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Health Services Research

Latinos' Health Care Access: Financial and Cultural Barriers

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This study aimed at investigating how income, culture, and language affect health care access. Data from a structured questionnaire administered to a random sample of 206 Latinos was analyzed using multivariate logistic regression. Qualitative data served to explain quantitative results. Point estimates for various access measures were similar to national data. In multivariate logistic regression, income and education determined having health insurance (OR 6.8 and 7.4; 95% CI 2.7–17.3 and 2.9–19.0, respectively). Time in the U.S. and health insurance determined having a regular source of care (OR 4.6 and 5.8; 95% CI 1.7–12.8 and 2.1–16.0, respectively). Having a source of care and being female determined visit to the doctor in the past year (OR 6.14 and 6.73; 95% CI 2.3–16.5 and 2.4–19.3, respectively). Language and culture showed no statistically significant effect on access measures, but qualitative data showed they were related to health care barriers.

KEY WORDS: Latinos; health care access; health disparities; health insurance.

INTRODUCTION

Health care access is one of the ten leading health indicators mentioned in Healthy People 2010, that has the goal of eliminating health disparities among Americans (1). This issue is particularly important for Latinos, the fastest growing minority group in the U.S. (2) and the ethnic group with the worst access to health care (3–5). For example, they are the ethnic group with the largest proportion of people that have no health insurance (37%) (3), and who did not see a doctor in the past year (26%) (3).

An improved understanding of the extent and characteristics of health care access barriers in this community can serve several purposes. First, at the national level, it can aid in developing equitable, culturally sensitive services, helping policy makers and health providers understand Latinos' needs. Second, it can serve as a resource to the Latino community.

Access is defined as "those dimensions that describe the entry of a population group into the health care delivery system" (6, p. 13). According to Andersen's (7) health care access model, outcomes are health status and satisfaction. Service utilization affects outcomes; population characteristics, health behavior, and health practices determine service utilization. Outcomes also affect access determinants. The health care system and the external environment affect health behaviors, health outcomes, and some population characteristics, such as income and education.

Access can be divided into two dimensions, potential and realized. Potential access refers to enabling resources for health care utilization, such as health insurance and regular source of care (6–8). Realized access refers to actual services used and satisfaction with services. According to Andersen's framework, dimensions of potential access can be conceptualized as determinants of realized access.

National policy, such as that outlined in Healthy People 2010, embraces social justice goals. According to a social justice perspective, which focuses on the common good, everybody should have potential access to care, and realized access should be determined by need, rather than by social structure characteristics

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(8). Most studies on health care access focus on its financial determinants (7, 9–3). Culture and language also appear to determine health care access, although they have not been widely studied (9–11, 14, 15).

Health and health care access data for Latinos in Southwestern Pennsylvania (SWPA) are scarce. They encounter a health system that, unlike that on the East and West Coasts, offers no specific services for them. Therefore, they are likely to be exposed to strong cultural and language health care access barriers. The objective of this study is to understand the relationship of financial, cultural, and language factors to potential and realized access to health care for Latinos in SWPA. Given that the national level data shows that the minorities and the poor have inequitable access to care (3, 10, 16), it was hypothesized that Latinos' health care access in SWPA was not equitable and was affected by those factors.

METHODS

Design and Population

This cross-sectional study used a combination of survey research and participant observation, proposed as appropriate for research with Latino populations (5). The Office of Management and Budget (17, p. 17) defines Latino as "a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race." This study adopts the U.S. Census Bureau policy, which uses self-identification to determine who is Latino (18). The study region, Southwestern Pennsylvania, was defined as the seven county region that includes Allegheny, Beaver, Butler, Fayette, Greene, Washington, and Westmoreland. It traditionally had a small Latino population of middle class extraction (19). Income, however, was low in relation to educational level. The last decade has seen an influx of working class immigrants. There were over 17,000 Latinos in SWPA in 2000, mostly residing in Allegheny County, representing 1% of the population (20).

No list of SWPA Latinos that would constitute a reasonable sampling frame was available. Spanish surnames are not sensitive or specific enough to identify Latinos (21, 22). The small proportion of Latinos and the absence of Latino neighborhoods made random digit dialing and cluster sampling unfeasible (23, 24). Participant observation is recommended as an alternative to develop a sampling frame when there is no way to develop it from existing records (25). Many individuals, groups, and organizations were asked to provide basic information about their clients, affiliates, or friends. Groups were ordered by occupation of known members of the group to obtain an ordered list. Assuming that intragroup variation was lower than intergroup variation, the resultant implicit stratification was expected to increase representativeness and decrease variation of a systematic sample (26). Power was calculated at 80%, considering seven independent variables. Five replicates with random start were systematically sampled (26).

The instrument and consent form were back translated to assure clarity and were available in both English and Spanish. The survey was pilot tested in Allegheny County, Pennsylvania. All noneligible subjects were replaced, as were those who were not found. In total, 434 listings were sampled. Two hundred and six interviews were completed between June 1999 and February 2000. All subjects had the choice of being interviewed in Spanish or English. Eighty seven percent were interviewed in Spanish. Most interviews were face-to-face (86.9%). Twenty-seven (13.1%) were phone interviews because other arrangements were not feasible.

The response rate was 66.67%. Response rates for Latinos range from 49% to 91% (14, 22, 24, 27–29). Recently, many face-to-face surveys have achieved response rates under 70%, due to general reluctance of subjects to answer surveys (30). The refusal rate was 8.04%. Refusal rates for Latinos range from 3.1 to 12% (27, 31, 32). To maximize the response rate, efforts were made to obtain the sponsorship of local community groups, as generally recommended (25, 29, 33–35).

The data entry program precluded entry of out-of-range data. Furthermore, 20 randomly selected records (9.7%) were re-entered for quality control. Hot deck imputation was used to impute missing values on income and age in seven and two records, respectively (36, 37).

The sample was comprised of Latinos residing in SWPA, originally from 21 countries. Most of them (83.41%) planned to stay in the U.S. for 5 years or more. There were 91 South American-born respondents and 45 Mexican-born. Unweighted percentages by demographic characteristics are shown in Table I. Almost half of the participants were male (47.09%) and 59.71% were younger than 45 years. Thirty-three percent of participants had less than college education and 34.95% had annual family income under $20,000. Thirty percent of respondents had been in the U.S. for less than 5 years, 52.43% had low English proficiency,

Table I. Demographic Characteristics of the Sample

Discrete variables	Number of subjects	Percentage of sample
Place of birth		
Mexico	45	21.84
Puerto Rico	17	8.25
Cuba	15	7.28
Central America	13	6.31
Other[a]	24	11.65
South America	92	44.66
Male	109	47.09
Age <45 years	123	59.71
Income <$20,000/year	72	34.95
Education less than college	69	33.50
<5 years in the U.S.	62	30.10
Low English proficiency	108	52.43
Low acculturation	123	59.71
Low physical health status	84	40.78
Low mental health status	93	45.15
Plans to stay in the U.S.		
<5years	34	16.59
5 years or more	14	6.83
Indefinitely	137	66.83
Don't know	20	9.76
Occupation		
Blue collar, service, farm	55	26.70
Professional, skilled	82	39.81
Not in paid work force	36	17.48
Student	33	16.02

Continuous variables	Mean	Median	Standard deviation
Age	42.23	40.05	14.15
Acculturation	2.84	2.75	0.58
Physical helath status	52.96	54.75	6.30
Mental health status	51.06	53.41	8.71

[a] "Other" region includes individuals born in the United States, Spain, or Latinos born elsewhere.

and 59.71% had low acculturation. Physical and mental health status were characterized as low in 40.78% and 45.15% of participants, respectively. Additionally, participant observation, including informal conversations with a larger number of people and participation in community events, complemented quantitative data. Participant observation data were gathered over a 17-month period. Notes' text was coded as themes relating to community and health care access. These data were used to clarify or put into context quantitative findings (38, 39).

Measurements

Outcomes

Potential access outcome variables were "insurance status," measured as having any health insurance or having none; and "regular source of care," measured as having a person or place where the respondent goes regularly when in need of health care. Realized access outcome variables were "saw a doctor in the past year," "saw a dentist in the past year," and "general satisfaction."

Independent Variables

Three variables were chosen as "explanatory variables," based on the conceptual framework. They were dichotomized, at the expense of losing some important detail in the information, because of the limited number of data points. The way they were dichotomized followed what has been reported in the literature. These variables were "income," ("less than $20,000" and "$20,000 or more") (5, 9), "acculturation," ("low" and "high," measured using

Marin *et al.*'s (40) twelve-item index that includes English ability, and language and cultural preferences for communication, media, and friends; a value of less than 3 was considered low acculturation); and "English ability" ("low" and "high"; a person who stated that he or she was equally proficient in English and Spanish was considered to have high "English ability"). Language of interview was not a reliable reflection of English ability, because several highly English proficient individuals and native English speakers chose to interview in Spanish for a variety of reasons. For realized access measures, the measures of potential access, having health insurance and a regular source of care, were also considered explanatory variables, following Andersen's access framework.

Eight control variables were considered. "Region of birth" had three categories: "Mexican," "South American," and "Other." All other control variables were dichotomized for regression analysis: "county of residence" into "Allegheny" and "not Allegheny"; "age" into "18–44" and "45 and older"; "sex" into "male" and "female," "time in the U.S." into "less than 5 years" and "5 years or more" (41), "education" into "less than college" and "at least some college." "Education" was dichotomized into "less than high school graduate" and "high school graduate or more" for estimation purposes, to match available census data used to compute poststratification weights. Physical and mental health status were measured with the Short Form 12 (SF-12) (42). The medians for the U.S. population were used as the cut point between "good" and "bad" health status.

Statistical Analysis

Analysis included computation of estimates and multivariate logistic regression. Three types of weights were applied before analysis (37): 1) Design weights were computed for each replicate as the inverse of the probability of selection. 2) Nonresponse weights account for the bias generated because respondents might differ from nonrespondents systematically. They were computed for each group that composed the frame as the inverse of the corresponding response rate. 3) Poststratification weights attempt to account for the bias resulting from an imperfect sampling frame. The variables used to create weights were "county of residence" and "education," with the standard being Census 1990 data.

Estimation

Point estimates and 95% confidence intervals were computed for outcome variables, using SUDAAN® including all three sets of weights (Table II). Regional estimates were not computed due to sparse data.

Multivariate Logistic Regression

For this analysis, poststratification weights were not used. Variables considered for logistic regression must 1) be relevant according to the conceptual model, and 2) have a meaningful effect on the dependent variables in univariate regression, defined as less than 25% probability that the relationship with the outcome was due to chance (45).

For each dependent variable separately, two sets of regressions were performed. The first one involved "income" and "acculturation." The second set involved, "income" and "English ability." If both "acculturation" and "English ability" were in the equation simultaneously, "English ability" would be

Table II. Weighted Estimates and 95% Confidence Intervals for Outcome Variables and Current National Data

Characteristic	Weighted estimates	95% confidence interval	National data
No health insurance	38.06	21.65–54.47	37.0[a]
No regular source of care	22.57	13.85–31.29	26.0[b]
No visit to the doctor in the past year ($n = 205$)	20.23	11.90–28.56	17.0[c]
No visit to the dentist in the past year	32.98	22.14–43.82	57.8[d]
"Moderately" or "Not at all" satisfied with care ($n = 193$)	21.86	13.67–30.05	N/A

Note. N/A is not available.
[a] Includes people <65 years of age (3).
[b] Includes people between ages 18 and 65 (3).
[c] Includes people between ages 18 and 65 (43).
[d] Data are from San Antonio, TX, Baltimore, MD, and two Indian Health service sites. Includes people ages 35 to 44, dentate (44).

represented twice, as it was one of the dimensions of the acculturation scale.

Multivariate logistic regression with forward inclusion was performed. Covariates were introduced one by one, starting with the one that showed the smallest probability for the *G* statistic in univariate regression. Covariates that were also measures of access ("insurance status" and "source of care") were entered last, because, according to our theoretical framework, potential access determines realized access. To be parsimonious, a covariate stayed in the model if: 1) it was shown with 95% confidence that the covariate's contribution to the model was not due to chance and b) the introduction of the variable caused a change of 15% or more in the coefficient of at least one of the study variables, with respect to the previous model.

The reference groups in the logistic regression equations were: income <$20,000, low acculturation, region South America, less than college education, less than 5 years in the U.S., male, uninsured, and no regular source of care. The effect of the study variables in the main effects model was ascertained using the Wald statistic. Theoretically plausible interactions were introduced, provided the two first order variables had a significant effect on the outcome in the main effects model.

"English ability" had coefficients smaller than their standard errors in multivariate regressions, after one or two variables were added. Qualitative data supported the notion that this measure did not represent English ability accurately. Therefore, it was dropped from further analysis. Results of multivariate logistic regression are shown in Table III.

RESULTS

The Community

From qualitative data it was learned that Latinos in SWPA were geographically scattered, associated with each other along socioeconomic lines, and were a loosely organized and disconnected population.

Potential Health Care Access

"Income" significantly affected "insurance status," in the univariate and in the multivariate regression. "Acculturation" had no significant effect on insurance status. "Education" and "region of birth" also had significant effects on "insurance status" in the final model.

In the univariate and multivariate regression, income above $20,000 and "high acculturation" had a significantly positive effect on "regular source of care" after controlling for "education." However, after controlling for "time in the U.S.," the effect of

Table III. Adjusted Odds Ratios^a and Confidence Interval in Logistic Regression

	Outcomes					
Independent variables	Insurance	Regular source of care Main effects	Regular source of care model with interactions	Visit to the doctor in the past year	Visit to the dentist in the past year	Satisfied with care
Income > $20,000	6.78^b (2.66–17.25)	1.29 (0.50–3.36)	1.31 (0.50–3.43)	0.65 (0.26–1.66)	1.57 (0.70–3.50)	1.27 (0.57–2.83)
High acculturation	0.44 (0.17–1.13)	2.32 (0.71–7.55)	2.32 (0.76–7.04)	1.12 (0.40–3.14)	1.62 (0.75–3.53)	1.91 (0.94–3.85)
Region						
Mexico	0.50 (0.18-1.39)	—	—	—	—	—
Other	2.85 (0.92–8.83)	—	—	—	—	—
College or higher education	7.38^b (2.87–18.98)	1.78 (0.59–5.31)	1.95 (0.63–6.06)	—	1.63 (0.71–3.73)	0.14^b (0.14–0.82)
Time in the U.S. >5 years	—	4.61^b (1.67–12.79)	21.52^b (3.62–128.97)	—	—	—
Female	—	2.10 (0.83–5.29)	1.98 (0.77–5.08)	6.14^b (2.28–16.52)	1.55 (0.75–3.20)	—
Has insurance	—	5.75^b (2.07–15.98)	24.75^b (4.61–132.97)	2.11 (0.80–5.57)	1.28 (0.52–3.18)	—
Has a regular source of care	—			6.73^b (2.35–19.32)	2.39^b (0.99–5.77)	—
Insurance × Time in the U.S.	—	—	0.10^b (0.01–0.74)	—	—	—

Note. Indicates that the variable was not present in the final model.

[a] All Odds Ratios correspond to the final model, except for the OR of the interaction.

[b] Indicates an Odds Ratio significantly different from zero with $p < 0.05$.

both variables decreased, especially that of “acculturation.” “Income” was borderline significant, until “insurance status” was introduced. In the main effects model, being in the U.S. for 5 or more years and having health insurance were the only significant determinants of having a regular source of care with an odds ratio greater than “1.” Following the main effects model, a model without “time in the U.S.” was calculated, where high acculturation showed a significant effect on “regular source of care,” with an odds ratio of 4.1. There was a significant negative interaction between “insurance status” and “time in the U.S.,” which means that for a person with less than 5 years in the U.S., the curve of insurance versus source of care is steeper than for those with more years in the U.S.

Qualitative data shows that many jobs Latinos held, offered no health benefits. Other jobs provided health benefits only after several months of employment. Job instability resulted in many people, who qualified for insurance, spending long periods of time uninsured. Occasionally, health plans excluded preventive care or excluded some family members.

Realized Health Care Access

“Income” and “acculturation” had no significant effect on any of the realized access outcome variables, in the univariate or multivariate regression. “Sex” significantly affected “visit to the doctor” in the final model. “Insurance status” had a significant effect on “visit to the doctor,” but it lost its effect after the introduction of “source of care” in the model. No variables had statistically significant effect on “visit to the dentist.” However, in the final model “source of care” had borderline significant effect (Wald statistic’s $p = 0.05$). More educated respondents were significantly less likely to be satisfied with care received. An interaction term was introduced for “visit to the doctor,” but it was not significant.

Informants reported there were no regular interpreters at most doctors’ visits. Language incompatibility’s importance goes beyond translation. Latino patients—regardless of English proficiency—experienced difficulties communicating in English when they were sick.

A second cultural aspect that emerged in qualitative data as affecting realized access was Latinos’ preference for personal and warm relationships with providers. Providers’ commitment and interest were at least as important—and perhaps more important—than their medical knowledge. Latinos valued providers that took their individual situations into account when conveying information to them and treated them as “human beings.” Some Latinos were convinced they received substandard medical treatment because of their ethnicity. Those who had a negative experience with the health system, due to financial and administrative barriers, language and cultural incompatibility or discrimination, avoided later use as much as they could.

Low-income, uninsured participants, who were satisfied with every aspect of their last visit to the doctor, were asked how they obtained care. Most of them reported using informal arrangements. Circumventing the formal system, they obtained care through a chain of individuals in their social network. This care was prompt, free, and in their language of choice. They had more visits to the doctor than they would without these arrangements.

DISCUSSION

The main limitations of the study include an incomplete sampling frame and a relatively small sample. The sampling frame included 16% of the adult population of the area, estimated to be approximately 13,500. Thus, selection is the most serious threat to the validity of this research and decreases its generalizability. To balance this limitation, efforts were made to include a diverse range of individuals in the sampling frame, and results were weighted to decrease the influence of bias. Since small sample size decreased study power, absence of significant associations should be taken with caution.

Although the Latino population in SWPA had collectively many years of formal schooling, the proportions of individuals who were uninsured (38.1%) and had no regular source of care (20.2%) was not significantly different from that of Latinos at the national level (37% and 26.0%, respectively) (3). This might be partially explained by the fact that income was low in relation to years of education.

In accordance with the conceptual framework, “income” determined having a “regular source of care” through “insurance status.” “Income” and “education” determined having health insurance, most likely through the type of job a person held. A negative interaction between “insurance status” and “time in the U.S.” means that being insured is a more crucial factor in obtaining a regular source of care for a newcomer than for somebody who has been in the U.S. for 5 years or more. With the passage of time, as individuals without insurance become citizens, they also tend to qualify for public programs, or have arranged for other care options.

Some Latinos in SWPA stated they chose to go without insurance, or without a regular source of care, because they were healthy; some trusted God to protect them from illness. However, this was not really a true choice; they also expressed they actually could not afford insurance. To complicate matters further, lack of information meant many were unable to use the few resources that were available to them. Often, people waited until they could get insurance coverage or until they were extremely sick and could not delay seeking care any longer.

The proportion of those who did not visit a dentist during the past year was 33.0%, smaller than in selected low-income areas of the U.S. (57.8%), (44) but national level data were not available to draw a proper comparison. The proportion of Latinos in SWPA who did not visit a doctor in the past year (20.2%) was similar to national data (17.0%) (43). Financial factors exerted no statistically significant effect on realized access in logistic regression analysis. Access to doctors' visits could be considered equitable if determined by need. In such case, age and physical and mental health status would show strong influence on realized access. This was not the case. The only variable that reflected need and significantly influenced a doctor's visit was sex. Women saw doctors more often. This happens in all population groups, partly due to women's greater need for care, but also to men's less cultural acceptance of the need for care.

Additionally, quality of care and distribution of services by cultural variables are key to assessing access equity. Although results were not statistically significant, qualitative data show realized access was affected more than potential access by cultural aspects. The most obvious of these is language.

As in this research, observations of other immigrant groups in the U.S. show that they regard health services as cold and disinterested (46). The biomedical system promotes impersonal relationships and imposes time restrictions that clients perceive as signifying lower quality of care. Education inversely affected satisfaction with care received. It has been noted before than more educated respondents tend to use a higher standard to judge their care, and also are more able to articulate their dissatisfaction.

Concerns about discrimination could not be proven, but it has been demonstrated that African Americans receive different treatment due to ethnicity, and, therefore, they have to be taken into account (47–49).

According to qualitative data and in accordance with Andersen's model, participants' evaluation of their health care affected later use. Perceived access barriers that were insurmountable and a visit that was expected to cause more distress than the perceived risk from illness affected all contacts with the health care system. Understandably, preventive care was most easily forgone because skipping it had no immediate consequences. This type of behavior has been described in other populations, not just Latinos. For example, a 1970s study of Appalachians found no difference between the perceived susceptibility to illness and perceived seriousness of the illness between Appalachians and non-Appalachians (50). However, Appalachians perceived treatment to be less effective and more difficult to get. They had to overcome so many barriers within the health system that only severe symptoms justified contacting the health system. Quantitative research that distinguishes realized access to preventive and nonpreventive services, and that quantifies perceived barriers, has yet to be undertaken.

As explained above, financial characteristics did not affect service utilization as expected. This result is puzzling, but an explanation can be found in the informal arrangements found in qualitative data. The line between a doctor's visit and a social encounter is blurry. Some Latinos regarded social encounters with a health professional as a visit to the doctor. This also helps explain the lack of effect of income on having seen a doctor. Further research that would ask exactly about the setting and participants in the medical encounter would help clarify this point. Even though informal arrangements were valuable resources in the community, there were many risks involved, some of which could jeopardize the patient's health, including absence of quality standards and the instability of such arrangements. Therefore, these informal resources could not replace equitable health care access.

Being a small, heterogeneous, noncohesive population has implications for health. It decreases available resources to help newcomers cope with stress, build a network, and feel connected. Feelings of isolation can lead to depression and increase risk of mental illnesses. Being a noncohesive community affects health care access in several ways. First, the pool of resources for alternative arrangements is small. Second, those resources are difficult to find. Third, loose organization precludes collective actions in favor of the group.

CONCLUSIONS

Latinos' health care access in SWPA was inequitable. There were differences in health care access by income, and cultural and language factors. Income has a greater impact on potential access, and the impact of culture was greater on realized access.

The greatest problem Latinos in SWPA faced in getting health care is lack of insurance, which might be related to low socioeconomic status, unstable immigration status, and/or low English proficiency. Therefore, the inequalities in health care access stemmed in large part from socioeconomic inequalities that should be addressed. However, even if all had health insurance and no attention was given to cultural issues, there would still be large racial/ethnic disparities in access health care.

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REFERENCES

1. U.S. Department of Health and Human Services: Healthy People 2010: Understanding and Improving Health. 2nd edn. Washington, DC: U.S. Government Printing Office; 2000 (http://www.health.gov/healthypeople)
2. Grieco EM, Cassidy RC: Census 2000 Shows America's Diversity. Washington, DC: U.S. Department of Commerce; 2001 (http://www.census.gov/prod/2001pubs/c2kbr01-1.pdf)
3. Brown ER, Ojeda VD, Wyn R, Levan R: Racial and Ethnic Disparities in Access to Health Insurance and Health Care. Los Angeles, CA: UCLA Center for Health Policy Research; 2000
4. Gray J, Puente S: Introduction to special issue. J Med Syst 1996; 20:229–233
5. Hajat A, Lucas JB, Kington R: Health outcomes among Hispanic subgroups: Data from the National Health Interview Survey, 1992–95. Adv Data 2000; 25:1–14
6. Aday LA, Fleming GV, Andersen R: Access to Medical Care in the U.S.: Who Has It, Who Doesn't. Chicago, IL: Pluribus, University of Chicago, Center for Health Administration Studies; 1984
7. Andersen RM: Revisiting the behavioral model and access to medical care: Does it matter? J Health Soc Behav 1995; 36: 1–10
8. Aday LA, Begley CE, Lairson DA, Slater CA: Evaluating the Medical Care System: Effectiveness, Efficiency and Equity. 2nd edn. Ann Arbor, MI: Health Administration Press; 1998
9. de la Torre A, Friis R, Hunter HR, Ellis BK, Garcia L: The health insurance status of older Latinas: A population at risk. J Border Health 1999; IV:23–30
10. Weissman JS, Epstein AM: Falling Through the Safety Net. Insurance Status and Access to Health Care. Baltimore, MD: Johns Hopkins University Press; 1994
11. Flores G, Abreu M, Olivar MA, Kastner B: Access barriers to health care for Latino children. Arch Pediatr Adolesc Med 1998; 152:1119–1125
12. Fulton JP, Rakowski W, Jones AC: Determinants of breast cancer screening among inner-city Hispanic women in comparison with other inner-city women. Public Health Rep 1995; 110:476–482
13. Halfon N, Wood DL, Burciaga Valdez R, Pereyra M, Duan N: Medicaid enrollment and health services access by Latino children in inner-city Los Angeles. JAMA 1997; 277:636–641
14. Smith MW, Kreutzer RA, Goldman L, Casey-Paal A, Kizer KW: How economic demand influences access to medical care for rural Hispanic children. Med Care 1996; 34:1135–1148
15. Schur CL, Albers LA: Language, sociodemographics, and health care use of Hispanic adults. J Health Care Poor Underserved 1996; 7:140–158
16. Riedel RL: Access to health care: In: Loue S, ed. Handbook of Immigrant Health. New York: Plenum; 1998, 101–123
17. Office of Management and Budget: Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. Washington, DC: U.S. Government Printing Office; 1997 (http://www.whitehouse.gov/omb/edreg/ombdir15.html)
18. U.S. Census Bureau: Definitions of Subject Characteristics. Washington, DC: U.S. Department of Commerce; 1999 (http://www.census.gov/td/stf3/append_b.html)
19. U.S. Census Bureau: Annual Time Series of County Population Estimates by Age, Sex, Race, and Hispanic Origin [Data file]. Washington, DC: U.S. Department of Commerce; 2000 (http://www.census.gov/population/www/estimates/co_casrh.html)
20. U.S. Census Bureau: Basic Facts. Quick Tables [Data file]. Washington, DC: U.S. Department of Commerce; 2001 (http://Online: http://factfinder.census.gov/bf)
21. Fox G: Hispanic Nation: Culture, Politics, and the Construction of Identity. Tucson, AZ: The University of Arizona Press; 1996
22. Howard CA, Samet JM, Buechley RW, Schrag SD, Key CR: Survey research in New Mexico Hispanics: Some methodological issues. Am J Epidemiol 1983; 117:27–34
23. Aday LA, Chiu GY, Andersen R: Methodological issues in health care surveys of the Spanish heritage population. Am J Public Health 1980; 70:367–374
24. Ludwig-Beymer P, Blankemeier JR, Casas-Byots C, Suarez-Balcazar Y: Community assessment in a suburban Hispanic community: A description of method. J Transcult Nurs 1996; 8:19–27
25. Becerra RM, Zambrana RE: Methodological approaches to research on Hispanics. Soc Work Res Abstr 1985; 21:42–49
26. Scheaffer RL, Mendenhall W, III, Ott RL: Elementary Survey Sampling. 5th edn. Belmont, CA: Duxbury, Wadsworth; 1996
27. Marin G, van Oss Marin B, Perez-Stable E: Feasibility of a telephone survey to study a minority community: Hispanics in San Francisco. Am J Public Health 1990; 80:323–326
28. Sonis J: Association between duration of residence and access to ambulatory care among Caribbean immigrant adolescents. Am J Public Health 1998; 88:964–966
29. Palacios C, Sheps S: A pilot study assessing the health status of the Hispanic American community living in Vancouver. Can J Public Health 1992; 85:346–349
30. Krosnick JA: Survey research [Review]. Annu Rev Psychol 1999; 50:537–567
31. Lipton R, Losey L, Giachello AL, Corral M, Girotti MH, Mendez JJ : Factors affecting diabetes treatment and patient education among Latinos: Results of a preliminary study in Chicago. J Med Syst 1996; 20:267–276
32. Diaz T, Klevens M: The supplement to HIV and AIDS Surveillance Project Group. Differences by ancestry in

sociodemographics and risk behaviors among Latinos with AIDS. Ethn Dis 1997; 7:200–206

33. Marin G, van Oss Marin B: Research With Hispanic Populations. Newbury Park, CA: Sage; 1991
34. Sherraden MS, Barrera RE: Qualitative research with an understudied population: In-depth interviews with women of Mexican descent. J Health Care Poor Underserved 1995; 17:452–470
35. Giachello AL: Health outcomes research on Hispanic/Latinos. J Med Syst 1996; 20:235–254
36. Aday LA: Designing and Conducting Health Surveys. 2nd edn. San Francisco, CA: Jossey-Bass, 1996
37. Korn EL, Graubad BI: Sample weights and imputation: In: Analysis of Health Surveys. New York: Wiley; 1999, 159–191
38. Hammersley M, Atkinson P: Ethnography. Principles in Practice. 2nd edn. London: Routledge; 1995
39. Weiss RS: Respondents: Choosing them and recruiting them: In: Anonymous, Learning From Strangers: The Art and Method of Qualitative Interview Studies. New York: Free Press; 1994, 15–37
40. Marin G, Sabogal F, van Oss Marin B, Otero-Sabogal R, Perez-Stable E: Development of a short acculturation scale for Hispanics. Hisp J Behav Sci 1987; 9:183–205
41. Thamer M, Richard C, Casebeer AW, Ray NF: Health insurance coverage among foreign-born US residents: The impact of race, ethnicity, and length of residence. Am J Public Health 1997; 87:96–102
42. Ware JE, Kosinski M, Keller SD: SF-12: How to Score the SF-12 Physical and Mental Health Summary Scales. 2nd edn. Boston, MA: The Health Institute, New England Medical Center; 1995
43. Health Resources and Services Administration (HRSA), Office of Minority Health: Health Care RX: Access for All. The President's Initiative on Race. Barriers to Health Care for Racial and Ethnic Minorities: Access, Workforce Diversity and Cultural Competence. Washington, D.C.: U.S. Department of Health and Human Services; 1999 (http://www.whitehouse.gov/initiatives/OneAmerica/america.html)
44. Davidson PL, Andersen RM, Marcus M, Atchison KA, Reifel N, Nakazono T, Rana H: Indicators of oral health in diverse ethnic and age groups: Findings from the International Collaborative Study of Oral Health Outcomes (ICS-II) USA research locations. J Med Syst 1996; 20:295–316
45. Hosmer DW, Lemeshaw S: Applied Logistic Regression. New York: Wiley; 1989
46. Kraut AM: Healers and strangers. Immigrant attitudes toward the physician in America. A relationship in historical perspective. JAMA 1990; 263:1807–1811
47. Schulman KA, Berlin JA, Harless W, Ferner JF, Sistrun K, Gersh BJ, Phil D, Dubé R, Taleghani CK, Burke JE, Williams S, Eisenberg JM, Escarce JJ: The effect of race and sex on physicians' recommendations for cardiac catheterization. N Engl J Med 1999; 340:618–626
48. McDermott M, Silva J, Rydman R, Giachello AL, Yarzagaray E, Robinson D, Peragallo N, Barquero H, Arrom JO: Practice variations in treating urban minority asthmatics in Chicago. J Med Syst 1996; 20:255–266
49. Friedl J: Health Care Services and the Appalachian Migrant. Columbus, OH: Ohio State University; 1978
50. Moore RD, Stanton D, Gopalan R, Chaisson RE: Racial differences in the use of drug therapy for HIV disease in an urban community. N Engl J Med 1994; 330:763–768