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Patient-Physician Language Concordance and Primary Care Screening among Spanish-Speaking Patients

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Abstract

Background—Language discordance between patient and physician is associated with worse patient self-reported healthcare quality. As Hispanic patients have low rates of cardiovascular and cancer screening, we sought to determine whether patient-physician language concordance was associated with differences in rates of screening.

Methods—We performed a retrospective medical record review of 101 Spanish-speaking patients cared for by 6 Spanish-speaking PCPs (language concordant group) and 205 Spanish-speaking patients cared for by 44 non-Spanish-speaking PCPs (language discordant group). Patients were included in the study if they were age 35–75 and had utilized interpreter services 2001–2006 in two Boston-based primary care clinics. Our outcomes included screening for hyperlipidemia, diabetes, cervical cancer, breast cancer, and colorectal cancer with age- and sex-appropriate subgroups. Our main predictor of interest was patient-physician language concordance. In multivariable modeling, we adjusted for age, sex, insurance status, number of primary care visits, and comorbidities. We adjusted for clustering of patients within individual physicians and clinic sites using generalized estimating equations.

Results—Patients in the language discordant group tended to be female compared to patients in the language concordant group. There were no significant differences in age, insurance status, number of primary care visits, or Charlson comorbidity index between the two groups. Rates of screening for hyperlipidemia, diabetes, cervical cancer, and breast cancer were similar for both language concordant and discordant groups. However, patients in the language concordant group were less likely to be screened for colorectal cancer compared to the language discordant group RR 0.78 (95% CI 0.61–0.99) after multivariable adjustment.

Conclusions—This study finds that Spanish-speaking patients cared for by language-concordant PCPs were not more likely to receive recommended screening for cardiovascular risk factors and cancer. Furthermore, language concordance was associated with less colorectal cancer screening. Further research is needed to examine which conditions are optimal to improve cardiovascular and cancer screening for Spanish-speaking patients, particularly for colorectal cancer which has a low rate of screening.

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INTRODUCTION

The Latino population accounts for more than half of the overall population growth in the United States.¹ Between 2005 and 2007, 47.1% of the Latino population was born outside of the U.S., with more than three quarters of the U.S. Latino population speaking a language other than English at home.² More than a third of these foreign-born Latinos have limited English proficiency.

Increasing evidence has shown that those with limited English proficiency receive suboptimal preventive care, including less cardiovascular risk factor and cancer screening.³ Spanish-speaking patients are five times less likely to have cholesterol screening and three times less likely to have blood pressure screening compared to English-speaking patients.⁴ Limited English proficiency Latinas are less likely to undergo Pap Smear, mammogram, fecal occult blood test, and sigmoidoscopy.⁵ Compared to non-Hispanic whites, Latinos experience 152% more age-adjusted years of potential life lost from cervical cancer before age 75.⁶ Latinos are also more likely to be diagnosed with end-stage colorectal cancer.⁷ The underlying causes are poorly understood.

Language appears to play an important role in the quality of health services provided to Spanish-speaking Latino patients and is a critical determinant of health care utilization.⁸ LEP Latinos are less likely to have access to primary care and to engage in follow-up care.⁹ Professional interpreters are better than ad hoc interpreters and can raise the quality of care of LEP patients to approach that of patients without language barriers.^{10,11} Taking this a step further, many believe that matching LEP patients with providers who speak their language (i.e., language concordance) may improve health outcomes.¹² Initial research has shown this to be true for patient satisfaction, health education, and follow-up.¹³ More recently, some studies indicate that patients with language concordant providers may have improved communication with regard to diet and exercise, compared to patients with language-discordant providers.^{14,15} Patients with language-discordant providers also have more problems understanding medical situations, but these communication barriers can be partially mitigated with language-concordant providers.¹⁶ Other research has shown that language concordance between patient and physician among Spanish monolingual patients is associated with better patient-reported well-being¹⁷ and medication adherence.¹⁸

Little is known, however, about differences in primary care screening practices between language concordant and discordant physicians. In this study, we aimed to compare screening rates of hyperlipidemia, diabetes, cervical cancer, breast cancer, and colorectal cancer for Spanish-speaking patients among those with Spanish-speaking physicians versus those with non-Spanish speaking physicians.

METHODS

Participants

Our study included Latino adult patients seen at two primary care clinics in Boston, MA, 1) an academic hospital-based clinic with approximately 1200 Spanish-speaking patients, 4 Spanish-speaking attending physicians, and 44 non-Spanish speaking attending physicians, and 2) a community-based ambulatory care center with approximately 1000 Spanish-speaking patients, 2 Spanish-speaking attending physicians, and 5 non-Spanish speaking attending physicians. All attending physicians were board-certified in Internal Medicine and care for patients included this sample population.

We specifically identified Latino patients who were primarily Spanish-speaking by sampling those having used interpreter services in Spanish. We then generated a random list of

patients and confirmed Spanish-speaking status based on having an appointment with a Spanish-speaking interpreter and documentation in visit notes that the patient speaks primarily Spanish. We defined patients as eligible if they were 35–75 years of age and saw their PCP between 1/1/2000 and 6/30/2006. We included only those patients who were seen at least twice by the same PCP over a period of one year or longer. We utilized a maximum of 50 medical charts for each PCP in the study. In total, 306 patients were included in our study.

Study Period

We reviewed electronic medical records to determine eligibility, as defined above. Data abstracted from the records of eligible subjects included sociodemographic factors, health care utilization, and medical conditions. The study period was defined as the 3 years prior to and including the most recent PCP visit.

Measurements

Our outcome variables were based on national guidelines (Table 1).

As a secondary outcome, we examined immunization rates for tetanus and influenza vaccines based on Advisory Committee on Immunization Guidelines.²¹ Given the small sample size of those eligible for pneumonia vaccination, we excluded this outcome from our study.

Our primary predictor was patient-physician language concordance. We classified patients into 2 groups based on whether PCPs could converse fluently in Spanish. Group 1 consisted of Spanish-speaking patients with Spanish-speaking PCPs and Group 2 consisted of Spanish-speaking patients with non-Spanish-speaking PCPs. All Spanish-speaking physicians were natives of Latin America or Spain and spoke Spanish fluently.

We considered relevant covariates such as age, ethnicity/race, sex, weight, insurance status, number of PCP visits, total number of primary care visits which included urgent care, duration of patient-PCP relationship, and comorbidities. We assessed comorbid disease by utilizing the weighted Charlson comorbidity index, a previously validated measure of comorbidity.²² As race was not generally documented for the vast majority of this Latino population, we did not adjust for racial background.

Statistical Analysis

Statistical comparisons for binary variables were assessed using chi square test. Statistical comparisons for continuous variables were assessed by Student's *t* tests. We created multivariable logistic regression models to explore the relationship between patient-physician language concordance and binary outcomes of screening. We performed forward selection given most covariates were not significantly associated with outcome and the limited sample size in our outcomes. For our outcomes of colorectal cancer screening, tetanus vaccination, and influenza vaccination, we did have a more even distribution of outcomes and were able to include all of the covariates of interest. In secondary analysis, we adjusted for the nesting of patients within individual physicians and clinic sites using generalized estimating equations.

RESULTS

Sample characteristics by patient-physician language concordance are shown in Table 2. Patients in the language discordant group were slightly older, of female sex, and had more

primary care visits compared to the language concordant group. Insurance status and comorbidity score were not significantly different.

Table 3 shows unadjusted and adjusted screening rates by patient-physician language concordance. The vast majority of patients had cholesterol and glucose screenings, which were very similar between the language concordant and discordant. The majority of women had mammograms and pap smears performed, with rates similar between the groups the two groups. For outcomes of lipid, glucose, and pap smear screening, only age and language concordance were included in our models using forward selection. For mammogram screening, only language concordance was used in our model using forward selection. The main difference between the language concordant and discordant groups was the higher rate of colorectal cancer screening in the language discordant compared to the language concordant group. For colorectal cancer screening, the relative risk was 22% lower in the concordant group versus the discordant group. Relative risks with multivariable adjustment demonstrated similar relationships to unadjusted analyses (Table 3). These findings did not change substantially after adjusting for clustering by provider and clinic site using generalized estimating equations.

Patients cared for by language concordant PCPs versus language discordant PCPs had lower rates of immunization for tetanus and influenza (32% versus 44% and 10% versus 33%, respectively), but only differences for tetanus vaccination reached statistical significance [adjusted risk ratio 0.78 (95% CI 0.62–0.97)].

DISCUSSION

From our study, we found that Spanish-speaking patients cared for by language-concordant physicians were not more likely to receive recommended screening for cardiovascular risk factors and cancer compared to those cared for by language discordant physicians. In contrast, it appears that Spanish-speaking patients were less likely to receive colorectal cancer screening and tetanus vaccination if cared for by a language concordant PCP.

Previous research has found that Latinos with limited English proficiency are less likely to receive cardiovascular risk factor and cancer screening compared to English proficient Latinos.^{3–5} Ethnically diverse patients are also less likely to get breast and cervical cancer screening if they have an ethnically concordant PCP.^{23,24} Interestingly, our study did not suggest a potential benefit between patient-physician language concordance and adherence to screening outcomes. In fact, we observed a possible detrimental association of between patient-physician language concordance and colorectal cancer screening. We found these results to be somewhat surprising as we were expecting to see the opposite trend, that is, Spanish-speaking patients having higher screening rates with Spanish-speaking physicians. There may be a few plausible reasons why patients with limited English proficiency in our study did not have higher screening rates with language concordant physicians. One possible reason for the null findings is our high rate of screening for hyperlipidemia, diabetes, cervical and breast cancer, limiting our ability to detect differences between the concordance groups.

Our most surprising finding was that the language discordant group was more likely to get colorectal cancer screening and tetanus immunizations compared to the language concordant group. Our study was not able to determine the reasons for this difference. One possibility is that Spanish-speaking physicians are not aggressive in convincing patients to undergo colorectal cancer screening. There actually may be some unrecognized obstacle for discussing colonoscopies within the language concordant group. For example, it may be that a Spanish-speaking Latino physician may not feel as comfortable talking about an invasive

procedure to a patient of the same ethnic and/or cultural background compared to a non-Spanish-speaking physician using a third party interpreter. Alternatively, it could be that Spanish-speaking PCPs are more likely to explain procedures and complications of colonoscopy or side effects of vaccinations than English-speaking PCPs who may be ordering tests without detailed explanation. Also, there may be competing interests given time constraints. We found in an earlier study that Spanish-speaking physicians may be more likely to counsel on other topics such as diet or exercise in this same population.

A recent survey demonstrated low levels of colorectal cancer screening among Korean American patients with limited English proficiency cared for by Korean American physicians.²⁵ A follow-up study conducting in-depth interviews of these physicians, mostly foreign-born, demonstrated that there were multiple barriers to recommending colorectal cancer screening.²⁶ These included physician lack of awareness, perceived patient understanding of screening/preventive medicine, perceived patient non-compliance, hesitation to deal with abnormal results, hesitation to deal with upset patients or their families, and lack of insurance coverage. Our study, in conjunction with these previous studies, may dispel the assumption that patient-physician ethnic and/or language concordance would necessarily improve quality of care.

There were several limitations to our study. First, this was a retrospective study based solely on medical record data. However, given our primary outcome was screening, we felt the medical record would be more reliable than asking patients directly. Our study population comes exclusively from Massachusetts, which may not be representative of the Latino population in the U.S. As the assignment of patients to providers was not randomized, there are several possible confounding factors that may have accounted for our largely negative findings. This is also an extremely small sample size, particularly the number of Spanish-speaking providers, so our results were not generalizable. We also did not compare our findings with English-speaking patients, particularly those cared for by our Spanish-speaking physicians. Thus, we do not know if the observed differences are truly a function of language concordance as opposed to a function of individual providers. We tried to partially adjust for this by using generalized estimating equations. We did not have graded measure of English or Spanish language ability. This study therefore does not differentiate between patients who have different levels of English and Spanish fluency.

In past studies, patient-physician language concordance has been shown to improve some aspects of patient care, particularly patient satisfaction. However, although many clinics in this country attempt to match patients with providers who speak their language, our study does not support this practice. It remains unclear whether patient-physician language concordance does indeed lead to better outcomes. Further research is needed to examine under which conditions are optimal to improve cardiovascular and cancer screening for Spanish-speaking patients, particularly for colorectal cancer which has a low rate of screening.

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Table 1

Screening criteria

Screening outcome	Criteria	Sample
Hyperlipidemia	Lipid profile within last five years	Women age ≥ 45 ; men age ≥ 35
Diabetes	Fasting glucose (or a normal random glucose) within last three years	Women and men age ≥ 45
Cervical cancer	Pap smear within last three years	Women age 35–65
Breast cancer	Mammogram within last two years	Women age 40–70
Colorectal cancer	FOBT, sigmoidoscopy, barium enema, a/o colonoscopy	Women and men age ≥ 50

Screening criteria were based on guidelines from the U. S. Preventive Services Task Force¹⁹ and American Diabetes Association (for diabetes screening)²⁰ Sample criteria varied slightly based on additional risk factors, as per guidelines. Of note, patients were excluded from a particular category if they had known disease. For example, in looking at screening for diabetes, patients were excluded if they had a pre-existing diagnosis of diabetes. We did not assess blood pressure screening as patients in both clinics were automatically screened for blood pressure without a separate order from the PCP.

Table 2

Characteristics of Participants by Patient-Physician Language Concordance

	Spanish-speaking patients with English-speaking physicians N=101	Spanish-speaking patients with Spanish-speaking physicians N=205	p
Mean age (years)	54.1 ± 11.8	51.8 ± 10.1	.08
Sex (female)	72%	58%	.02
Number of PCP visits	8.7 ± 4.7	8.0 ± 4.8	.21
Number of total primary care visits	12.3 ± 7.0	10.9 ± 7.3	.03
Insurance			.25
No health insurance	10%	7%	
Medicaid, Medicare	51%	43%	
Other insurance	40%	49%	
Charlson comorbidity index	0.72 ± 1.39	0.79 ± 1.51	.72

Table 3

Screening unadjusted and adjusted risk ratios comparing language concordant versus language discordant patient-physician relationships

Screening test (n=number eligible)	Spanish-speaking patients with English-speaking PCP	Spanish-speaking patients with Spanish-speaking PCP	Unadjusted Risk Ratio (95% CI)	Adjusted Risk Ratio* (95% CI)
Lipid screening (n=255)	92% (61)	95% (151)	1.03 (0.70 – 1.30)	1.04 (0.76 – 1.31)
Diabetes screening (n=236)	92% (72)	93% (147)	1.00 (0.75 – 1.27)	1.01 (0.76 – 1.27)
Mammogram (n=144)	74% (35)	76% (74)	1.02 (0.72–1.32)	1.02 (0.72–1.32)
Pap smear (n=165)	87% (55)	89% (91)	1.02 (0.72–1.31)	1.01 (0.72–1.30)
Colorectal cancer screening [^] (n=172)	72% (44)	47% (52)	0.75 (0.50 – 0.99)	0.78 (0.61 – 0.99)

* Models were assessed and adjusted for potential confounders (such as age, sex, insurance, number of primary care visits, Charlson comorbidity score) identified through forward selection where appropriate: Models for lipid screening, diabetes screening, and Pap smear screening were adjusted for age; Model for colorectal cancer screening were adjusted for age, sex, insurance status, Charlson comorbidity index, and number of primary care visits. None of the factors considered confounded the relationship between language concordance and mammogram screening.

[^] Colorectal cancer screening included screening by barium enema, fecal occult blood testing, sigmoidoscopy, and/or colonoscopy.