The Association of Patient-Provider Language Concordance with Healthcare Comprehension Among Mexican-origin Latino/as in Oregon

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ABSTRACT
Objective: To understand the local Mexican-origin Latino community's preference for bilingual health care providers and understand the relationship between language concordant care and comprehension of a healthcare visit**.**
Background: Language barriers in healthcare negatively impact quality of care. Language concordant care (where a health care provider speaks the patient's language) has been shown to result in better patient comprehension than using interpreters/translators.
Study Design: This is a cross sectional study in collaboration with the General Consulate of Mexico. We developed a 20-item survey that includes questions about socio-demographics, an acculturation scale, and questions regarding language concordant care experience and preferences. Participants were aged 18 or older who had a healthcare visit within the past 12 months. We used descriptive and multivariable statistics to describe our sample and test the association of language concordant care and comprehension of the healthcare visit.
Results: We recruited 505 participants who all completed the survey in Spanish.
Overall, 93.5% reported preference for a language concordant provider and 32.9% reported receipt of such care. Of those who reported a concordant provider visit, 87% reported a regular source of care compared to 50% among those with a discordant provider ($p<0.001$). In multivariable analyses, patients with a concordant provider had higher odds of understanding everything their provider said (aOR = 10.53 (95% CI: 6.60-16.81).
Conclusion: There is a gap between the preference for language concordant providers and the receipt of this type of health care for Oregon Latinos. Increasing access to language concordant care can contribute to improving health care quality, equity, and outcomes for Latinos in Oregon.

1. Introduction

In 2020, the Latino population in the United States reached 62 million people, accounting for almost one in five Americans (19% of the US population).[1] Latinos are the second largest racial or ethnic group, and in nearly every state in the US, the Latino population growth has outpaced overall population growth. Oregon has followed this pattern: between 2010 and 2020 the Latino population grew 31%, compared with only 11% growth in the overall state population. Among Oregon Latinos, an estimated 85% are of Mexican origin,[2] and nearly 1 in 10 Oregonians speak Spanish at home.[3]

People with limited English proficiency (LEP) are those who do not have English as their primary language and have difficulty communicating effectively in English. There are about twenty-five million people in the United States that have limited English proficiency,[4] and over 8% of Oregonians report that they speak English 'less than well'.[3] LEP is associated with barriers to accessing healthcare as well as in patients' comprehension of the healthcare visit.[5]

Studies have shown that the presence of language barriers between patients and providers hinders the ability to deliver high-quality care for patients, maintain patient safety, achieve high levels of patient comprehension and high levels of patient satisfaction with their care.[6] Language concordance between patients and providers happens in a healthcare setting when both parties speak the same preferred/native language of the patient.[7] Language concordant providers have been shown to have stronger relationships with their patients, build trust more easily, and provide higher quality of care compared to in-person or telephone-based translators.[8] Language concordance between a physician and patient has been shown to improve care delivery by reducing medical errors, increasing patient understanding of the illness and treatment plan, improving patient adherence, resulting in higher satisfaction with the care received.[8]

The purpose of this study is to understand the local Mexican-origin Latino community's preference for language concordant (Spanish-speaking) health care providers and understand the relationship between language concordant care and comprehension of a healthcare visit**.** We hypothesize that 1. Mexican origin Latinos in Oregon have a preference for language concordant care; and 2. the presence of a language concordant provider is associated with greater comprehension of the health care visit.

2. Methods

We conducted a cross-sectional survey study. Our bicultural, bilingual (English and Spanish) research team members recruited Spanish- or English-speaking Latino/as who were at least 18 years old and waiting for processes and services (such as passports and notary appointments) at the Consulate General of Mexico in Portland, Oregon. The Consulate serves both Mexican-born and U.S.-born individuals of Mexican origin; U.S.-born individuals of Mexican origin can, for example, apply for dual citizenship or request Mexican passports or birth certificates from the Consulate.

We recruited a convenience sample of 505 individuals between December 2022 and April 2023. Respondents who met the screening criteria (self-identified Latino/a, at least 18 years old, and having had a healthcare visit within the last 12 months) provided oral informed consent after reviewing an information sheet and chose their preferred language (Spanish or English) for the self-administered survey. Participants completed the survey on paper; responses were then entered into a REDCap (Research Electronic Data Capture) electronic database by trained study staff. The senior author resolved any questions about survey responses. The Oregon Health and Science University Institutional Review Board approved this study.

We developed our survey based on previous literature, included validated scales, and also developed our own questions. The Consulate General of Mexico participated in the development and translation of the survey to ensure that our questions and wording were culturally appropriate in Spanish and English. Finally, we worked with a colleague at the National Institute of Public Health in Cuernavaca, Mexico, to do a final check of our Spanish version of the survey. Our survey contained a total of 20 items and included a validated language-based acculturation scale,[9] whether their last health care provider spoke Spanish, preferences for language-concordant care, overall understanding of information communicated by the provider at the most recent healthcare visit (measure of comprehension),[10] and socio-demographic information (details below).

Our primary outcome for regression modeling was the respondent's level of comprehension of information communicated by the provider at the most recent healthcare visit. We categorized comprehension as a binary variable: understanding everything the provider said versus understanding most, some, or only a little.

Our primary independent variable was experience of a language concordant provider at the respondent's most recent healthcare visit. We classified a Spanish-speaking provider as language concordant and an English-speaking provider as language discordant; no respondents reported a provider speaking another language. Our secondary independent variable was respondent acculturation using a validated scale.[9] Respondents were classified as low acculturation, bicultural, or high acculturation based on language(s) spoken as a child, usually spoken at home, usually spoken with friends, and that they usually thought in. Respondents who only spoke

Spanish or some other language as a child could report that other language. We combined bicultural (n = 28) and high acculturation (n = 6) respondents into a single group for analyses due to small sample sizes.

We included several other sociodemographic variables. We categorized respondent age, in years, as 18-24, 25-29, 30-39, 40-49, or 50 and above. Respondents reported their gender as male, female, or an open-ended option to self-identify. However, no respondents identified as a gender that was not male or female. We classified the number of years that the respondent had lived in the United States as less than five, five to ten, eleven or more, or "all of my life". In regression analyses, we collapsed eleven or more and "all of my life" into a single category. We categorized respondent education level as no formal schooling, currently in school, primary school, secondary/middle school, high school/GED, or at least an associate's degree. We collapsed education into a binary variable for regression modeling: less than high school versus high school or more; respondents who were currently in school were placed in the latter category. We included respondent residence, relationship status, and income status as binary variables (yes versus no): residence within the Portland metropolitan area (vs outside of the metro area), married or cohabitating, and had a regular source of income, respectively.

We included several variables related to the respondent's experience with healthcare. First, we included whether the respondent had a regular source of health care (yes versus no) and their preference for a healthcare provider who speaks their native language (agree, neutral, or disagree). We also included multiple variables about the respondent's most recent healthcare visit: who the visit was for (the respondent or a family member,) whether they needed help to understand what the provider said (yes versus no), who helped them understand the provider (minor child, adult family member/friend, non-medical staff, medical staff (including provider), professional interpreter, other, or no one).

Analysis

We compared respondent sociodemographic variables and acculturation level by receipt of language concordant care at the most recent healthcare visit, using Pearson's chi-squared test. We used overlaid bar graphs to graphically assess respondent's preference for and receipt of language concordant care, by acculturation level. We compared respondent's healthcare experiences by receipt of language concordant care at the most recent healthcare visit, using Pearson's chi-squared or Fisher's exact test. We developed crude and adjusted logistic regression models using respondent's comprehension of information communicated by the provider at the most recent healthcare visit as the outcome and receipt of language concordant care as the primary independent variable. The adjusted model also included respondent age, gender, acculturation, and years in the United States. We plotted the crude and adjusted odds ratios for receipt of language concordant care, with 95% confidence intervals.

3. Results

Our survey sample included 505 respondents, all of whom took the survey in Spanish. Table 1 describes our sample by receipt of language concordant care. The majority of our sample was between the ages of 30-39 (33.7%) and 40-49 (28.9%). The sample was overall equally split when it came to gender, female (47.3%) and male (52.5%). The overall majority of our sample resided in the Portland Metro area (85.9%), have been living in the United States >10 years (60.2%), and are married or co-inhabiting (85.9%). As for education levels, the majority of our sample reported having completed middle school (40.6%) or high school (34.9%), and 88.7% of our sample reported a regular source of income. A large majority of our sample had low levels of acculturation (93.3%).

Table 1. Mexican-origin Latino respondent characteristics, by experience with language concordant care and overall (n = 505), Oregon, 2022. Data are n (%).

Characteristic	*Discordant care*	*Concordant care*	*Overall*	*p-value*
n	339	166	505	
Age (years)				0.232

18-24	16 (4.7)	11 (6.6)	27 (5.4)	
25-29	61 (18.0)	35 (21.1)	96 (19.0)	
30-39	109 (32.2)	61 (36.8)	170 (33.7)	
40-49	102 (30.1)	44 (26.5)	146 (28.9)	
50+	51 (15.0)	15 (9.0)	66 (13.1)	
Gender				0.356
Female	160 (47.2)	79 (47.6)	239 (47.3)	
Male	179 (52.8)	86 (51.8)	265 (52.5)	
Missing	0 (0.0)	1 (0.6)	1 (0.2)	
Lives in Portland metro area				0.128
No	40 (11.8)	30 (18.1)	70 (13.9)	
Yes	298 (87.9)	136 (81.9)	434 (85.9)	
Missing	1 (0.3)	0 (0.0)	1 (0.2)	
Years in the United States				0.677
< 5	28 (8.3)	15 (9.0)	43 (8.5)	
5-10	88 (26.0)	48 (28.9)	136 (26.9)	
≥ 11	206 (60.8)	98 (59.0)	304 (60.2)	
All of my life	17 (5.0)	5 (3.0)	22 (4.4)	
Married or cohabitating	288 (85.0)	146 (88.0)	434 (85.9)	0.363
Education				0.399
Didn’t attend school	14 (4.1)	3 (1.8)	17 (3.4)	
Currently in school	4 (1.2)	3 (1.8)	7 (1.4)	
Primary school	52 (15.3)	31 (18.7)	83 (16.4)	
Secondary/Middle school	134 (39.5)	71 (42.8)	205 (40.6)	
High school/GED	121 (35.7)	55 (33.1)	176 (34.9)	
Associate degree or more	14 (4.1)	3 (1.8)	17 (3.4)	
Has regular source of income	306 (90.3)	142 (85.5)	448 (88.7)	0.115
Acculturation				0.114
Low	312 (92.0)	159 (95.8)	471 (93.3)	
Bicultural/High	27 (8.0)	7 (4.2)	34 (6.7)	

Figure one is divided by acculturation level and shows both preference for and receipt of a language concordant provider. Overall, 93.5% reported preference for a language concordant provider and 32.9% reported receipt of such care (data not shown). For those with low acculturation levels (left bar), the majority indicated a preference for a language concordant provider (98.7%) and 33.8% reported receipt of a language concordant provider (Figure 1). Among the high acculturation group, a slightly smaller majority indicated a preference for a language concordant provider (88.2%) and 20.6% reported receipt of a concordant provider.

Figure 1: Preference for (blue bar) and receipt of (red bar) a language concordant provider, by acculturation level.

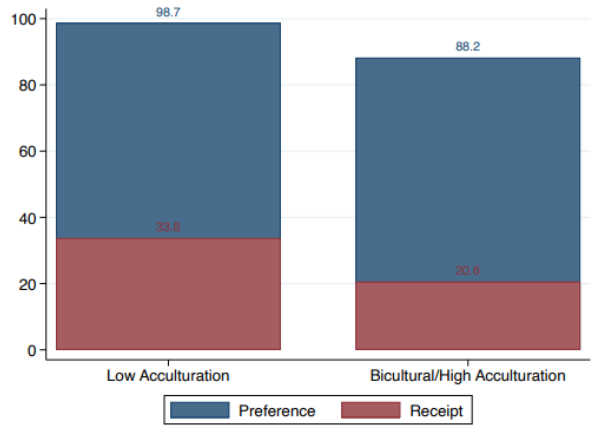

Table two shows healthcare experiences of respondents by experience of a language concordant provider. A smaller proportion of those who reported a discordant provider reported a regular source of care (50.1%) compared to those with a concordant provider (87%; p<0.001). When asked if the respondent needed someone to help them understand the provider, those with a discordant provider reported higher levels of need of assistance (80.8%) compared to those with a concordant provider (21.7%; p=<0.001). Finally, among those with a discordant provider, a lower percentage reported understanding everything the provider said (23.3%) compared to those with a concordant provider (68.1%; p≤0.001). All these differences between those with a discordant and concordant provider were statistically significant.

Table 2. Healthcare experiences of respondents, overall and by experience with language concordant providers. Data are n (%).

	Discordant provider	*Concordant provider*	*Overall*	*p-value*
n	339	166	505	
Who was seen at your last visit?				*0.001*
Myself	271 (79.9)	109 (65.7)	380 (75.2)	
Family member	68 (20.1)	56 (33.7)	124 (24.6)	
Missing	0 (0.0)	1 (0.6)	1 (0.2)	
Do you have a regular source of health care?				*< 0.001*
No	169 (49.9)	20 (12.0)	189 (37.4)	

Yes	170 (50.1)	145 (87.4)	315 (62.4)	
Missing	0 (0.0)	1 (0.6)	1 (0.2)	
Did you need someone to help you understand the provider?				*< 0.001*
No	63 (18.6)	130 (78.3)	193 (38.2)	
Yes	274 (80.8)	36 (21.7)	310 (61.4)	
Missing	2 (0.6)	0 (0.0)	2 (0.4)	
Who helped you understand the provider?				*< 0.001*
Minor child	29 (8.6)	8 (4.8)	37 (7.3)	
Adult family member or friend	55 (16.2)	3 (1.8)	58 (11.5)	
Non-medical staff	19 (5.6)	7 (4.2)	26 (5.1)	
Medical staff, including provider	7 (2.1)	7 (4.2)	14 (2.8)	
Professional interpreter	106 (31.3)	18 (10.8)	124 (24.6)	
Other	1 (0.3)	0 (0.0)	1 (0.2)	
Did not have someone	119 (35.1)	123 (74.1)	242 (47.9)	
Missing	3 (0.9)	0 (0.0)	3 (0.6)	
How much did you understand of what provider said?				*< 0.001*
Everything	79 (23.3)	113 (68.1)	192 (38.0)	
Most	169 (49.9)	44 (26.5)	213 (42.2)	
Some	63 (18.6)	5 (3.0)	68 (13.5)	
Little	22 (6.5)	3 (1.8)	25 (5.0)	
Missing	6 (1.8)	1 (0.6)	7 (1.4)	

Figure two presents the crude and adjusted regression model results. The model outcome is comprehension at the last healthcare visit comparing those with Spanish-speaking providers (concordant) with those with an English-speaking provider (discordant) (Figure 2). The adjusted model controls for age, gender, acculturation, and years in the United States. Both crude and adjusted estimates are above one, meaning that patients who had a Spanish speaking provider had higher odds of understanding everything the provider said at their visit. The crude association was OR = 7.02 (95% CI: 4.65-10.60), the adjusted estimate was aOR = 10.53 (95% CI: 6.60-16.81).

Figure 2.

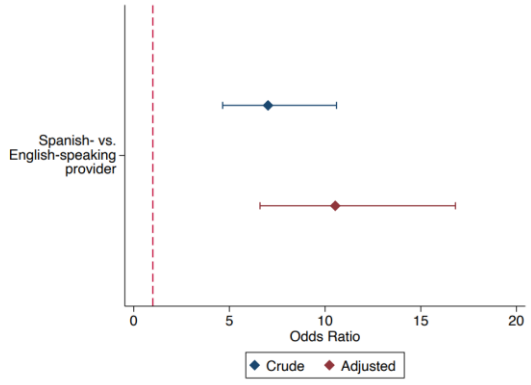

Figure 2: Crude (blue) and adjusted (red) odds ratios of understanding everything that the healthcare provider said at the most recent visit for respondents who had a Spanish-speaking provider compared to an English-speaking. Adjusted estimates are adjusted for age, gender, acculturation, and years in the United States. The red dashed line represents the null value (odds ratio = 1).

4. Discussion

In our sample of Mexican-origin Latino/as (Mexican and Mexican American) recruited from the Consulate of Mexico in Portland, Oregon, only about one third of the respondents reported having a language concordant provider, despite having an overwhelming preference for one. We found that those who received language concordant care were more likely to report a usual source of care, and we found a strong and significant association between receipt of language concordant care and comprehension of the healthcare visit, controlling for other factors.

Our findings illustrate a critical gap in access to language concordant providers. We show that despite very high levels of preference for a language concordant provider among our sample of Latinos in Oregon, only about one third of reported having one at a recent healthcare visit. In Oregon, Spanish is spoken by only 10 percent of the healthcare providers with 75% of these providers located in just six of Oregon's 36 counties.[11] This lack of access to language concordant providers forces patients with LEP to rely on the availability and accuracy of a translator or use a second language to communicate with their provider which may result in decreased comprehension, increased psychological stress, and communication errors that are not faced by patients with language concordant providers.[12] Research has shown that language concordant care is associated with greater privacy, sense of trust, satisfaction, as well as patient comprehension and accuracy of communication.[12] Therefore, the use of interpreters is not the most effective way to solve language barriers and is at best a short-term solution. In addition, the use of interpreters can increase the cost and length of visit times.[12]

Latinos in Oregon demonstrate a strong preference for language concordant care. In particular, those with lower levels of acculturation nearly universally (98%) reported a preference for language-concordant care and preference was also high (88%) among our high acculturation group. This is consistent with a previous study in Oregon that showed among Spanish-speaking participants 56.1% reported needing interpreting services.[13] While the focus of that study was on interpreter services, both studies showed a significant gap in availability of Spanish speaking healthcare personnel. It is also important to reiterate that the Latino population in Oregon is increasing since the time of the previous study,[1] making the need for more Spanish speaking providers even greater today.

Our study found that a significantly higher proportion of those with a language concordant provider reported having a regular source of care compared to those without one. A similar study conducted in California utilized a survey conducted in 11 different languages and found similar differences in regular sources of care between those with LEP and English proficient respondents.[5] They showed a higher percentage (18%) of LEP respondents who reported not having a usual source of care compared 14% among those with English proficient. Those with LEP may be hesitant to seek care, have difficultly establishing a regular source of care, or face additional barriers to accessing care.[5] Having a regular source of care is important for overall health and well-being and accessibility is an important measure of quality of care.[14]

Our study highlighted lower levels of comprehension of health care visits among those who reported visits with a discordant provider compared to a concordant provider. Previous studies have found that the failure to communicate properly the seriousness of a diagnosis, risk factors, and treatment lead to patients not complying with instructions or opt out of having life-saving procedures and treatments.[10,15] Further, there is evidence that miscommunication is more likely to occur among clinicians who use an inadequately mastered second language likely due to challenges conveying nuances of risk and certainty.[16] Healthcare diagnoses and treatment plans are crucial to understand fully in order to ensure positive health outcomes as well as maintain patient safety. The presence of a language concordant provider is the key to improve and optimize levels of understanding and overall improve health and well-being among the Latino community in Oregon, and across the country.

Limitations

Our findings must be interpreted with the following limitations in mind. Our recruitment took place in the Mexican Consulate, therefore, our results may not be generalizable to all Latino/as in Oregon. All of our participants took their surveys in Spanish, and may not represent the preferred language of all Latino/as in Oregon.

Key Takeaways and Implications

This study was able to identify that there is a preference for language concordant providers among Latinos in Oregon. There is a gap between the preference for language concordant providers and the receipt for this type of health care. In addition, there is an association between language concordant care and overall comprehension of a healthcare visit. Our study results can help understand the need for Spanish-speaking providers in Oregon, to advocate for an increase in access to language concordant care in Oregon and contribute to improving health equity and outcomes for Latinos in Oregon.

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