The Impact of a Student-Taught Course in Spanish Language Interpreting on Patient Care at a Student-Run Free Clinic

Julie Highland, MD[1]; Belinda Enriquez, MS[2]; Steven R Lowenstein, MD, MPH[3]

[1]University of Utah School of Medicine, Salt Lake City, Utah, USA
[2]University of Colorado Anschutz Medical Campus, Aurora, Colorado, USA
[3]University of Colorado School of Medicine, Aurora, Colorado, USA

Corresponding Author: Julie Highland, MD; email: julie.highland@hsc.utah.edu

Abstract

Background: The DAWN Clinic is a student-run free clinic (SRFC) that provides healthcare to Spanish-speaking residents of Aurora, Colorado. However, like many SRFCs, DAWN has a shortage of trained bilingual staff, often relying on "impromptu" interpreters, including family members or untrained staff. In order to improve the quality of care provided to Spanish-speaking patients at this SRFC, we developed an innovative course in Spanish interpreting for health professions students with advanced Spanish language skills but little or no interpreting experience. The 6-week interpreter course, designed by a second-year medical student (a certified Spanish interpreter), adhered to national healthcare interpreting standards and included lectures, interactive workshops, simulations, and clinical experiences with trained interpreters.
Methods: A survey measured learners' confidence across three domains: interpreting skill; Spanish language ability; and knowledge of obstacles faced by Spanish-speaking patients. A second survey, distributed to DAWN Clinic patients over a 2-year period, measured ease of understanding of medical information and patient satisfaction with provider communication. Mean Likert scale scores were compared using ANOVA.
Results: After the course, students reported increased confidence in interpreting skills ($p<0.01$), language ability ($p<0.01$) and understanding obstacles to care ($p<0.01$). Spanish-speaking patients reported high levels of satisfaction and understanding of medical information, with scores equal to those of a comparison group of English-speaking patients and greater than Spanish-speaking patients who declined interpreter services ($p<0.05$).
Conclusions: This student-taught course enabled health professions students with advanced Spanish language skills to improve their ability to interpret and contribute positively to patient care at a SRFC.

Introduction

Hispanic Americans, especially those with limited English proficiency, face numerous challenges related to employment, housing, education and access to health care.[1] When compared with non-Hispanic whites, Hispanic residents have higher rates of maternal and infant mortality, vaccine-preventable diseases, diabetes, hypertension, cancer, mental illnesses, and accidental injuries and violence.[1-3]

In an attempt to address health disparities among Spanish-speaking and other underserved populations, nearly half of allopathic medical schools in the United States provide healthcare services through a student-run free clinic (SRFC).[4] SRFCs, like other safety net clinics, offer essential services to underserved populations, provided by dedicated, interprofessional students and staff. However, SRFCs frequently have limited resources. For example, many clinics do not have trained Spanish or other language

interpreters. Instead, they rely on "impromptu" interpreters, such as family members, or un-trained students or healthcare professionals.[5-7] These impromptu interpreters often have insufficient medical bilingual skills, use informal language, and make interpreting errors.[8-10] It is well-known that many health providers speak some Spanish but often over-estimate their skills, a problem called "false fluency."[11] Patients may also overestimate their English language ability and not request an interpreter when one is needed for safe care.[12] Students and clinicians, who rely on their own Spanish language skills, often obtain incomplete histories, miss screening opportunities, overlook mental illnesses and other high-risk conditions, and under- or over-treat routine medical conditions.[13] Equally important, lack of trained interpreter services discourages patients from keeping routine appointments or seeking care for acute problems.[13] Therefore, trained, proficient interpreters are essential to ensuring safe and high-quality health care, but in understaffed SRFCs and other safety net clinics, interpreters are often in short supply.[5-13]

Training community members, students and clinicians to become volunteer interpreters seems like an obvious remedy. However, most interpreter training programs are designed for those pursuing medical interpretation as a career. Such programs are costly and may require 200 hours to complete, which may not be feasible for student or community volunteers.[10,14] Due to absent national standards for assessing interpreter skills, many healthcare institutions have developed internal interpreter training programs, but these are inconsistent and may not ensure competency.[15,16]

Increasingly, SRFCs are recognized as essential community health resources and training sites for students, but many do not have adequate numbers of certified Spanish language interpreters. In this report, we describe one approach to remedying this problem, through the development of a student-taught elective course in Spanish interpreting for medical and other health professions students. We designed this course with three specific aims. The first was to test the feasibility of a student-taught course to help prepare other students to serve as volunteer interpreters at a SRFC. A second aim was to equip health professions students with the skills needed to obtain interpreter certification and interpret ethically and competently in other clinical settings. The third objective was to test whether a medical Spanish interpreter elective, taught largely in a classroom, can have a positive impact on patient satisfaction in a clinical setting. Our overriding objectives were to increase healthcare access and ensure high quality and culturally appropriate health care to Spanish-speaking patients in Aurora, Colorado, the community surrounding our medical campus.

Methods

Setting

The interprofessional SRFC at the University of Colorado Anschutz Medical Campus, called the DAWN (Dedicated to Aurora's Wellness Needs) Clinic, cares for patients in the Aurora, Colorado area who have limited access to healthcare. Founded in 2014, this clinic serves primarily undocumented immigrants without health insurance who are unable to obtain it due to their legal status; an estimated 60-70% of DAWN Clinic patients speak Spanish as their primary language.[17] The clinic also serves a large number of uninsured or under-insured English-speaking patients, as well as patients from a variety of immigrant and refugee groups who have limited English proficiency.

Program Description

The interpreter training course (Online Appendix) was designed by a second-year medical student (JH) who was certified to interpret at the Denver Health Medical Center and Children's Hospital Colorado according to the standards dictated by each institution. The elective was implemented in 2015 under the supervision of a School of Medicine faculty member who had experience teaching medical Spanish. The 6-week course (one hour each week) included classroom lectures and interactive workshops, as well as clinical shadowing experiences with trained interpreters. The elective was offered to health professions students from the University of Colorado, community members and undergraduate students. Spanish competency was assessed using written and oral examinations; however, motivated

students who did not pass the initial screen were permitted to attend the course if openings were available, but they were still required to pass the final exam before interpreting at the clinic.

The interpreter training course was divided into two phases. The first phase introduced students to medical vocabulary and the practice of clinical interpreting. The didactic lectures and interactive workshops also focused on ethics, etiquette and various challenges commonly encountered during interpreting. The curriculum adhered to the standards established by the National Council on Interpreting in Health Care (NCIHC) and included lessons focusing on: 1) accuracy, which encompasses knowledge of proper terminology in each language as well as skills specific to medical interpreting; 2) interpreter etiquette, including respect, proper behaviors, and how to handle difficult situations; 3) interpreter ethics, including boundaries, confidentiality, impartiality, and advocacy; and 4) professional development, which included hands-on practice in both a simulated and real setting, as well as ongoing mentorship.[14] A simulation was created to enable students to hone their interpreting skills with the participation of native Spanish-speaking volunteer "patients." At the end of phase 1, students took practice written and oral examinations to help prepare them for the final examination as well as for tests they might encounter at larger healthcare institutions. This examination was created by the authors of this study and was based on NCIHC standards and on the examinations used to certify Spanish medical interpreters at the University of Colorado affiliated hospitals.

In phase 2, students practiced their interpreting skills at the DAWN Clinic under the supervision of certified interpreters. After 4-5 practice sessions, they were required to complete both written and oral interpreter certification examinations. Upon passing this examination, students were encouraged to serve as volunteer interpreters at the clinic. Upon passing the certification test, students were also permitted to communicate with Spanish-speaking patients without supervision; they were also permitted to supervise non-certified Spanish-speaking volunteers in direct conversations with Spanish-speaking patients.

Program Evaluation

The evaluation of the interpreter course consisted of two components. First, a survey was designed to measure learners' interpreting confidence. A second survey, distributed to DAWN Clinic patients, measured ease of communication and patients' satisfaction with their interpreters. Both surveys were approved as exempt by the Colorado Multiple Institutional Review Board.

Learner Confidence Survey

To assess the educational value of the course, an electronic interpreting confidence survey was administered to students who completed the 2015 interpreter training course. Learner confidence was measured across four domains: interpreting skills (seven items); history-taking ability (ten items); ability to explain the treatment plan (six items); and knowledge regarding obstacles to care typically faced by Spanish-speaking patients (six items). The survey utilized 4-point Likert-scale responses with answers of "strongly disagree," "disagree," "agree," and "strongly agree." For example, students were asked whether they "agreed" or "disagreed" with the statement, *I feel comfortable with "code switching" and can handle the mental fatigue that comes with switching between English and Spanish*. Concerning communicating a treatment plan, students were asked whether they agreed with the statement, *I could inform my patient in Spanish of risk factors that are causing their illness*. For each student, and for each of the four domains, we calculated a mean agreement score. Mean agreement scores from each phase were compared using repeated-measures ANOVA. Student confidence across all domains was measured at three time points, utilizing the same instrument: before taking the interpretation course (phase 1); between taking the didactic portion and the applied skills portion (phase 2); and after completing the course, including the didactic and applied skills portions (phase 3).

Patient Satisfaction Survey

After permission was obtained, a communication satisfaction survey, adapted from a validated study tool by Bagchi et al, was distributed to a convenience sample of patients seen in the DAWN Clinic.[18] Each survey included a cover letter

with an invitation to participate and an explanation of benefits and risks. Surveys and cover letters were available in Spanish and English. The survey included demographic information, the reason for the patient's visit, primary language spoken at home and the type of interpreter services received. In addition to the clinical and demographic questions, the survey included Bagchi's two questions addressing patients' satisfaction with communication: *How easy was it for you to understand the things that were explained to you?* And, *How satisfied were you with the way you and the hospital staff were able to communicate?* Ease of understanding and satisfaction with communication were measured using 5-point Likert scales.

The workflow principles of the clinic strongly encouraged each interpreter to remain with a patient throughout the clinic visit, so patients had a comprehensive experience with the interpreter prior to completing the survey. In order to minimize social responsiveness and other forms of bias, a Spanish-competent volunteer who was not involved in interpreting for the primary medical concerns of the patient, administered the surveys at the end of the patient's visit.[19] Patients who had completed the survey during prior visits were excluded. Patients and their interpreters were identified using unique numeric codes.

Measuring the Impact of the Interpreter Course

To assess "success in interpretation," and specifically, to assess whether students trained in this new course were meeting expected standards, the DAWN Clinic patients who completed the patient satisfaction survey were separated into 4 comparison groups: 1) Spanish-speaking patients who worked with interpreters trained by the student-run course (n=17); 2) Spanish-speaking patients who worked with interpreters who did not take the course but who had passed the same or another certification exam (n=30); 3) patients who spoke English as their primary language and did not use an interpreter (n=10); and 4) Spanish-speaking patients with limited English proficiency who did not use an interpreter or used a family member to interpret (n=5).

Mean scores for each of the questions (ease of understanding and satisfaction with communication) were calculated and compared across the 4 comparison groups using one-way ANOVA; to identify significant differences, a post-hoc Tukey honest significant difference (HSD) test was used (Navendu Vasavada Software, 2016).

Results

Student Enrollment

Initially, 16 students enrolled in the interpreter training course; of these, 14 (88%) participated in the Phase 1 survey. All students spoke at an advanced level, as determined by a screening exam; however, none of them had prior medical interpreting experience or training. These students included six first- or second-year medical students (43% of the 14 students), five first-year nursing students (36%), two first- or second-year Physical Therapy Doctoral students (14%) and one Master of Public Health student (7%). Two nursing students did not complete the course because of scheduling conflicts. Of 11 students who completed Phase 2, 10 completed the Phase 2 survey (participation rate 91%). Between phase 2 and phase 3, one student dropped the course because of an inability to pass the interpreter certification exam. Of the remaining 10 students, seven completed the Phase 3 survey (70%).

Improvements in Confidence Among Students

Students reported significantly increased confidence in both interpreting and Spanish language skills after completing the course. Students reported significantly increased confidence in phases 2 and 3 as compared with phase 1 for all three content areas, as measured by cumulative (summed) Likert scale scores. There was also a significant increase in confidence between phases 2 and 3 for general Spanish language ability (Figures 1-3).

Patient Ease of Understanding and Satisfaction with Communication

Between August 2016 and August 2017, a convenience sample of 62 unique patients completed surveys. Table 1 summarizes the demographic and health-related characteristics of these patients. The majority of survey participants spoke Spanish and reported an education level of high school or less. The three most common chief complaints upon presentation were
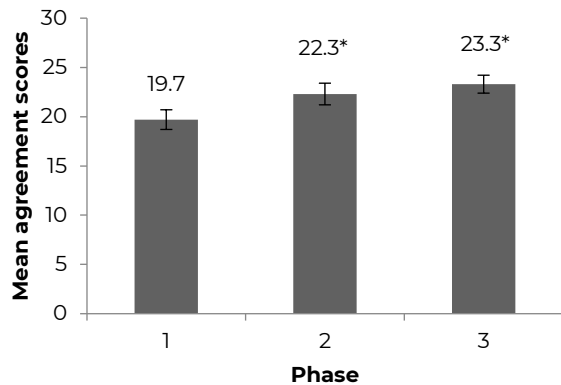
Figure 1. Interpretation Skills

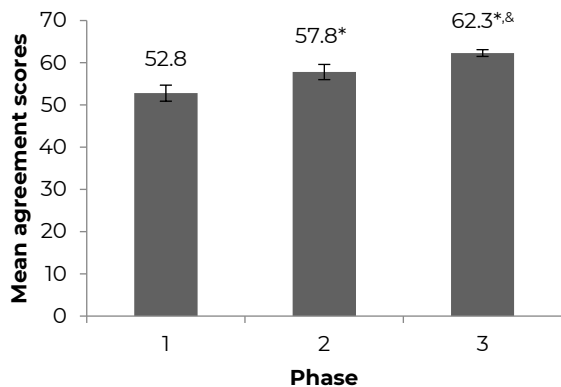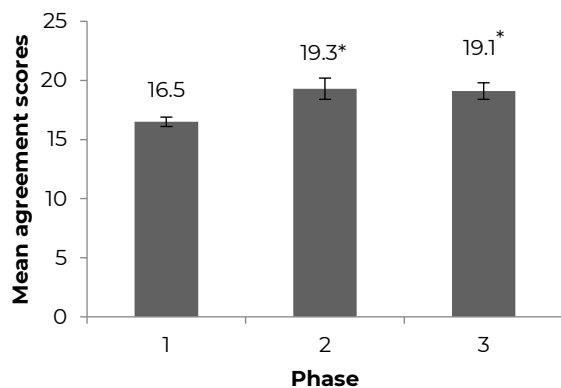***Figure 2.*** General Language Skills

Figure 3. Understanding of Obstacles

Figures 1-3: Results of student interpreter confidence surveys in the three major content areas of the course compared between phases 1, 2 and 3.
*p<0.05 when compared with phase 1
&p<0.05 when compared with phase 2

musculoskeletal conditions, ear, nose, and throat complaints, and presenting for a general checkup.

As shown in Figures 4 and 5, Spanish-speaking patients served by newly-trained student interpreters reported high levels of satisfaction in their understanding of medical information and communication with their providers. When asked about "ease of understanding," these patient groups had an average score of at least 4.75 (out of 5), with no statistical differences among the two interpreter groups or the English-speaking group (Figure 4). However, there was a small group of patients with limited English proficiency (LEP) (n=5) who either declined an interpreter (n=4) or who relied upon a family member to interpret (n=1); the average rating of ease for communication in this group was significantly lower (3.75) when compared with all other test groups, including students trained in the course (p<0.01).

Communication satisfaction was also rated highly across all patient groups (all ratings ≥4.9), with no statistical differences among groups (Figure 5).

Discussion

We designed and implemented a concentrated, student-run medical Spanish interpreter course, in an effort to train medical and other health professions students to serve as volunteer interpreters at a student-run free clinic. After completing the course, students reported significantly increased confidence in both interpreting and Spanish language skills. Confidence improved across a range of critical areas, including interpreting skills, history-taking, explaining treatment plans, and knowledge regarding obstacles and barriers to care faced by Spanish-speaking patients.

In addition, our preliminary data suggest that the elective course, even though taught largely in a classroom setting, had a positive impact on patient care. Spanish-speaking patients served by the newly-trained student interpreters reported high levels of satisfaction in their understanding of medical information, with scores equal to those of English-speaking patients and higher than LEP patients who declined interpreter services. Thus, this new elective course enabled

Table 1. Demographic and clinical characteristics of patients who completed the interpreter satisfaction survey

Primary Language (N=62)	N (%)	
Spanish	49 (79)	
English	10 (16)	
Other	3 (5)	
Level of Education (N=58)	**N (%)**	
None/No schooling	2 (3)	
Grades 1-8	19 (33)	
Grades 9-11	20 (34)	
Grade 12 or GED	7 (12)	
1-3 years of college	8 (14)	
4+ years of college	2 (3)	
Medical Characteristics (N=62)	**Chief Complaint, N (%)***	**Prevalence of Chronic Medical Conditions, N (%)***
General checkup	10 (16)	—
Diabetes	5 (8)	13 (21)
Hypertension	7 (11)	27 (44)
Hyperlipidemia	1 (2)	10 (16)
Musculoskeletal condition	15 (24)	5 (8)
Ear, nose and throat condition	13 (21)	0 (0)
Psychiatric condition	2 (3)	13 (21)
Dental condition	6 (10)	6 (10)
Infectious condition	4 (6)	0 (0)
Other	13 (21)	11 (18)

GED: general education diploma
*Patients were permitted to check more than one condition; percentages may total to >100%
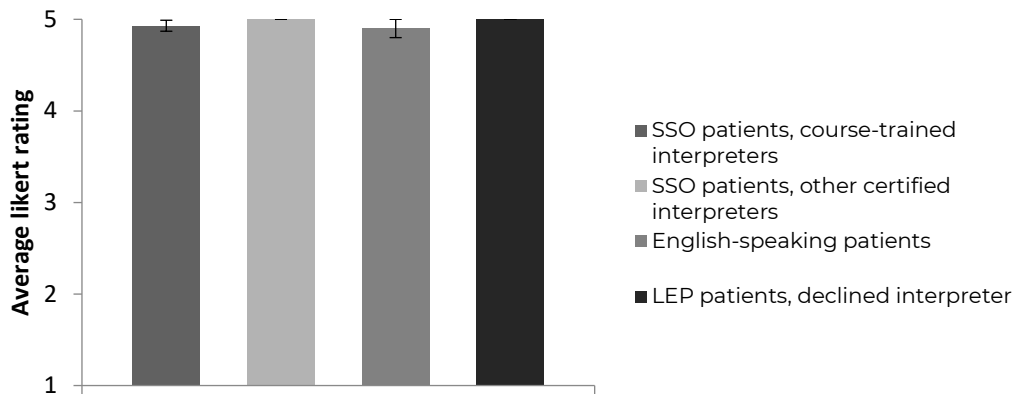
Figure 4. Ease of Understanding
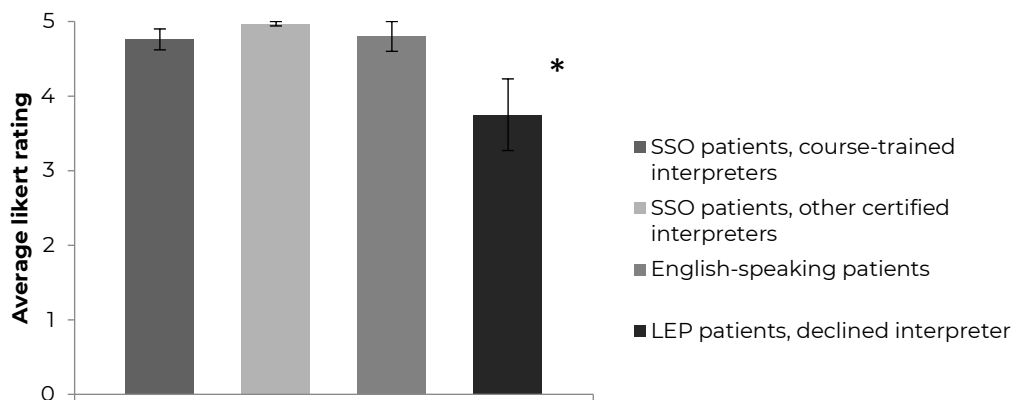
Results of interpreter satisfaction survey question, How easy was it to understand the things that were explained to you?
SSO = Spanish-speaking only; LEP = Limited English Proficiency.
*p<0.01 when compared with groups 1, 2, and 3 using Tukey honest significant difference test

Figure 5. Satisfaction with Communication

Results of interpreter satisfaction survey question, How satisfied are you with your ability to communicate with your provider? SSO = Spanish-speaking only; LEP = Limited English Proficiency.

students with advanced Spanish proficiency to improve their ability to interpret and contribute positively to patient care at a SRFC. This course may serve as a model for training students to volunteer as interpreters at SRFCs and other safety-net clinics where professional interpreters are in short supply.

One interesting finding was that there was no difference in either ease of understanding or satisfaction with communication between patients assisted by interpreters who did and did not take the training course. It is possible that a self-selection process occurred, in which students less confident in their language skills elected to take the course, while those confident in their skills passed the certification exam without taking the course. If this is the case, however, it suggests that students who have advanced Spanish language skills but who have no prior training in medical interpretation can, through this course, gain skills equal to those with prior training and experience. Importantly, these results also suggest that the student-taught interpreting course is "non-inferior" to other certification courses and programs that may be more costly and time-consuming and less accessible to SRFCs.

This study has several important strengths, including the use of a variety of comparison groups that allowed us to measure patients' perspectives. The authors also recognize the study's limitations. First, the course evaluation is limited by a relatively small number of students, all of whom

had relatively advanced Spanish language skills. Second, while we demonstrated improvements in confidence across several domains of interpreter skills and required all students to pass the proficiency certification test that was created for this program before volunteering at the DAWN Clinic, we did not measure interpreting accuracy during the clinical encounters. Third, all patients were seen in an ambulatory, non-emergent setting, so these findings may not be applicable to other clinical settings. Implementation of this program may also be more challenging in clinics where certified student interpreters are not available to oversee and teach the course.

Our conclusions are also limited by the small number of patients who participated in the communication satisfaction survey and by the convenience sampling method we employed. It is possible that patients who did not participate in the evaluation differ from our sample with respect to demographic and clinical attributes, language ability, health literacy or other characteristics. Furthermore, it is possible that social responsiveness bias played a role in the high satisfaction rate reported by patients,[20] since the interpreters were often still in the clinic when the patients completed the survey. It is also possible that this high rate of satisfaction reflected more than language skills alone and likely involved other personal interactions patients had with the interpreters and clinicians.[20] Indeed, the varying communication skills of the providers could have

served as a confounding variable in our analysis. Finally, while we reported high levels of patient satisfaction with ease of communication and understanding of medical information, we did not interview the patients to verify their understanding of the medical information provided. We also did not collect data regarding diagnostic accuracy or healthcare outcomes.

In addition to the limitations summarized above, it is important to acknowledge the ethical concerns around using non-professional Spanish medical interpreters in both low- and high-resource healthcare facilities. For example, is a short, concentrated course, created and led by students, sufficient to certify that other students are equipped to interpret in a clinical setting? Given that healthcare providers often overestimate their Spanish language abilities (false fluency),[11] there is a need to ensure that physicians and other providers have the appropriate skills for effective communication, a prerequisite for high quality and safe patient care.[21] On the other hand, the LEP patients in this study who elected not to use a volunteer interpreter rated ease of understanding significantly lower than those who used an interpreter, whether formally trained as interpreters (through the DAWN course or elsewhere) or not. This finding is consistent with a recent study by Zun, which revealed a discrepancy between the level of English competency and the perceived English competency of Spanish-speaking patients.[12] Patients have the legal right to decline interpretation services, but this finding, like the current study, suggests that having a trained, but non-professionally-certified medical interpreter is superior to having no interpreter at all.

Implications and Future Research Priorities

This student-taught course in medical Spanish interpreting may serve as a model for training volunteer interpreters, helping to improve access to high quality healthcare for Spanish-speaking patients. Additional studies are needed to determine whether this curriculum can be implemented at other SRFCs and other safety net clinics, including those in rural locales, where certified student interpreters are not available to design and teach the course.

Also, additional studies should focus on interpreter effectiveness, including interviews with patients to verify their understanding of the medical information provided, as well as direct observation of interpreting skills and communication accuracy during actual clinical encounters. In addition, enhancements to future curricula may include an expanded focus on patients' health literacy, culture-bound syndromes, barriers to care faced by patients with limited English proficiency, and other interpreting skills, ideally based on continuing feedback provided by students, Spanish-speaking patients, SRFC staff, and the NCIHC and other experts.

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