learners (n=38) demonstrated improved self-efficacy following participation
- The majority of sessions (6 of 8) displayed a significant change in average learner self-efficacy ($p<0.05$) from before to after the session
- The sessions with the greatest changes in mean self-efficacy pre-intervention to post-intervention were sessions 7 through 11

Figure 5. Pre- and post-session assessments of health professional students evaluating self-efficacy in performing specific tasks in the patient encounter in Spanish, using a modified seven-point Likert scale (1= 'very poor', 7= 'exceptional'); $\alpha=0.05$.

		Pre-test	Post-test	P-Value (P<0.05)
Session 4	Mean (SD)	2.1 (1.6)	3.2 (1.5)	0.002*
Session 5	Mean (SD)	2.4 (0.5)	3.3 (0.5)	0.002*
Session 6	Mean (SD)	3 (1.4)	4 (0.8)	0.03*
Session 7	Mean (SD)	1.8 (0.9)	3.2 (0.9)	0.0000006*
Session 8	Mean (SD)	1.3 (0.5)	3.4 (1.1)	0.0000002
Session 9	Mean (SD)	3.2 (1.7)	4.6 (1.5)	0.002*
Session 10	Mean (SD)	2.8 (2.1)	4.2 (1.7)	0.02*
Session 11	Mean (SD)	2.2 (1.8)	4.0 (1.9)	0.16

Figure 6. Pre- and post-session assessments of health professional students evaluating self-efficacy in performing specific tasks in a clinical encounter with a Spanish-speaking patient as related to interpreter use, using a modified seven-point Likert scale (1= 'very poor', 7= 'exceptional'); $\alpha=0.05$.

		Pre-Test	Post-Test	P-Value (P<0.05)
Session 11	Mean (SD)	2.3 (1.8)	6.5 (0.5)	0.0000002

Discussion & Future Directions

- Peer-led modules tailored to specific functional tasks within the patient encounter could be a beneficial educational tool for medical Spanish learners in the professional school setting
- The increase in patient-provider language concordance from peer-led instruction could improve experience, satisfaction, and clinical outcomes for Spanish-speaking patients
- Renditions of this curriculum have continued to be offered yearly through Brody's LMSA chapter
- Flipped classroom activities focused on patient-provider role playing scenarios, oral interpretation practice, and structured group discussion around problem solving in patient-provider-interpreter encounters had the greatest changes pre-test to post-test in mean self-efficacy. Later versions of this curriculum have been adapted to focus more on these activities
- No involvement from DMD or DPT students and limited involvement from BSN and CRNA students suggests a need for greater advertisement of the curriculum to students in these programs
- A challenge for the curriculum was overall number of participants. Future participation could be increased via multimodal advertisement and/or incentivizing meeting attendance
- Future directions could include measuring learner improvement across the curriculum, expanding learner assessment to objective measures such as Spanish-language OSCEs, or formal integration of these materials into Brody's existing medical student curriculum

Acknowledgements

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