



# Assessment of Medical Spanish Language Proficiency in BSN Students: A Pilot Study

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ORIGINAL PROJECT



## ABSTRACT

**Background:** Providers fluent in the native language of their patients may erroneously forego the use of professional interpreters based on a self-assessment of their medical Spanish language proficiency.

**Objectives:** The purpose of this study was to measure medical Spanish language proficiency before and after a medical Spanish language course in Bachelor of Science in Nursing students.

**Design:** Quantitative pre-and-post test pilot study.

**Setting:** An urban School of Nursing located in the northeastern US.

**Participants:**  $N = 10$ .

**Methods:** Self-assessed medical Spanish language proficiency was compared before and after a non-credit-bearing medical Spanish course using the Interagency Language Roundtable (ILR) scale. Objective faculty-rated proficiency assessments were administered using faculty developed, rubric-guided clinical scenarios at mid and endpoints of the course that coincided with the levels of the ILR scale. We hypothesized that participants' self-assessed final ILR scores would align with objective faculty-rated final ILR scores, medical Spanish language proficiency scores would improve when comparing objective mid- and end-point evaluations, and participants would demonstrate improved self-assessment of medical Spanish language proficiency using the ILR scale after completing the course. Wilcoxon signed-rank test compared participants' self-assessed final ILR scores with objective faculty-rated final ILR scores, participants' mid- and end-point evaluation scores, and participants' baseline and final self-assessed ILR scores after completing the course.

**Results:** Participants' self-assessed final ILR scores were aligned with objective faculty-rated final ILR scores ( $Z = -.577$ ,  $p = .564$ ) after completing the course. Participants' mid- and end-point evaluation scores ( $p = .498$ ) were not significantly different. Significant differences were noted between participants' self-assessed ILR baseline and final scores ( $Z = -2.887$ ,  $p = .004$ ).

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**Conclusion:** Participant self-assessed final ILR scores improved after taking the medical Spanish course and aligned with faculty-rated final ILR scores. A medical Spanish course offered in Bachelor of Science in Nursing programs may improve nurses' self-assessment of medical Spanish language proficiency, and therefore may improve nurse-patient communication when encountering Spanish-speaking patients with limited English proficiency (LEP) in clinical settings.

## INTRODUCTION

Nurse-patient communication in the United States has become more complex as the population has increasingly become more ethnically and linguistically diverse (Ali & Johnson, 2017; Ali & Watson, 2018). According to the Pew Research Center, "In 2022, Hispanics (Latinos) made up nearly one-in-five people in the U.S. (19%), up from 16% in 2010 and just 5% in 1970" (Krogstad et al., 2023). Language discordance between healthcare providers and patients has been shown to result in increased medical errors, thus perpetuating health disparities (Berdahl & Kirby, 2019; Cano-Ibáñez et al., 2021; Diamond et al., 2019a). Programs that receive federal financial funding must offer services and programs to individuals with LEP that are accessible and equitable (Office of Civil Rights, 2020). The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) (2021) recommends that organizations have a process for ensuring that patients with LEP have access to language interpretation. However, there are no specific recommendations for when bilingual or multilingual providers of care should use professional interpreters. JCAHO (2023) asserts that historically marginalized populations often experience worse health outcomes compared to whites primarily because of deficits in quality of communication. The issue of healthcare disparities was elevated to a new National Patient Safety Goal, Goal 16, to improve healthcare equity in July 2023. Many healthcare facilities use professional telephone medical language translators to provide this service. However, the use of professional telephone medical language translators is not always effective. Benda et al.'s (2021) observational study examined communication type and quality between English proficient and LEP patients, and hospital workers in the emergency department. Compared to English proficient patients, patients with LEP received medical phone translations that did not always convey the intended message with issues such as not hearing information correctly and/or missing visual cues that could have facilitated communication.

Healthcare providers who identify as being proficient in the native language of their patients may choose to forego the use of professional interpreters due to their self-assessment of language proficiency (the ability to provide accurate and effective communication) (Interagency Language Roundtable [ILR], 2021). However, research has shown that these providers may under- or overestimate their proficiency (Diamond et al., 2019b; Lie et al., 2018; Lundin et al., 2018; Ortega et al., 2017). Inaccurate overestimation of medical Spanish language proficiency by healthcare providers is problematic since it can result in suboptimal care and adverse outcomes for patients with LEP (Hull, 2016).

Current research has focused on the self-assessment of medical Spanish language proficiency in medical students, physicians, and physician assistants (Cooper et al., 2018; Lie et al., 2018; Lie et al., 2020; Ortega et al., 2017). However, to date, there is very limited research on the self-assessment of medical Spanish language proficiency in English/Spanish bilingual nurses. It is important that regardless of the patient population, nurses who self-assess as proficient in Spanish communicate accurately in order to facilitate optimal health outcomes (Noe-Bustamante et al., 2020; Ratna, 2019). Over-estimating language proficiency can potentially lead to inaccurate nurse-patient communication and therefore suboptimal health outcomes. Objective assessment of medical Spanish language proficiency in bilingual English/Spanish nurses may provide a solution to the problem of proficiency overestimation (Hull, 2016).

The Interagency Language Roundtable (ILR) is a standardized, objective language assessment scale that is applicable to all languages with documented reliability and validity established by the Interagency Roundtable, a multidisciplinary group of representatives from federal agencies

that focus on improving language concordance in the United States. Considering the performance criteria for each level, the ILR scale can be used to self-assess proficiency in a target spoken language or guide the assessment of spoken-language proficiency by an authorized examiner (ILR, 2021). Objective assessment of bilingual English/Spanish nurses using the ILR scale may help to achieve a more accurate assessment of their medical Spanish language proficiency than a subjective self-assessment (Ortega et al., 2017). Nursing students at our institution have frequently expressed interest in taking a medical Spanish course in nursing school, however adding a credit bearing medical Spanish course to the current BSN curriculum was not feasible. We offered this medical Spanish course to meet the students' needs and realized an opportunity to replicate a similar study that was undertaken with medical students (Ortega et al., 2017).

The aims of this pilot study were to: 1) compare participants' self-assessed final medical Spanish language proficiency (measured using the ILR scores) to objective faculty-rated final ILR scores, 2) compare participants' medical Spanish language proficiency objectively at mid- and end-points of the course with realistic clinical vignettes similar to experiences encountered in real-life healthcare settings between nurses and patients, and 3) compare participants' baseline self-assessment of medical Spanish language proficiency to their final self-assessed proficiency after a 10-week non-credit-bearing medical Spanish course with the ILR scale.

It was hypothesized that 1) participants' self-assessed final ILR scores would align with objective faculty-rated final ILR scores, 2) participants' medical Spanish language proficiency scores would improve when comparing objective mid- and end-point evaluation scores, and 3) participants would demonstrate improved self-assessment of medical Spanish language proficiency using the ILR scale after completing the medical Spanish course.

## METHODS

This quantitative pre-post test pilot study examined self-assessed medical Spanish language proficiency in Bachelor of Science in Nursing (BSN) students before and after a medical Spanish course using the ILR (2021) scale. Students' final self-assessment of language proficiency was compared to objective faculty-rated proficiency assessments. The medical Spanish course was delivered completely online to participants in a small group setting with continuous practice of medical Spanish vocabulary, and the translation of clinical vignettes and paired mock 'nurse-patient' dialogues into Spanish. Pronunciation and content meaning were reviewed and reinforced throughout by the principal investigator who is proficient in the Spanish language and has documented language proficiency in Spanish to provide services in healthcare settings (Kaiser Permanente, n.d.). Consistent interaction of motivated individuals in a supportive group environment is believed to promote learning (Bandura, 1977).

Potential participants were recruited by the researchers via announcements in the institution's Blackboard School of Nursing (SON) community and the SON's Student Nurses' Association websites. A recruitment flyer created by the researchers was posted in the SON. Inclusion criteria consisted of the following: nursing students 18 years of age or older in the upper-levels (3<sup>rd</sup> and 4<sup>th</sup>) of the program, and Spanish language self-assessment of proficiency using the ILR scale at a level 2 or higher. Students were excluded if they were enrolled in the researchers' classes during the time the pilot study was being conducted. Approval from the university's Institutional Review Board (IRB protocol #: 21/09-108-Bkln) was received prior to data collection. Data were collected from March through December of 2022.

## DATA COLLECTION PROCEDURES

### Recruitment and Enrollment

After an initial correspondence via institutional email, the principal investigator met with potential participants over Zoom to discuss the details of the pilot study, and dates/times for the educational sessions. Interested students were consented electronically and enrolled prior to completion of a

demographic form. Baseline self-assessment of Spanish language proficiency using the adapted version of the ILR scale was also performed.

According to the ILR scale, levels 0 (no proficiency) and 1 (basic proficiency) represent minimal performance where translation is not possible and demonstrate weaknesses in all the required skills (ILR, 2021). Therefore, only students who self-assessed at a level 2 or higher were selected to participate.

## Measures

The original standard ILR scale describes six standard levels of spoken-language proficiency with specific criteria for each level. Scores of 0, 1, 2, 3, 4, or 5 are assigned, with “0” indicating no proficiency and “5” indicating functionally native proficiency. Each higher level implies mastery of the previous levels. Figure 1 describes the ILR scale levels. The ILR scale, adapted for this study by the PI, includes four of the six spoken-language proficiency levels: fair, good, very good, and excellent (2 to 5 respectively).

**Excellent:** Speaks proficiently, equivalent to that of an educated speaker, and is skilled at incorporating appropriate medical terminology and concepts into communication. Has complete fluency in the language such that speech in all levels is fully accepted by educated native speakers in all its features, including breadth of vocabulary and idioms, colloquialisms, and pertinent cultural references.

**Very Good:** Able to use the language fluently and accurately on all levels related to work needs in a health care setting. Can understand and participate in any conversation within the range of his/her experience with a high degree of fluency and precision of vocabulary. Unaffected by rate of speech. Language ability only rarely hinders him/her in performing any task requiring language; yet the individual would seldom be perceived as a native.

**Good:** Able to speak the language with sufficient accuracy and vocabulary to have effective formal and informal conversations on most familiar topics. Although cultural references, proverbs, and the implications of nuances and idiom may not be fully understood, the individual can easily repair the conversation. May have some difficulty communicating necessary health concepts.

**Fair:** Meets basic conversational needs. Able to understand and respond to simple questions. Can handle casual conversation about work, school, and family. Has difficulty with vocabulary and grammar. The individual can get the gist of most everyday conversations but has difficulty communicating about health care concept.

**Figure 1** Interagency-  
Language-Roundtable.

Note. The adapted Interagency-  
Language-Roundtable (ILR)  
(2021) for this study shows four  
levels of language proficiency.

Using the adapted ILR scale, participants self-assessed their baseline medical Spanish language proficiency level after reviewing the criteria for each level: fair, good, very good, and excellent (scores of 2 to 5, respectively), as shown in Figure 1. Faculty used the ILR scale (objective ILR) to measure participants' Spanish language proficiency at the completion of the course. Each participant was assigned a folder with a unique identifier to maintain confidentiality during the data collection process. Materials were placed into the folders and kept by the PI in a secure location as the study progressed. All data were entered into an Excel spreadsheet in a password-protected file on an institutional laptop.

## Summary of Mid-and End-Point Evaluations

Weeks 5 and 10 were designated for the mid- and end-point evaluations developed by the PI and consisted of clinical vignettes replicating nurse-patient encounters. A faculty-developed 15-point rubric evaluated the accuracy of the medical Spanish language translations throughout the vignettes using the following score ranges: 1–5 points ( $\leq 33\%$  accuracy) = poor; 6–8 points (40–53% accuracy) = fair; 9–11 points (60–73% accuracy) = good; 12–14 points (80–93% accuracy) = very good; and 15 points (100% accuracy) = excellent, as shown in Figure 2.

These scores coincided with scores assigned to the specific performance-based categories of the ILR scale. The mid-point evaluation during week 5 tested participants' medical Spanish language proficiency with a clinical vignette about a patient presenting with a chief complaint and obtaining a patient's history. The end-point evaluation during week 10 tested participants' medical Spanish language proficiency using a clinical vignette about a patient requiring a physical assessment and discharge instructions.

At the completion of the course, participants repeated a self-assessment of medical Spanish language proficiency with the adapted ILR scale. Finally, participants were evaluated for medical Spanish language proficiency by the principal investigator based on their end-point evaluation

- Week 1 – Grammar, Greetings, People/Places, Family, Introductions
- Week 2 – Body Parts, Medical Terminology, Lab Tests
- Week 3 – Patient Orientation, Medications, Vital Signs, Pain Assessment, Chief Complaint, History of Present Illness
- Week 4 - Past Medical History, Social History, Exercise/Work
- Week 5 – Mid-Point Testing Proficiency (15 points): Admission of patient
  - Introduction of self/patient identification (1 point)
  - Chief Complaint (1 point)
  - Onset of symptoms (10 points): duration, timing/frequency, location of pain, quality, radiation, severity, duration of pain, prior episodes, alleviating/aggravating factors.
  - Medications (1)
  - Past medical history (2)
- Week 6 Review of Systems: Cardiac, Respiratory, Neurological.
- Week 7 Review of Systems: Eyes, Ears, Nose, & Throat; Gastrointestinal.
- Week 8: Psychiatric, Maternity, Pediatrics
- Week 9: Discharge Instructions, DNR
- Week 10: End-Point Testing Proficiency (15 points). Discharge of patient and patient education
  - Cardiac Example: Student will review symptoms (6 points) related to heart failure - must review at least 6 of the 8 following symptoms: ankle/leg swelling, orthopnea @ rest, exertional dyspnea, fatigue/weakness, rapid/irregular heartbeat, rapid weight gain, coughing/wheezing, confusion.
  - Patient Teaching: activity levels (1), smoking cessation (1), limit alcohol intake (1), medication adherence (1), diet (sodium restrictions) (1), weight management (1), stress management (1), rest/sleep (1), and follow-up with PCP (1).

*Evaluation Rubric*

15 points (100% accuracy) = excellent  
 12-14 points (80-93% accuracy) = very good  
 9-11 points (60-73% accuracy) = good  
 6-8 points (40-53% accuracy) = fair  
 1-5 points ( $\leq 33\%$  accuracy) = poor

**Figure 2** 10-Week Medical Spanish Language Proficiency Curriculum.

scores that coincided with the adapted ILR scale. Two final survey questions measured participants' confidence levels when communicating with Spanish speaking LEP patients: 1) if you are working with LEP in a clinical setting and you were in a situation where you needed to wait 15 minutes or more for a certified Spanish language interpreter, would you a) wait 15 minutes or more to work with an interpreter? (yes/no) or b) begin to communicate in Spanish with the patient/family? (yes/no), and 2) do you feel this 10-week medical Spanish course increased your ability to verbally communicate with patients with LEP in Spanish in a clinical setting using medical Spanish? (yes/no). We chose the 15-minute period as a reasonable time frame to wait for an interpreter to translate.

The medical Spanish course consisted of eight 2-hour sessions on various aspects of healthcare that paralleled content in the nursing curriculum as shown in [Figure 2](#). During each of the 2-hour sessions, participants practiced medical Spanish terminology, English to Spanish translations of clinical scenarios, and nurse-patient dialogues in Spanish. Throughout the sessions, proper pronunciation and content meaning were reviewed and reinforced by the PI.

## DATA ANALYSIS

Data were analyzed using IBM SPSS Statistics (Version 29.0), statistical significance was set at  $p < .05$ . Descriptive statistics were used to assess all variables. Age and baseline self-assessed ILR scores were treated as continuous independent variables.

Gender, program level, county of residence, primary language, ability to speak the Spanish language prior to the study (yes/no), employment in a healthcare facility where there are Spanish speaking patients (yes/no), and prior limited knowledge of medical Spanish (yes/no) were treated as categorical independent variables. Participants' final self-assessed ILR scores, faculty rated mid- and endpoint proficiency scores, and final faculty-rated objective ILR scores were treated as continuous outcome variables.

Considering the small sample size, a Wilcoxon signed-rank test was applied to investigate the between-group and within-group effects on the outcome variables. The Wilcoxon signed-rank test compared participants' baseline and final self-assessed ILR scores, mid- and end-point faculty-rated proficiency evaluations, participants' baseline self-assessed ILR scores with faculty-rated final ILR scores, and participants' final ILR scores with the faculty-rated final ILR scores.

## RESULTS

The initial enrolled sample consisted of 18 participants. Six participants withdrew mid-way, citing overwhelming academic responsibilities and two withdrew by the second week stating the medical Spanish course was too difficult. Thus, descriptive data were analyzed for this pilot study for 10 participants and are described in [Table 1](#). See [Figure 3](#) for a flow chart of the enrollment and withdrawal of participants during the study period. Mean participant age was 29.7 ( $SD = 9.166$ ), and ages ranged from 21 to 48 years. All participants were female, upper-level nursing students, and eight stated English was their primary language. Seventy percent resided in an urban area, 70% were employed in a health care facility with patients who primarily spoke the Spanish language and were not English language proficient and 60% had prior limited knowledge of medical Spanish.

[Table 2](#) describes the association between participants' final self-assessed ILR scores and the faculty-rated final objective ILR scores. No statistically significant differences were found between participant and faculty-rated final ILR score results ( $Z = -.577$ ,  $p = .564$ ). These results support the first hypothesis that participants' self-assessed ILR scores at the end of the course would align with faculty-rated final ILR scores. There was no statistically significant difference between faculty-rated objective mid- and end-point proficiency scores ( $Z = -.677$ ,  $p = .498$ ) after the participants completed the course. These results do not support the second hypothesis. Finally, there was a statistically significant difference in final self-assessed ILR scores ( $Z = -2.887$ ,  $p = .004$ ) compared to baseline self-assessed ILR scores after completing the medical Spanish course. After course completion, all participants reported increased confidence in their verbal communication with Spanish speaking patients in a clinical setting (refer to [Table 3](#)).

## DISCUSSION

To our knowledge, this is the first study to examine self-assessed medical Spanish language proficiency in BSN students before and after completing a medical Spanish course. Differences

VARIABLE	N	PERCENT
Age	Mean = 29.7 (range = 21–48)	
Gender		
Female	10	100
Program Level		
3 <sup>rd</sup>	1	10
4 <sup>th</sup>	9	90
County of Residence		
Urban	7	70
Suburban	3	30
Primary Language		
English	8	80
Spanish	2	20
Ability to Speak Spanish Language		
Yes	8	80
No	2	20
Work in Healthcare Facility with Spanish-speaking clients		
Yes	7	70
No	3	30
Prior knowledge of Medical Spanish		
Yes	6	60
No	4	40

**Table 1** Demographics of Participants (N = 10).

	<i>Spring 2022</i>	<i>Summer 2022</i>	<i>Fall 2022</i>	<i>Total</i>
<i>Initial Enrollment</i>	<i>5</i>	<i>11</i>	<i>2</i>	<i>18</i>
<i>Withdrawal</i>	<i>2</i>	<i>6</i>	<i>0</i>	<i>8</i>
<i>Remaining</i>	<i>3</i>	<i>5</i>	<i>2</i>	<i>10</i>

**Figure 3** Enrollment-Withdrawal Flow Chart.

VARIABLE	N	PERCENT (%)	M	SD
<b>Self-Assessed ILR**</b>				
Baseline	10	100	2.9	.876
Excellent	1	10		
Good	6	60		
Fair	3	30		
Final	8	100	3.9	.738
Excellent	2	20		
Good	5	50		
Fair	3	30		
<b>Faculty Evaluation Scores &amp; Final ILR</b>				
Mid Evaluation*	10	100	11.7	.696
Final Evaluation*	10	100	11.9	.833
Final Objective ILR**	10	100	3.9	.233

**Table 2** Interagency Roundtable (ILR) Self-assessment and Faculty Assessment.

\*Faculty evaluation scores: Excellent (15); Very good (12–14); Good (9–11); Fair (6–8).

\*\* Adapted ILR scores: Excellent (5); Very good (4); Good (3); Fair (2).



between participant and faculty-rated final ILR scores were not significant which suggests an alignment between participant self-assessed and faculty-rated final ILR scores. The alignment in scores may also reflect a more accurate self-appraisal and a heightened awareness of proficiency levels in the participants as they rated themselves a second time with the ILR scale following course completion. Therefore, it is noteworthy to underscore the usefulness of the ILR scale as a valid and reliable tool to measure language proficiency levels. The lack of significant results noted between participant mid- and end-point evaluation scores could be due to more than half of our sample having prior knowledge of the Spanish language including some knowledge of medical Spanish before beginning the course. Significant differences between participant baseline self-assessed ILR scores and final self-assessed ILR scores indicates an improvement in self-assessed medical Spanish language proficiency. These results support the third hypothesis and reveal a large effect size of 0.91. The large effect size noted between the participants' baseline and final self-assessed ILR scores supports the practical importance of providing medical Spanish instruction to BSN students prior to entering the workforce. Finally, the fact that 20% of participants stated they would wait for an interpreter at course completion compared to 50% prior to starting the course may reflect participants' increased awareness about their translation ability by the end of the course (refer to [Table 3](#)).

Studies in other healthcare disciplines support our findings. Lie et al. (2018) found a high correlation between physician assistant students' (N = 58) final self-assessed ILR scores and expert faculty final ILR scores ( $r = 0.67$ ) after completing a medical Spanish course, especially

VARIABLE	N	PERCENT (%)
Pre-instruction: Wait ≥ 15 minutes for Interpreter	5	50
Post-instruction: Wait ≥ 15 minutes for interpreter	2	20
Post-instruction: Increased ability to communicate in Spanish Yes	10	100

**Table 3** Participant Interpreter use Pre/Post Instruction (N = 10).

in high proficiency students, supporting the usefulness of the ILR scale. Ortega et al. (2017) (N = 58) found significantly higher comfort levels in 4th year medical students when working with Spanish speaking patients ( $p < 0.05$ ) following a 10-week medical Spanish course and higher faculty-rated proficiency levels compared to students' pre-course self-assessment of language proficiency ( $p < 0.001$ ). These findings correlate with our findings where a statistically significant difference between participant baseline self-assessed ILR scores and faculty-rated final ILR scores ( $Z = -2.460$ ,  $p = .014$ ) was observed after participants completed the medical Spanish course. In another study without a medical Spanish course, Lion et al. (2013) compared self-assessment of Spanish language proficiency in pediatric residents (N = 78) against actual proficiency measured with an objective telephone assessment of general Spanish language skills. In the residents that self-rated proficiency in Spanish, all expressed comfort using it in simple patient scenarios, and the majority expressed comfort using it in complex patient scenarios. However, in these participants only 54% were found to be proficient after being tested, therefore self-rated proficiency did not align with the objective telephone assessment. In our study, there was no significant difference between participant self-assessed final ILR and faculty-rated final ILR scores after the course.

Multiple researchers (Ortega, 2018; Lie et al., 2018; Lion et al., 2013) have recommended combining a self-assessment of language proficiency with objective measures when attempting to define proficiency. Moreover, medical Spanish courses taken without an objective evaluation of post-course proficiency may contribute to providers translating without being proficient in the preferred language, posing risks to Hispanic/Latino patients that have LEP. Recommended baseline proficiency levels for healthcare providers translating in the clinical setting have been determined to be equivalent to a level 3 (general professional proficiency) or higher on the ILR scale (ILR, 2021).



For levels under 3, a certified licensed interpreter is necessary to ensure accuracy of the translation (Diamond & Reuland, 2009).

Medical Spanish language proficiency can be enhanced in nursing students before entering the workforce through didactic instruction offered as an elective in the nursing curricula (Hull, 2016). The authors of this paper believe that a high level of participant engagement coupled with repetitive practice throughout the online sessions contributed to active learning during the course. Thus, we assert that medical Spanish instruction for pre-licensure nursing students offered in a BSN nursing program is clinically relevant to improve medical Spanish language proficiency.

## **LIMITATIONS**

Several limitations were noted in this study. A small sample garnered from one urban BSN program in the United States generated findings that may not be generalizable to BSN nursing students in other geographical areas. Additionally, objective faculty-rated proficiency scores of participants at baseline were not collected to verify participants' baseline self-assessed proficiency compared to their final self-assessed proficiency. Finally, participants' ability to practice medical Spanish in an actual clinical setting was not observed.

## **FUTURE RESEARCH**

Recommendations for future research include performing a baseline Spanish language proficiency faculty assessment on those expressing interest in taking the course (Ortega et al., 2017). Extending this type of study to graduate level nursing students as well as other nurses would be beneficial since these individuals are often providing direct patient care. Additionally, using the ILR scale with greater precision in skill levels (e.g., 2, 2+, 3, 3+, 4, 4+, 5) ranging from limited working proficiency to functionally native proficiency, respectively, instead of the standard ILR scale (none, basic fair, good, very good, excellent) is advisable since improvement in language proficiency often occurs in small increments considering the short duration of these courses (ILR, 2021). Further research is needed to determine the feasibility of medical Spanish courses offered in nursing schools to help divert potential errors or miscommunication in the clinical setting.

## **CONCLUSION**

In this study we found that participants' self-assessed ILR scores at the end of the course aligned with objective faculty-rated final ILR scores, suggesting a more accurate participant self-assessment at course completion. Since nurses may over-estimate their actual proficiency, an objective assessment of proficiency is ideal for achieving optimal outcomes. An objective assessment of medical Spanish language proficiency may increase providers' awareness of translation ability. As nursing students graduate from their respective nursing programs and enter the healthcare workforce, they will undoubtedly encounter situations with patients and families where language barriers exist and translation to the preferred language is required. Recommended baseline proficiency levels for healthcare providers translating in the clinical setting has been determined to be equivalent to a level 3 (general professional proficiency) or higher on the ILR scale; for levels under 3, a certified licensed interpreter is necessary to ensure accuracy of the translation. Although collaboration with a professional telephone medical Spanish translator is considered standard practice when communicating with Spanish speaking patients with LEP in the clinical setting, this method is not always utilized by healthcare providers and has limitations when considering non-verbal communication and patient satisfaction. Medical Spanish language proficiency can be enhanced in Spanish speaking nursing students with fair or better Spanish speaking ability before entering the workforce through didactic instruction offered in the nursing curricula.

Data are available upon request.

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## COMPETING INTERESTS

The authors have no competing interests to declare.

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