Language of Interview: Relevance for Research of Southwest Hispanics

ABSTRACT

Background. This paper reports the results of a survey investigating health status, access, satisfaction with care, and barriers to care in Arizona. The major focus is on the association between language of interview and the dependent measures; interviews were conducted in English and Spanish.

Methods. The differences between groups were tested using chi-square statistics for each independent categorical variable; the significance of all the independent variables on each of the dependent variables was tested simultaneously using maximum likelihood logistical regression models.

Results. Language of interview for Hispanic children was a significant variable, more important than ethnicity itself, in determining health status, access, satisfaction with care, and barriers to care; language of interview for Hispanic adults was not a significant measure, but neither was ethnicity. Instead, income affected access to care for adults.

Conclusions. This pattern of results suggests that in the southwestern United States, studies on health status and access to care that use only ethnicity and do not include language of interview may fail to identify populations of Hispanic children who are remarkably more vulnerable. Public health research of Hispanic populations can be more instrumental toward policy improvement if it increases its specificity with this heterogeneous group. Analysis of language of interview has a low cost and a high benefit toward this specification. (*Am J Public Health.* 1991;81: 1399–1404)

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Introduction

The health of Hispanic Americans has attracted public health research interests for important reasons: poor health status,[1,2] diminished routine use of care,[3–6] and increasing, unprecedented violence.[7,8] The most dominant contextual variables for health, level of income and education, are the lowest in the nation.[9] Moreover, Hispanic population growth exceeds that of all other racial and ethnic groups.[10] In addition to underscoring important empirical issues, methodological inquiries have addressed data uniformity,[11–16] identifier terminology[17–20] and its implications for policy,[21] effects of acculturation,[22,23] and comparative validity of translation.[24–26]

An operationalization for measurement that adds not only to methodological study but to the inferences drawn is language of interview. Among 69 articles published on the topic in the last 10 years, we found none that treated the language of the interview as an analytical variable, even though direct questions about English proficiency and proficiency as a measure of acculturation have been used. Language of interview contributes to specification in research of US Hispanics, particularly in the Southwest, because Hispanics have great genetic, historical, socioeconomic, and political heterogeneity. Furthermore, English language ability sufficient for an interview is often an indirect measure of ability to obtain other health inputs, such as employment, housing, education, nutrition, and health care.

Methods

The data were drawn from a larger survey, commissioned by a major Arizona foundation, investigating health status, barriers to health care, and satisfaction with care in the state. The field work was conducted by Louis Harris and Associates, Inc, using a questionnaire and survey design developed by the investigators, provider and consumer groups, and government agencies in Arizona. The survey was designed to provide reliable information about a representative cross-section of adults and children in all parts of Arizona, excluding those whose places of residence were Indian reservations, military bases, prisons, nursing homes, college dormitories, and mental institutions.

The total survey consisted of 3104 randomly selected adults 17 years of age and over who were interviewed about themselves, and 1113 adults who provided information about a randomly selected child 0 to 16 years of age living in the household. Of the 4217 interviews, 4073 were conducted by telephone during February through May of 1989. In the first stage, interviews were conducted with a representative cross-section of 2000 adults and on behalf of 705 children; in the second stage, additional telephone interviews were conducted with 1004 adults and on behalf of 364 children at or below the poverty level. The child proxy was identified by asking the adult respondent for the

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This paper was submitted to the journal July 18, 1990, and accepted with revisions May 28, 1991.

identity of the adult in the household who was most familiar with the health care of the child. If this was the adult respondent, then the interview continued; if not, then the interview shifted to that identified person. The oversample was obtained by screening additional households drawn from the same bank of telephone numbers in which low-income persons had been found in the first stage. A household was not interviewed if its income exceeded the poverty level. In both stages of the telephone interviews, rural areas were oversampled to provide better data about less-populated areas, whereas Maricopa County, with 83% of the population, was undersampled.

Lastly, 144 in-person interviews were conducted in households without telephones (100 with adults about themselves and 44 with adults about their children) in order to obtain responses from those populations least likely to have residential telephones—poor, Spanish-speaking Hispanics. These in-person interviews were conducted in selected census tracts in Phoenix, Tucson, and Yuma that had the lowest proportion of households without telephones and the highest proportion of households below the federal poverty line. This resulted in Spanish speakers being more likely to receive a personal interview than English speakers. Hispanic adults accounted for 50% of the in-person adult interviews, compared with 19% of the telephone interviews, before weighting. Hispanic children accounted for 55% of the in-person child interviews, compared with 26% of the telephone interviews, before weighting. This was done to preclude bias from using only telephone interviews, with subsequent underreporting for those without telephones; there are no publicly available data on urban/rural and Hispanic/Anglo telephone penetration rates for simple weighting procedures. We chose instead the documented but smaller potential risks of administration effects of face-to-face[27,28] and different-language interviews.[25] The questionnaire was translated from English to Spanish by consultants in Tucson in order to use appropriate phraseology, and retranslated by other consultants to verify the accuracy of the translation, for both telephone and in-person interviews.

A total of 469 adults and 235 children who labeled themselves Mexican American or Hispanic were identified. They were asked whether they preferred to be interviewed in Spanish or English. Of these, 139 adult interviews and 70 child interviews were conducted in Spanish. All of the tabular analyses reported were performed using weighted observations.

Dependent measures used for recipient health status and access to care were as follows:

- *Current health status:* whether the respondent was in excellent, good, fair, or poor health
- *Disability:* whether the respondent was disabled, handicapped, or had a chronic disease that kept him or her from participating fully in work or other activities
- *Usual source of care:* whether the respondent had one person or place that he or she usually went to when sick or when seeking advice about health
- *Medical care use:* whether, in the 12 months prior to the survey, the respondent had one or more visits to a medical provider and (separately) one or more visits for emergency care
- *Nonreceipt of needed care:* whether the respondent, in the 12 months prior to the survey, thought that he or she needed medical care but did not receive it
- *Refusal of medical care:* whether the respondent, in the 12 months prior to the survey, had been refused health care because of financial or other reasons
- *Access to care:* whether it had become easier or more difficult for the respondent and his or her family to get the medical care they needed
- *Financial problems from illness:* whether illness in the family had been a major financial problem.

The last four items were used only in the adult respondent interviews.

This analysis used the following independent measures:

- *Ethnicity:* Anglo or Hispanic, derived from two separate questions (The term *Anglo* was used as a convenient way of referring to the non-Mexican dominant society, not necessarily indicating British origin. Respondents were asked for their race, from among the categories of White, Black, Asian, Native American, or other. Those who reported "other" were asked for their race: the most common answer was Mexican American, which was recorded. Respondents were separately asked whether they were Hispanic. Individuals who were White and not Hispanic were classified as Anglo, and individuals who identified themselves as Mexican American or White and Hispanic were classified as Hispanic. For the purpose of this analysis, Black and Native American respondents were excluded from all calculations.)
- *Language of interview:* the language in which the interview was completed, recorded separately
- *Employment status of the main wage earner in each household:* whether the main wage earner was employed, unemployed, or not in the labor force (retired, full-time student, homemaker, or disabled)
- *Household income:* classified as poor (below the federal poverty definition), near poor (between federal poverty and 185% of the poverty line), and nonpoor (over 185% of federal poverty)
- *Age of adult respondents:* 17 through 39, 40 through 64, and 65 and older
- *Education of the adult respondent and the main wage earner in each household:* less than a high school education, a high school education, or more than a high school education
- *Residence:* urban (Maricopa or Pima Counties, which include Phoenix and Tucson) or rural Arizona
- *Mode of interview administration:* telephone or in-person

In an exploratory stage, statistical significance of the differences between groups for the reported measures was tested using chi-square statistics for each independent categorical variable. In the final analyses, maximum likelihood logistical regression models were developed that simultaneously tested the significance of all of the independent variables on each of the dependent variables. This process involved forward model construction, to control for possible confounding due to the paucity of independence among variables themselves. In all of these models, the ethnicity and language of interview terms were included to test for their significance, after controlling for all other significant demographic measures. Dummy variables representing different categories within each of the demographic variables were used in the logistical models.

Results

The exploratory cross-tabulations for the nine health status and access measures for adults revealed significant differences between Anglos and Hispanics on seven of these measures, at a 95% confidence level. (These tables can be obtained from the second author.) Six of these measures indicated that Hispanics in Arizona have

lower health status and worse access to care than Anglos, before consideration of other demographic variables. These measures included the proportion whose self-described health status was fair or poor, the proportion without a usual source of care, the proportion without an ambulatory care visit in the 12 months prior to the survey, the proportion who sought but were refused care, the proportion whose access to care had become more difficult, and the proportion with financial problems due to illness. The comparison of Hispanics interviewed in English with those interviewed in Spanish revealed that there are significant differences between these two groups on five of these measures. All five of these comparisons indicate that the Hispanics who were interviewed in Spanish have lower health status and worse access to care than Hispanics who were interviewed in English, before consideration of other demographic variables. These measures included the proportion whose self-described health status was fair or poor, the proportion without a usual source of care, the proportion without an ambulatory care visit in the 12 months prior to the survey, the proportion who sought but were refused care, and the proportion with financial problems due to illness.

Similar results were found for the five health status and access measures for children. There are significant differences between Anglos and Hispanics on two of the measures, at a 95% confidence level: the proportion whose proxy-described health status was fair or poor and the proportion who were disabled. Both of these measures indicate that Hispanic children in Arizona have lower health status than Anglos but no worse access to care, before consideration of other demographic variables.

The comparison of Hispanic children whose parents were interviewed in English with those whose parents were interviewed in Spanish indicated that there are significant differences between these two groups on three of these measures. All three of these comparisons indicate that the Hispanic children whose parents were interviewed in Spanish have lower health status and worse access to care than Hispanic children whose parents were interviewed in English, before consideration of other demographic variables. Two of these measures—percentage of children with no usual source of care and percentage of children with no ambulatory care visit in the 12 months prior to the survey—showed no difference between Anglos and

TABLE 1—Maximum Likelihood Logistical Regression Models, Health Status and Access Measures for Adults, Arizona, 1989

Dependent and Independent Variables	β	χ^2	P	R
Health status (0 = excellent, 1 = good, 2 = fair, 3 = poor)				
All Hispanics	.073	0.56	.4549	.000
Spanish-interviewed Hispanics	.279	2.28	.1314	.006
Main wage earner not in labor force	.787	90.37	.0001	.107
Poor household	.296	10.20	.0014	.056
Nonpoor household	−.469	24.20	.0001	−.053
17–39 years old	−.477	37.04	.0001	.033
Less than high school education	.485	26.22	.0001	−.054
More than high school education	−.414	23.73	.0001	−.068
Model χ^2 = 647.00, $P < .0001$, $R = .287$				
Disability (0 = yes, 1 = no)				
All Hispanics	.113	0.57	.4510	.000
Spanish-interviewed Hispanics	−.010	0.00	.9694	.000
Main wage earner not in labor force	−1.492	133.14	.0001	−.210
Main wage earner unemployed	−.502	4.79	.0286	−.031
Nonpoor household	.618	24.67	.0001	.087
17–39 years old	1.207	79.05	.0001	.161
65 years old or older	.648	24.62	.0001	.087
Less than high school education	−.347	8.84	.0029	−.048
Model χ^2 = 460.86, $P < .0001$, $R = .387$				
Usual source of care (0 = yes, 1 = no)				
All Hispanics	−.026	0.05	.8155	.000
Spanish-interviewed Hispanics	.311	2.27	.1317	.008
Main wage earner not in labor force	−.395	16.06	.0001	−.061
Nonpoor household	−.273	10.01	.0016	−.046
17–39 years old	.438	24.51	.0001	.077
Model χ^2 = 80.09, $P < .0001$, $R = .136$				
Had a medical visit (0 = yes, 1 = no)				
All Hispanics	.175	2.61	.1065	.013
Spanish-interviewed Hispanics	.235	1.34	.2466	−.000
Main wage earner not in labor force	−.485	30.88	.0001	−.086
Nonpoor household	−.556	37.44	.0001	−.096
More than high school education	−.241	7.29	.0069	−.037
Rural	.251	9.47	.0021	.044
Model χ^2 = 117.03, $P < .0001$, $R = .165$				
Had an emergency visit (0 = yes, 1 = no)				
All Hispanics	.180	1.27	.1897	.000
Spanish-interviewed Hispanics	.252	0.85	.3553	.000
Main wage earner not in labor force	−.268	7.68	.0056	−.044
Poor household	−.245	6.06	.0138	−.037
Rural	.236	5.86	.0155	.036
Model χ^2 = 23.88, $P = .0002$, $R = .068$				
Needed but did not receive care (0 = yes, 1 = no)				
All Hispanics	.111	0.62	.4297	.000
Spanish-interviewed Hispanics	−.057	0.05	.8202	.000
Poor household	−.308	5.41	.0201	−.036
Nonpoor household	.561	15.58	.0001	.072
65 years old or older	.879	36.26	.0001	.114
Model χ^2 = 86.45, $P < .0001$, $R = .171$				
Refused care (0 = yes, 1 = no)				
All Hispanics	−.087	0.21	.6464	.000
Spanish-interviewed Hispanics	.775	3.31	.0689	.030
Main wage earner unemployed	−.486	4.25	.0393	−.039
Poor household	−1.168	53.23	.0001	−.188
17–39 years old	−.699	19.94	.0001	−.111
Model χ^2 = 98.55, $P < .0001$, $R = .247$				
Access to care (0 = more difficult, 1 = no difference, 2 = easier)				
All Hispanics	−.302	6.47	.0110	−.033
Spanish-interviewed Hispanics	−.043	0.04	.8402	.000
Poor household	−.310	6.86	.0088	−.035
Nonpoor household	.452	12.26	.0005	.050
17–39 years old	−.372	13.39	.0003	−.053
65 years old or older	.587	17.81	.0001	.063
Less than high school education	−.312	8.28	.0040	−.039
Model χ^2 = 163.13, $P < .0001$, $R = .192$				

(Continued)

TABLE 1—Continued

Dependent and Independent Variables	β	χ^2	*P*	*R*
Financial problems from illness (0 = yes, 1 = no)				
All Hispanics	.194	1.70	.1927	.000
Spanish-interviewed Hispanics	−.233	0.92	.3388	.000
Main wage earner not in labor force	−.305	5.47	.0193	−.037
Poor household	−.289	4.93	.0264	−.034
Nonpoor household	.992	38.37	.0001	.121
65 years old or older	.624	15.87	.0001	.074
Less than high school education	−.339	7.68	.0056	−.048
Model $\chi^2 = 153.30$, $P < .0001$, $R = .236$				

TABLE 2—Maximum Likelihood Logistical Regression Models, Health Status and Access Measures for Children, Arizona, 1989

Dependent and Independent Variables	β	χ^2	*P*	R
Health status (0 = excellent, 1 = good, 2 = fair, 3 = poor)				
All Hispanics	.209	1.90	.1678	.000
Spanish-interviewed Hispanics	.584	5.12	.0236	.039
Nonpoor household	−.720	25.22	.0001	−.105
Main wage earner has more than high school education	−.515	13.51	.0002	−.074
Model $\chi^2 = 99.28$, $P < .0001$, $R = .208$				
Disability (0 = yes, 1 = no)				
All Hispanics	−.077	0.06	.8035	.000
Spanish-interviewed Hispanics	−.069	0.02	.8975	.000
Main wage earner not in labor force	−.716	5.06	.0244	−.078
Model $\chi^2 = 4.81$, $P = .1863$, $R = .000$				
Usual source of care (0 = yes, 1 = no)				
All Hispanics	−.383	2.60	.1069	−.025
Spanish-interviewed Hispanics	1.182	12.25	.0005	.105
Main wage earner has less than high school education	.648	10.41	.0013	.096
Model $\chi^2 = 31.95$, $P < .0001$, $R = .168$				
Had a medical visit (0 = yes, 1 = no)				
All Hispanics	−.286	2.47	.1163	−.019
Spanish-interviewed Hispanics	1.069	12.63	.0004	.093
Nonpoor household	−.779	23.96	.0001	−.134
Model $\chi^2 = 43.74$, $P < .0001$, $R = .175$				
Had an emergency visit (0 = yes, 1 = no)				
All Hispanics	.145	0.54	.4619	.000
Spanish-interviewed Hispanics	.572	1.72	.1893	.000
Model $\chi^2 = 3.90$, $P = .6482$, $R = .000$				

all Hispanics but significant differences between those children with English- and Spanish-speaking Hispanic parents. The third measure was the proxy-reported health status, which showed a gradient of declining health status from Anglo children, through Hispanic children with English-speaking parents, to Hispanic children with Spanish-speaking parents.

Analysis of the demographic measures for adults showed significant differences between Anglos and all Hispanics on all six demographic measures and significant differences between Hispanics interviewed in English and those interviewed in Spanish on three measures. There were significant differences between Anglo and all Hispanic children on all four demographic measures and significant differences between Hispanic children whose parents were interviewed in English and those whose parents were interviewed in Spanish on three measures.

The exploratory analysis revealed the need for multivariate statistical techniques that would simultaneously control for the demographic and administration variables in order to assess the Anglo-Hispanic and English-Spanish differences. As the dependent variables were in categorical form, logistical regression was used. Table 1 displays the nine maximum likelihood models for adults. The terms for all Hispanic respondents were significant in only one model: change in access to health care. Hispanic respondents were more likely to report that access to care had become more difficult than other respondents, after controlling for other significant demographic effects. The terms for Spanish-interviewed Hispanic respondents and for mode of administration were insignificant in all models.

Table 2 displays the maximum likelihood models for children. The terms for all Hispanic respondents were insignificant in all five models and significant for Spanish-interviewed Hispanic parents in three models. After controlling for household income and main wage earner education, Hispanic children whose parents were interviewed in Spanish are more likely to be in fair or poor health and less likely to be in good or excellent health than Anglo children or Hispanic children whose parents were interviewed in English. Hispanic children whose parents were interviewed in Spanish were less likely to have a usual source of care than Anglo children or Hispanic children whose parents were interviewed in English. Lastly, Hispanic children whose parents were interviewed in Spanish are less likely to have had a medical visit in the year prior to the survey than Anglo children or Hispanic children whose parents were interviewed in English. The term for mode of administration was insignificant in all models.

In seven of the adult models nonpoor respondents (those with household incomes greater than 185% of the federal poverty definition) had significantly better health status and access to care than the poor and near-poor respondents. In five of the adult models, poor respondents had significantly worse health status and access to care than the near-poor and nonpoor. The poor were also more likely than other respondents to have had one or more emergency room visits. Adults with less than a high school education had significantly worse health status and access to care (as measured by four models) than those who had finished high school or had post-high school education. In two of the children models, their living in a nonpoor household was significantly related to higher health status and access to care.

Discussion

For Hispanics in general, and particularly Hispanics in the southwestern United States, it is important to conduct interviews and analyze separately responses in Spanish for two reasons: to refine translingual and transcultural methodologies and to increase specificity through sampling in this most heterogeneous group. In addition, it presents the

opportunity for clinical and social studies of a group with high stress and for study of the long-term effects of political occupation. Each will be discussed.

Comparative validity of translated interview instruments for Spanish speakers in the United States has varied,[22–24] although it appears intact in other, more homogeneous Spanish speakers.[29] Cross-cultural comparisons of health status values have shown greater agreement at the more severe end of the dysfunction continuum and lesser agreement at the less severe end—in the same language.[30] Clearly, internal consistency requires further study. For example, our study would have been greatly enhanced on this dimension if physical examination of respondents had been feasible. At present, however, translated instruments are critical to adequately sample US Hispanics.

Specification of Hispanics in national research is critical because of the significant heterogeneity. There have been waves of immigrants secondary to political change or economic pain from the Caribbean and Central and South America and a steady flow from Mexico. In addition, Puerto Rico as a US territory, has an open-door policy with the United States. Not only does immigration come from diverse places, giving us Black Hispanics and White Hispanics, but the socioeconomic range is great and the political spectrum ranges from extreme right to extreme left. Given this diversity, generalization of Hispanics in national research can clearly be misleading.

Hispanics in the US Southwest have an even more complex history. Briefly, Spain occupied indigent peoples' territory from the Canary Islands in the North Atlantic Ocean, most of the Caribbean Islands, most of Central and South America, and North America—all of Mexico and the territory that is now Texas, California, Utah, Nevada, and parts of New Mexico, Arizona, Colorado, and Wyoming. Mexico overthrew Spain after 300 years, in 1821. In 1848, to end the Mexican War, Mexico agreed to cede the area now the above states to the United States in the Treaty of Guadalupe Hidalgo. The treaty guaranteed Mexicans' land rights, but these were not respected. Many southwestern Hispanics are descendants of area residents from the mid-1500s and earlier, of course—if the indigenous lineage is considered. In the meantime, there have been immigrants from Central and South America and the steady flow from Mexico.

Language of interview focuses on the earliest phase of the Hispano-US trajectory, which all southwestern Hispanics experience either by occupation or by immigration. Spanish monolingualism, in itself, is not a health risk factor but a practical indicator of important risk factors such as diminished education, poverty, and diminished access to care. This is seen as the trajectory progresses. Hispanic immigrants are learning English at the same rate as past generations of other immigrants[31] and are following the classic American pattern of integration into US society.[32] Studies reveal that they accept English as their language in the United States[33] and that the transition from Spanish begins in the immigrant generation. Ninety-five percent of their children speak English, and 50% of this second generation have lost Spanish-speaking ability, speaking English exclusively. These students do not fare much worse than all other students: in 1980, 39% of all Hispanic sophomores were enrolled in remedial courses in English, and 35% of all the nation's sophomores were enrolled in the same remedial classes.[32] While immigrants work at the lowest level jobs, their children move into skilled positions and their grandchildren into professional and managerial positions.[31] Examination of the factors for the 34% wage-offer differential between Mexican-descent men and other men attributes half of this inequality to education and only 2% to fluency in English.[33]

Our study has demonstrated the even greater increased vulnerability in inputs to health and in health care of exclusively Spanish speakers. Four interrelated findings bear elaboration: while reported health status of Spanish speakers and their children is low, the percentage without a usual source of care and without a recent ambulatory visit is significantly lower than the other groups'. We may conclude that the needed care is not obtained. Furthermore, the percentage with financial problems secondary to illness is significantly higher in this group. This, then, forms a vicious cycle: care is not obtained because of financial problems and lack of care causes financial problems. In addition to this hopelessness cycle is the added stress of recent "English only" laws. These are not only confusing, but perceived as menacing by Spanish speakers; often, this perception is accurate as to the roots of the laws. Monolingual Spanish speakers, including those refugees from Central America who have experienced torture and other human rights abuses, can provide insight into specific stressors and stress and into health in general.

The highly stressful early stage of the Hispano-US trajectory and its barriers have historically been overcome, albeit not achieving a status of other US citizens. Perhaps comparability of southwestern Hispanics' health status and other health-related measures is not realistic, given the groups' history. The long-term effects of political occupation, now being debated in other regions of the world, can be studied in southwestern US Hispanics.

Public health research of Hispanic populations can be more instrumental toward policy improvement if it increases its specificity with this heterogeneous group. Analysis of language of interview has a low cost and a high benefit toward this specification. □

Acknowledgments

Grateful appreciation is expressed to Delia Saenz, PhD, School of Psychology and Hispanic Research Center, Arizona State University, for comments on a previous draft. This research was supported in part by the Flinn Foundation, Phoenix, Arizona. All opinions and views expressed are solely those of the authors and do not necessarily represent those of the Flinn Foundation.

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