



# A Case Study of the Impact of Language Concordance on Patient Care, Satisfaction, and Comfort with Sharing Sensitive Information During Medical Care

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Accepted: 10 February 2023

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## Abstract

Linguistic barriers continue to be a source of difficulty and inappropriate treatment in our healthcare system. Several studies have shown the importance of language concordance, which leads to increased trust and higher patient satisfaction. The aim of this study is to determine patients' satisfaction and comfort levels with sharing sensitive information in Spanish with either the health care provider or an interpreter, respectively, and to compare the results to find out if there is an option that patients prefer. There were two different groups of participants in the study. The experimental group was directly seen by Spanish-speaking student doctors while the control group was seen by English-speaking student doctors that had the aid of an interpreter. Several questions were asked to participants via survey in order to measure their comfort levels during the encounter. The results of this study demonstrate that having Spanish-speaking healthcare providers providing health care to Hispanic patients can raise patients' comfort levels and satisfaction in contrast to having the aid of an interpreter. Providing second language training to student doctors can potentially improve patient care and reduce health inequities facing LEP patients. Given the small sample size of our study, future projects should expand the study to include more participants.

**Keywords** Medical Spanish · Hispanic patients · Language concordance · Patient satisfaction · Patient care

## Background

With demographics changing in the United States (U.S.), it has become increasingly important for physicians to be able to speak languages other than English. An estimated 66 million people over the age of five in the U.S. speak a language other than English at home, of which 38.3% speak English less than very well [1]. The language barrier is a common concern that non-English speaking patients face when seeking medical care. The small proportion of Spanish-speaking physicians in the U.S. has resulted in a deficit of healthcare providers able to effectively communicate with and provide care to the Spanish-speaking patient population. Spanish is the language most frequently spoken at home other than English in the U.S., with an estimated 40 million people who use Spanish as their first language [1]. Furthermore,

the Hispanic population continues to grow in the U.S. and outpaced the growth of the white and Black populations between 2015 and 2019 [2]. Given this deficit, it is important to evaluate the necessity for Spanish language skills when providing medical care to Spanish-speaking patients and its impact on patient outcomes and experience.

## Literature Review

Research has shown that language barriers are associated with lower quality of health care and poorer health outcomes. In fact, patient dissatisfaction and adverse events have been shown to be more prevalent among limited English proficiency (LEP) patients than English-speaking patients. Correlations exist between patient-reported adverse effects from medications and English proficiency, with LEP patients reporting higher incidences of drug complications [3]. Additionally, LEP patients are more likely to underutilize drugs than English-speaking patients [4]. Karliner et al. examined whether patients' primary spoken language affected their hospital outcomes [5]. They found that while

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all the patients had a statistically similar total cost of care, length of stay, and odds for mortality, the non-English speakers, particularly the Spanish speakers, had a higher risk for readmission [5].

One method of overcoming language barriers between physicians and patients is providing language-concordant care. Language-concordant care is defined as care in which patients and physicians speak the same language. Language concordance between physicians and LEP patients has been shown to improve patient care by reducing the likelihood that LEP patients misunderstand a medical situation, medical labels, or adverse effects of medication [6]. In the treatment of Hispanic patients in rural areas, language concordance has been shown to improve the care of Hispanic patients and increase patient participation in treatment plans for diabetic foot care [7]. Similarly, Hispanics who received care from language-concordant physicians achieved greater glycemic control, than Hispanics who received language-discordant care for diabetes [8].

In addition to improving language concordance, providing interpretation services at hospitals can potentially improve care for LEP patients. Although language-concordant care may be superior to medical interpreter services, many patients lack access to a physician who speaks their native language. Providing professional interpreters can improve the degree of health education received by patients [9]. In addition to improving care, interpreters can increase access to and delivery of care to LEP patients [10]. Using professional interpreters does not substitute for language-concordant care, however. Interpreters do not improve patient ratings of interpersonal care. In fact, physicians who use professional interpreters may receive worse ratings from their patients [9]. Other issues involved with using interpreters include accessibility, availability, convenience, and patient privacy [11]. Additionally, the type of interpreter used can impact the quality of care delivered to patients. Professional interpreters are significantly less likely to commit meaningful medical errors than ad hoc interpreters. Moreover, the number of errors committed by professional interpreters is inversely correlated to the amount of training received by interpreters [12].

In the post-pandemic era, providing telehealth to LEP patients is critically important. Before the pandemic, LEP patients utilized telehealth at lower rates than English-speaking patients, suggesting that the pandemic could have exacerbated disparities in healthcare for LEP patients. In fact, during the COVID-19 pandemic, Spanish-speaking patients were among the least likely to utilize telehealth and video visits in the United States [13, 14]. This could be because telehealth exacerbated the difficulties that Hispanic patients already faced when communicating with their providers. Providing future physicians with linguistic and cultural tools to properly serve Hispanic patients is paramount in many

areas of the nation. Improving access to high-quality medical Spanish education is an important strategy to prepare student doctors to properly care for vulnerable communities, such as the Hispanic patient population, during the post-pandemic era and beyond [15].

Something as small as having the opportunity to take a Spanish elective course in a medical school can be beneficial in raising patient satisfaction within the Hispanic patient population. In turn, this can lead to increased patient-physician interactions with an overall rise in the quality of care [16]. Many medical schools offer medical Spanish education to teach patient-physician communication skills. However, Medical Spanish courses that lack basic standards of curricular structure may lead to overconfident physicians that lack the necessary Spanish-speaking skills to serve Hispanic patients, inadvertently exacerbating communication problems with linguistic minority patients [17].

Rather than studying the impact of using interpreter services, Fernandez et al. assessed how having Spanish-speaking physicians affected patient experiences [18]. Similar to how the use of interpreters was associated with improved health outcomes, physician Spanish fluency was found to be strongly associated with better patient experience during patient-physician interaction [18]. This study and other similar studies demonstrate how using interpretation services or having Spanish-speaking physicians addressed patients' language barriers and improved their quality of healthcare. Despite evidence suggesting that trained interpreters are superior to ad hoc interpreters, prior studies suggest that as little as one in four hospitals require interpreters to have experience or training in clinical interpretation [19]. Community health centers generally do not provide professional interpreter services and often do not require their volunteers to be certified in medical interpreting before serving as interpreters [20].

Given the prevalence of volunteer and ad hoc interpreter use in many clinical settings where professional interpreters are unavailable, LEP patients may be at risk for medical error and diminished quality of care. A potential solution to improve the quality of care for LEP patients is to provide training to volunteer interpreters. Reports suggest that training volunteer interpreters can potentially improve the skill, knowledge, and confidence of ad hoc interpreters [20]. Other studies sought to examine if addressing these language barriers improved patients' healthcare experience and outcomes. In one study, Jacobs et al. examined the effects of using professional interpretation services on the quality of health care in a non-hospital setting [21]. Their results showed that limited English proficient patients who used interpreter services had significant increases in recommended preventive services, office visits, and prescriptions, which suggests an improvement in these patients' healthcare access and experience [21].

Even though having professional interpretation services has proven to be very beneficial for non-Spanish-speaking patients, there is evidence that having a Spanish-speaking physician or medical team may lead to greater patient satisfaction and experience than using interpreter services. Spanish-speaking Hispanic patients report being more dissatisfied with their care than white or English-speaking Hispanic patients. In addition, LEP Spanish-speaking patients are more likely to report problems with physicians listening to what they have to say, dissatisfaction with physician responses to their questions, and discontent with reassurance and support from their physician [22]. Language barriers also extend to pediatric care, often burdening LEP parents. LEP Spanish-speaking caregivers are more likely to change jobs should their child be diagnosed with cancer, are more likely to report delays in their child's education as a result of medical treatment, and are more likely to report feeling that they could have received better care if their primary language were English [23]. In the context of emergency department visits, LEP patients are more likely to report being dissatisfied with their care than English-speaking patients [24]. Similarly, LEP patients are more likely to report unwillingness to return to the same emergency department for future visits [24]. Research has also indicated that the availability of Spanish-speaking physicians in clinical settings may reduce hospital costs in addition to increasing patient satisfaction [21,25]. In short, research has demonstrated that language concordance improves health outcomes for LEP patients.

A recent study by Seible et al. tested the effect of receiving care from Spanish-speaking physicians on patient satisfaction compared to receiving care through professional interpretation services [26]. Adult Spanish-speaking patients with cancer were randomly assigned to either receive care from Spanish-speaking physicians or English-speaking physicians using professional interpreters, and patient satisfaction was assessed through questionnaires. The study found that the patients receiving care from Spanish-speaking physicians self-reported significantly higher general patient satisfaction compared to patients receiving care through interpreter services [26]. Specifically, higher scores for the technical quality of care, care team interpersonal manner, physician communication, and time spent with patients were given by those being cared for by Spanish-speaking physicians [26].

A study by Fernandez et al. observed the effect of receiving care from Spanish-speaking providers on measurable health outcomes, looking at effects on glycemic, LDL, and systolic blood pressure control [8]. Using low-English proficient Spanish-speaking patients from the Kaiser Permanente Northern California Diabetes Registry, the study divided patients into two groups: those who switched from a Spanish-speaking provider to an English-speaking provider

using interpreter services, and those who switched from an English-speaking provider to a Spanish-speaking provider. They observed changes in the patient's glycated hemoglobin, low-density lipoprotein, and systolic blood pressure values in these two groups pre- and post-switch. The study showed that the diabetes patients who switched from an English-speaking to a Spanish-speaking physician experienced a significant improvement in glycemic control, while those who switched from Spanish-speaking to English-speaking did not experience a significant change in glycemic control [8]. However, there was no significant change in systolic blood pressure control, and both groups experienced an improvement in LDL control [8]. Both aforementioned studies suggest the benefit of having direct Spanish-speaking skills over using interpretation services.

The reasons for greater patient satisfaction and improved health outcomes for LEP patients receiving language-concordant care are likely multifactorial. A potential explanation for improved patient satisfaction can be derived from psycholinguistic theories of first language (L1) and second language (L2) use. Emotions are more easily and quickly identified in L1 rather than L2 [27]. Similarly, emotional connections to words are often more deeply encoded in L1 than in L2, especially when L2 was acquired later in life [28, 29]. The bigger ties between L1 and emotion potentially intimate that language-concordant care allows physicians to more readily connect with their patients emotionally, thereby enhancing perceived care by the patient. In addition to an increased ability to identify emotion in L1, many patients also experience anxiety when using L2 to access healthcare, potentially leading to discomfort and reluctance to communicate [30]. Accordingly, language-concordant care could potentially improve patient satisfaction with care by reducing anxiety about having to communicate in L2.

A study conducted by Mazor et al. examined the effect of teaching medical Spanish to pediatric emergency department physicians on patient satisfaction for Spanish-speaking-only patients [31]. In the study, nine physicians were taught 10 weeks of medical Spanish and their Spanish abilities were evaluated through mock clinical scenarios and tests. Before and after the Spanish course, Spanish-speaking patients cared for by these physicians completed satisfaction questionnaires. The study found that implementation of a 10-week medical Spanish course for pediatric ED physicians was associated with decreased use of interpreters and increased satisfaction [31]. Patients were more likely to strongly agree with statements such as "the physician was concerned about my child" and "the physician made me feel comfortable" [31]. Studies like this demonstrate the potential benefits of teaching Spanish to physicians. However, taking a medical Spanish course, especially a short one, does not mean that healthcare providers are ready to assist patients in Spanish. Program designers must be not only well-prepared

to create a coherent program but should also be very familiar with the audience and health communication needs [32]. In fact, at the undergraduate level, instructors should focus on, ideally, offering community service-learning opportunities by focusing on oral and aural skills [33]. Student doctors can then build on this skill level to tailor courses to their more specialized needs [32].

All in all, there is a lack of literature examining how to teach medical Spanish to student doctors exactly and how teaching Spanish to student doctors can impact patient satisfaction rather than having the services of an interpreter. Accordingly, it is necessary to present an effective model to teach Spanish to healthcare professionals and subsequently conduct a study that includes a control group, Hispanic patients receiving medical attention in Spanish through the aid of an interpreter, and an experimental group, Hispanic patients receiving attention in Spanish from their health provider (a student doctor). Both groups should be asked the same survey questions and their respective answers can be compared and analyzed.

## Methods

The medical Spanish instruction took place on the campus of California University of Science and Medicine (CUSM) from December 2021 through December 2022, with a total of 9 months of in-class instruction when the first group of participants provided their answers and 12 months of in-class instruction when the second group of participants provided their answers. Student doctors completed a semester course titled ‘Spanish for Healthcare Professionals I’ and another semester course titled ‘Spanish for Healthcare Professionals II’.

The program was designed as a dual model, whereby instructor-led sessions were supplemented by peer-tutor sessions every week. The instructor-led lessons, which were conducted by a native Spanish-speaker with a Ph.D. in second language teaching, consisted of a total of at least 30 lessons revolving around medical Spanish grammar and vocabulary. The focus of the weekly sessions was on the oral communicative use of language in medical contexts. Each week, students attended a 1-h in-class session where the instructor introduced the Spanish version of the clinical skills topic that student doctors had learned the prior week. Through that topic introduction, students were presented with grammatical structures pertinent to that topic. As an example, one of the contents of the reproductive block was ‘scrotal swelling’. This content led to the incidental instruction of Spanish reflexive verbs such as *hincharse* or *inflamarse*. In the sessions, students were deliberately placed in teams. Each team of three students also had a Spanish

standardized patient assigned to practice the target clinical topic at the end of the instruction.

After the instructor-led session, student doctors also received Spanish instruction through peer tutors. Peer tutors were Spanish-proficient student doctors who were hired by the university to teach their classmates each week and complement the instructor-led sessions. To assure equitable delivery of content from tutors to groups, periodical meetings were held with tutors. These meetings included a discussion of the delivery of content, the strengths and weaknesses of each group, and other related topics. The total amount of medical Spanish instruction that students received was between 60 and 70 h.

The medical Spanish curriculum implemented at CUSM is unique in that it runs parallel to the clinical skills curriculum. Hence, students learn the material in English first, and then learn the same material in Spanish with an incidental focus on grammar. Furthermore, student doctors were also provided with weekly medical Spanish materials and methods of assessment (*Powerpoint* presentations, *Canvas* quizzes, and medical checklists) created by the course instructor and the peer tutors. Finally, students also had access to an asynchronous basic Spanish course, created by the instructor, that students could complete at their own pace.

## Participants

The participants of this study were recruited from the Inland Empire Free Clinic in California. This clinic is a nonprofit organization with the mission of providing medical care to the underprivileged. The average number of patients that attend the clinic every month is 15. The patient population of this free clinic mostly has a Hispanic background. Patients were invited to participate in the study after being seen by the student doctors in the clinic. The medical Spanish program Director and Instructor conducted these interviews. There was no rationale for limiting the number of patients who could participate in the study. Participants were recruited during four different shifts in the clinic in the second half of 2022. The inclusion criteria for participants had to do with their preferred language of communication. Patients whose preferred language of communication was English were excluded from the study. Ethics approval was obtained before recruitment began, IRB Protocol Application #: HS-2022–11 determined that it was exempt on June 8th, 2022.

The total of participants in this study was 25 patients over the age of 18. 18 participants belonged to the experimental group, whereas 7 participants belonged to the control group. The demographic information of the present study was obtained via survey. Appendix A shows the questions that both groups, experimental and control, had to answer before participating in the study. 19 of these participants

were female and 4 were male. The median age of the participants was 36 years old, and all of them considered Spanish to be their first and preferred language. All of the participants were born in a Spanish-speaking country and had lived in California for, at least, 4 months. 20 of them considered themselves LEP, and the other 3 expressed that, even though they could speak some English, they preferred to use Spanish with their healthcare provider.

In addition, 18 student doctors who had, at least high-intermediate Spanish oral proficiency (ACTFL) were also part of this study either as the main health provider or as interpreters. Their proficiency level was assessed by a Spanish Objective Structured Clinical Examination (OSCE) and a Multiple Choice Test (MCT). Appendix B shows the checklist used to evaluate their Spanish proficiency in the OSCE. Appendix C shows the questions included in the MCT.

## Materials

The primary outcome measures for this study were the participants' satisfaction and comfort levels with receiving medical attention in Spanish from either student doctors or interpreters. The survey was created by taking into consideration the Consumer Assessment of Healthcare Providers and Systems (CAHPS) program [34].

## Procedure

In this study, several questions were asked to participants via survey in order to measure their comfort levels. The experimental group was directly seen by Spanish-speaking student doctors while the control group was seen by English-speaking student doctors that had the aid of an interpreter. All participants were assured confidentiality and informed that the survey would include questions about their experience with receiving medical attention in Spanish during their time at the free clinic. The participants gave oral informed consent before starting the survey.

The oral survey was administered in Spanish by a Spanish-speaking investigator after the participants finished their medical encounter at the clinic. The conversation was not recorded, but it was transcribed by the administrator as it happened. The questions included in the survey were the following ones (Appendix A includes the actual questions that were asked in Spanish):

For the experimental group:

1. How do you rate the level of attention received today by your assigned student doctor (1 being terrible and 10 being excellent)?
2. How comfortable did you feel speaking Spanish with the student doctor on a scale from 1 to 10 (1 being terrible and 10 being excellent)?

3. Do you think that you received better medical attention because you spoke in Spanish with your assigned student doctor rather than with an interpreter?
4. Did you talk about a sensitive topic with your assigned student doctor in Spanish? If so, how comfortable did you feel during that conversation (1 being minimum comfort level and 10 being maximum comfort level)?
5. What characteristics of Spanish-speaking student doctors do you feel that are the most important ones to have?

For the control group:

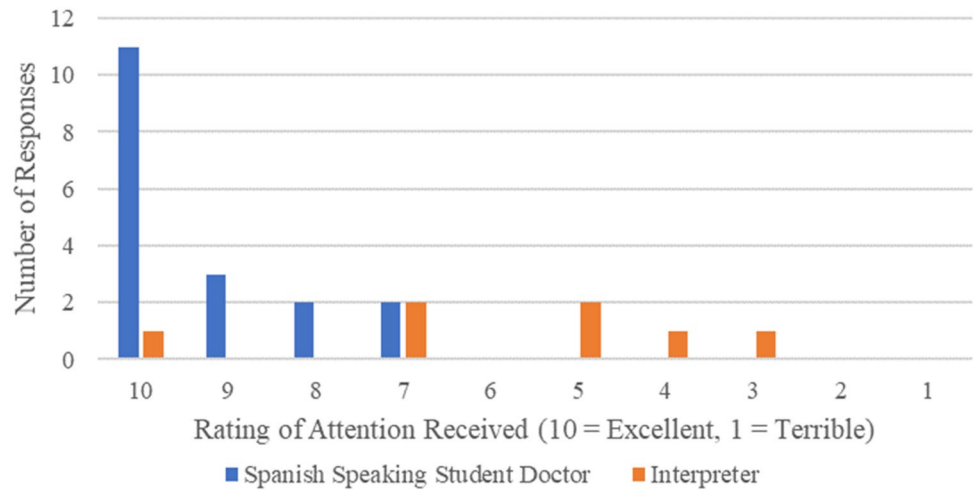
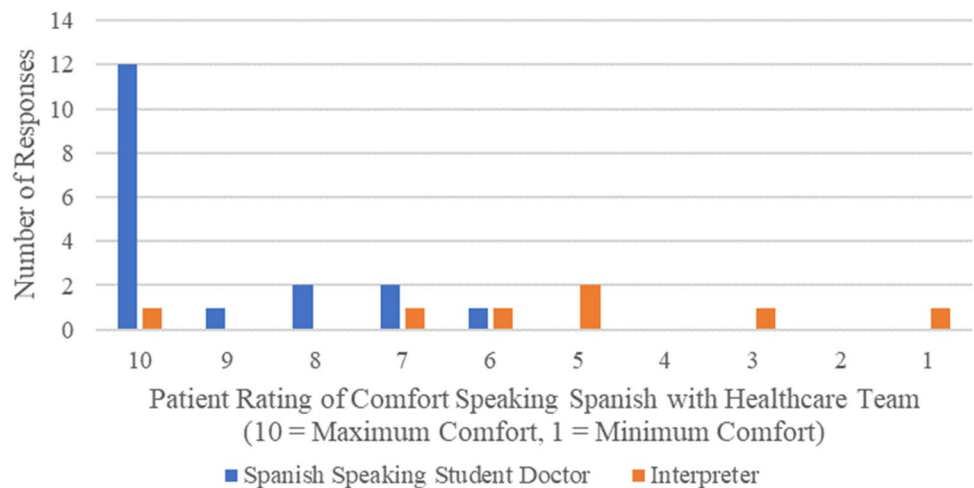
1. How do you rate the level of attention received today by your assigned interpreter in Spanish (1 being terrible and 10 being excellent)?
2. How comfortable did you feel speaking Spanish with the interpreter on a scale from 1 to 10 (1 being terrible and 10 being excellent)?
3. Do you think that you received better medical attention because you spoke in Spanish with your assigned interpreter rather than with a student doctor?
4. Did you talk about a sensitive topic with your assigned interpreter? If so, how comfortable did you feel during that conversation (1 being minimum comfort level and 10 being maximum comfort level)?
5. What characteristics of Spanish-speaking interpreters do you feel are the most important ones to have?

## Results

A total of 25 participants (18 participants in the experimental group and 7 participants in the control group) rated their satisfaction with the level of attention that they received in Spanish either by their healthcare provider or an interpreter during their time in the clinic. In the experimental group, 11 participants rated the level of attention received by the Spanish-speaking healthcare provider 10/10, three rated the level of attention received 9/10, two rated the level of attention received 8/10, and two rated the level of attention received 7/10.

From the control group, one patient rated the level of attention received from an interpreter as 10/10, two rated the level of attention received a 7/10, two patients rated the level of attention received as 5/10, one patient rated the level of attention received as 4/10, and one patient rated the level of attention received 3/10 (Fig. 1).

Participants in the experimental group were also asked to rate how comfortable they felt speaking Spanish with the Spanish-speaking student doctors on a scale of 1 to 10, 1 being uncomfortable and 10 being totally comfortable. The total scale was as follows: 1: *Terrible*, 2: *Very bad*, 3:

**Fig. 1** Patient perceived level of attention received**Fig. 2** Comfort speaking Spanish

Bad, 4: Poor, 5: Neutral, 6: Fair, 7: Good, 8: Very good, 10: Excellent. A total of 18 responses were collected. Twelve participants rated their comfort level 10/10, one rated their comfort level 9/10, two rated their comfort level 8/10, two rated their comfort level 7/10, and one rated their comfort level 5/10.

For the control group, in response to questions on comfort speaking with an interpreter rather than a Spanish-speaking provider, one participant rated their comfort speaking to an interpreter as 10/10, one participant rated their comfort as 7/10, one participant rated their comfort as 6/10, two participants rated their comfort 5/10, one participant rated their comfort 3/10, and one participant rated their comfort 1/10 (Fig. 2).

Participants were also asked if they felt that they received better care because they spoke with a Spanish-speaking student doctor in their first language rather than in English. Of the 18 participants, each participant

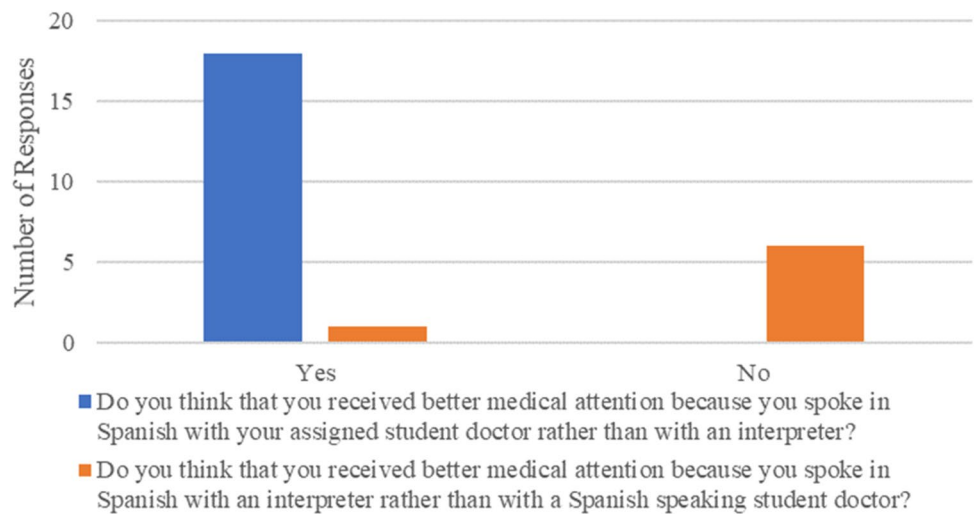
indicated that they felt they received better care due to speaking in their first language.

Members of the control group were asked if they felt that they received better care because they spoke with an interpreter. Of this group, one patient said they felt that they received better care because they spoke with an interpreter while six responded that they did not feel that they received better care (Fig. 3).

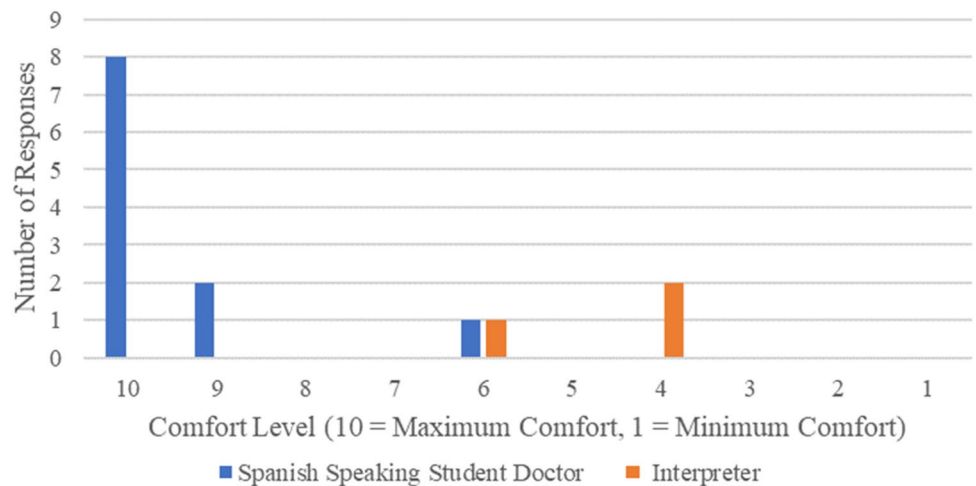
In the experimental group, 11 of the 18 participants indicated that they had discussed sensitive topics with their student doctor. These participants were asked to rate their comfort level discussing sensitive topics with the student doctor on a scale of 1–10, 1 being not comfortable at all and 10 being completely comfortable. Of these 11 participants, eight rated their comfort level discussing sensitive topics as 10/10, two rated their comfort level as 9/10, and one rated their comfort level as 6/10.

In the control group, three of the seven participants indicated that they had sensitive conversations with their student

**Fig. 3** Patient perceptions of care as a result of speaking Spanish



**Fig. 4** Comfort having sensitive conversations



doctor. These participants were asked to rate their comfort level discussing sensitive topics with the interpreter on a scale of 1–10, 1 being not comfortable at all and 10 being completely comfortable. Of these three participants, one rated their comfort level as 6/10 and two rated their comfort level as 4/10 (Fig. 4).

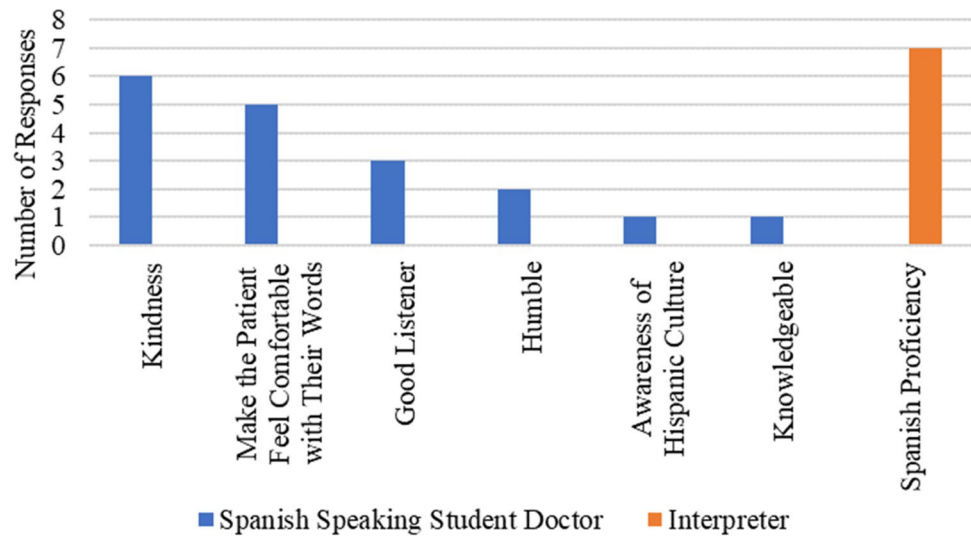
Lastly, participants of the experimental group were asked what characteristics of Spanish-speaking student doctors they felt were most important. Of the 18 participants, six indicated that kindness was important, five indicated that making a patient feel comfortable with their words was important, three indicated that being a good listener was important, two indicated that being humble was important, one indicated that awareness of Hispanic culture was important, and one indicated that being knowledgeable was important.

Similarly, participants of the control group were asked what characteristics of interpreters they felt were most important. All of them indicated that being proficient in Spanish was the most important trait (Fig. 5).

## Discussion

There are many factors that lead to greater patient satisfaction and improved health outcomes for LEP patients receiving language-concordant care. There are strong ties between L1 and emotion that can determine that language-concordant care allows physicians to connect with their patients emotionally, thereby enhancing perceived care by the patient. Thus, teaching Spanish to student doctors effectively can lead to greater patient satisfaction. The results of this study demonstrate that having Spanish-speaking healthcare providers providing health care to Hispanic patients can raise patients’ comfort levels and satisfaction in contrast to having the aid of an interpreter. However, given the small sample size of our study, future projects should expand the study to include more participants. Additionally, the survey design is another limitation of the study, as it does not take into account existing literature in the medical Spanish field. Rather, the questions

**Fig. 5** Spanish speaking patient perceptions of important traits of healthcare providers



asked to participants of both the experimental and control groups were created by looking at the CAHPS. However, some efforts have been published specifically in Spanish-speaking populations regarding the patient-reported quality of communication skills in clinical settings [35]. Another limitation of this study is the difference in the groups' numbers. Both groups would preferably have the same number of participants. Furthermore, it is also paramount to highlight that LEP patients may have a tendency to overrate clinicians who speak their first language in a positive direction.

## New Contribution to the Literature

The present study highlights that language concordance between healthcare providers and patients can improve patient perception of the quality of care that they receive. The results of this study demonstrate that having Spanish-speaking healthcare providers attending to Hispanic patients can raise patients' comfort levels and satisfaction with the care received in contrast to the care received by interpreters. Thus, providing second language training to student doctors can potentially improve patient care and reduce health inequities facing LEP patients. Furthermore, while Spanish is the predominant language other than English that is spoken in the U.S., it is also important to understand if these results can be applied to LEP patients who speak languages other than Spanish. Similarly, future projects should investigate whether these results can be applied to clinical settings other than free clinics, as well as areas outside of Southern California. Demographic differences between Hispanic LEP patients seeking care in different clinical settings and living in different areas could potentially limit the external validity of this study

and should be investigated in future studies. In addition, although all the student doctors involved in this study had good proficiency in Spanish (at least Intermediate High according to the American Council of Teaching of Foreign Languages), it would have been beneficial to have a performance assessment such as a Standardized-Patient encounter prior to determining that a Spanish learner is ready to see patients in the free clinic.

## Declarations

**Conflict of interest** All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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