Linguistic Disparities in Health Care Access and Health Status Among Older Adults

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BACKGROUND: English proficiency may be important in explaining disparities in health and health care access among older adults.

SUBJECTS: Population-based representative sample (*N*=18,659) of adults age 55 and older from the 2001 California Health Interview Survey.

METHODS: We examined whether health care access and health status vary among older adults who have limited English proficiency (LEP), who are proficient in English but also speak another language at home (EP), and who speak English only (EO). Weighted bivariate and multivariate survey logit analyses were conducted to examine the role of language ability on 2 aspects of access to care (not having a usual source of care, delays in getting care) and 2 indicators of health status (self-rated general health and emotional health).

RESULTS: Limited-English proficient adults were significantly worse off (1.68 to 2.49 times higher risk) than EO older adults in 3 of our 4 measures of access to care and health status. Limited-English proficient older adults had significantly worse access to care and health status than EP older adults except delays in care. English proficient adults had 52% increased risk of reporting poorer emotional health compared with EO speakers.

CONCLUSIONS: Provision of language assistance services to patients and training of providers in cultural competence are 2 means by which health care systems could reduce linguistic barriers, improve access to care, and ultimately improve health status for these vulnerable populations.

KEY WORDS: health status; health care access; disparities; older adults; immigrants.

Language problems are 1 of biggest challenges facing immigrants to the United States. Language barriers can impede access to health care,[1–4] lower the quality of care,[5–7] and result in dissatisfaction with care.[8–10] However, most studies on language barriers focus on children and adults in their child-rearing years. Much less is known about older adults who may be especially vulnerable to adverse health outcomes resulting from language problems in health care access.

There is also a paucity of studies that distinguish the gradations of English proficiency and its effect on health status and health care access. If gaining proficiency in English is viewed as an enabling characteristic as conceptualized in the Andersen Behavioral Model of health care access,[11] then older adults who speak English well and very well are likely to have better health care access and better health than those who speak English not well or not at all. Additionally, the degree of English proficiency has been shown to be a dominant component of acculturation into the U.S. society.[12] And, although acculturation may bring about socioeconomic mobility and improved health care navigational skills, Berry et al.[13] have hypothesized that acculturation may lead to stressors of feelings of marginality and alienation that result in the reduction of health status of individuals. Although acculturation with its complex qualitative dimensions is not the focus of our study on language barriers, it is clearly intertwined with conceptualizing the relationship of English language ability with access to health care and health status.

Our approach in identifying linguistic disparities is to study language usage among individuals who speak another language at home and differentiate between those who are limited-English proficient (LEP) from those who are English proficient (EP) speakers; we then compare these 2 groups with English only (EO) speakers. If EP adults fare comparably with EO adults and appreciably better than LEP adults in health care access and health, then linguistic barriers are a major driver of disparities that need to be enabled by system changes to improve access for LEP adults.[11] However, if another source of disparity is acculturative stress, then EP individuals could very well face similar barriers experienced by LEP individuals that cannot be addressed solely by language access efforts. This distinction is important in guiding providers to better understand the role of English proficiency in the well-being of their older adult patients so that they can direct the linguistic and cultural bridging resources needed to deliver care.

METHODS

Data Source

Our study population of noninstitutionalized older adults, age 55 and older, is derived from the 2001 California Health Interview Survey (CHIS 2001). The CHIS 2001 is a multistage sample: households were randomly selected from 41 county and county-group strata, and then within a sampled household, an adult was randomly selected for interview.[14] Proxy interviews, conducted with another household member for 316 of the frail elderly in the sample, were included in the sample.[15] The overall response rate was 38%, yielding a sample of over 55,000 adults, in which over 18,000 are age 55 and older. This response rate is similar to other state telephone surveys such as California's Behavioral Risk Factor Survey.[16]

We analyzed the public use data file released in February 2005 and survey weights provided by UCLA Center for Health Policy Research. This release contains the incorporation of the Asian oversample with the main random sample, which was not available in earlier releases. The sample was weighted to the California Department of Finance estimates of the 2001 Census population with adjustments for nonresidential sta-

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tus, nontelephone households, screener nonresponse rates, and multiple telephone households.[17]

Conducted in English, Spanish, Cantonese, Mandarin, Korean, Vietnamese, and Khmer, the survey captures the language needs of Latino and most Asian populations, the predominant immigrant groups in California and in the United States. The questionnaire underwent extensive cultural adaptation for Latino and Asian groups, and refereed translation processes to maximize cross-cultural equivalence across questionnaire items.[18]

Dependent Variables

We examined 2 aspects of access to care (not having a usual source of care, delays in getting care) and 2 indicators of health status (self-rated general health and emotional health).

We evaluated having a usual source of care (no usual source vs yes or more than 1) from the question, "Is there a place that you usually go to when you are sick or need advice about your health?" We also examined delayed care (yes vs no), represented by the question, "During the past 12 months, did you delay or not get any other medical care you felt you needed—such as seeing a doctor, a specialist, or other health professional?

Our measure of general health was based on the question, "In general, would you say your health is excellent, very good, good, fair, or poor?" Because our aim is to detect how language might modify self reports of low threshold levels of health status, we dichotomized the multi-category general health question as the proportion of older adults reporting "fair" to "poor" health compared with good, very good, or excellent. Similarly, emotional health status was assessed from the question, "Did you feel downhearted and sad (all of the time, most of the time, some of the time, a little of the time, or not at all)?" This item has been shown to perform the best among the 5-item Mental Health Inventories as a screen for depressive symptoms.[19,20] Similar to the general health item, we dichotomized the responses to "all of the time" or "most of the time" compared with "a little of the time," or "not at all." Both the general and emotional health measures are part of the SF-36, which has been validated in several populations, including low-income English and Chinese-speaking Chinese Americans, and older English and Spanish-speaking Mexican Americans with little formal education.[21,22]

Independent Variables

Information was derived from the question on languages spoken at home and a 4-point scale on self-rated English proficiency (not at all, not well, well, or very well) to construct a 3-level language ability variable: (1) LEP in which the individual reported speaking English not well or not at all; (2) EP in which the individual reported to speak English well or very well, but also spoke languages other than English at home; and (3) EO, in which the individual completed the survey in English and reported English as the only language spoken at home.

Using Andersen's Behavioral model as our framework, we conceptualized language ability in health as both a predisposing individual characteristic and enabling system characteristic.[11] English proficiency is an individual predisposing "social structure" characteristic such as occupation and education. Thus, English proficiency is 1 of the "factors that determine the status of a person in the community, his or her ability to cope with presenting problems, and commanding resources to deal with these problems."[11] Because language barriers can be bridged by systems that adopt professional interpretation programs, translated materials and hiring of bilingual workforce, English proficiency can therefore also be viewed as an enabling characteristic at the system-level. Based on this framework, we included individual-level relevant socioeconomic, demographic, and health status characteristics as covariates.[23–28] Our models specified 6 mutually exclusive categories of race/ethnicity (white, Latino, Asian, black or African American, American Indian/Alaska Native, and other single race/multiracial). Briefly, based on a follow-up question on primary race or ethnic identification, multiracial and Latino single-race individuals were assigned to racial/ethnic categories that they identified with most.[29] Other covariates were gender, age, marital status, rural versus urban, determined by the demographic research firm Claritas, household income as a percentage of the 2001 federal poverty guidelines, insurance status, education, and the number of chronic medical conditions, assessed from a set of conditions reported in the survey: asthma, diabetes, cancer, heart disease, and hypertension. We identified other components of acculturation by including immigrant status/citizenship and years lived in the United States.[12,30]

Analysis Plan

Respondents who reported "don't know" or refused to any of the questions related to the construct of each or our dependent variables were dropped from our analysis. The missing observations for all models consisted of no more than 3% of the total observations.

We estimated weighted bivariate and multivariate models to examine the association of our language usage measure with access to care and health status. For the bivariate analyses, 2 sample tests of proportions were used to examine all pair-wise comparisons of each language group. For the multivariate analyses, we fit separate logit models for each dependent variable, with adjusted standard errors to account for the complex survey design of CHIS. For both of the access to care models, in addition to the covariates described, we included self-rated general health. For delayed care, we also included no usual source of care in our set of predictors. We computed relative risks of the LEP and EP groups compared with the EO group,[31] and evaluated differences in effects between the LEP and EP groups using the adjusted Wald test. Data management and analyses were performed using STATA 9.0 software (College Station, TX). All statistical significance was evaluated using 0.05 level 2-sided tests where appropriate.

RESULTS

Sample Characteristics

Among older adults in California, 7% ($n=1,242$) were LEP, and 13% ($n=2,452$) were EP (Table 1). While Latinos and Asians comprised less than 22% of all older adults, they comprised more than 90% of individuals who were LEP and nearly half of those who were EP. Interestingly, whites comprised the largest racial group (42%) among EP speakers, and most of this group consisted of U.S.-born whites with European heritage or immigrants from Europe (data not shown). Across all language

Table 1. Characteristics of Older Adults ages 55 Y or Older in California, 2001 by English Proficiency, California

Characteristics	Weighted %*			
	LEP (n = 1,242)	EP (n = 2,452)	English Only (n = 14,965)	Total (n = 18,659)
Race/ethnicity				
Latino	54	23	2	11
Asian	37	26	2	10
Black	<1	2	8	6
American Indian/	<1	1	1	1
Alaska native				
Other single race/	3	6	2	2
multiracial				
White	7	42	86	69
Gender				
Female	56	53	55	55
Age				
55 to 64	47	48	42	43
65 to 74	34	32	29	30
75 to 84	14	16	23	21
85+	5	4	6	6
Marital status				
Never married	37	37	40	39
Urban/rural				
Rural	8	10	17	15
Citizenship status				
Noncitizen	38	9	1	7
Years lived in the United States				
⩾5	6	1	<1	1
5 to 14	26	5	<1	4
⩾15	66	43	5	19
Nonimmigrant	6	52	94	77
Educational attainment				
No high school degree	70	22	14	22
Family income as % of poverty level (FPL)				
< =100% FPL	44	12	8	13
100% to 199% FPL	34	27	20	23
200% to 299% FPL	9	17	16	16
300%+FPL	12	45	55	48
Insurance status				
Uninsured	20	6	3	6
Number of chronic conditions				
0	33	35	30	31
1	40	36	37	38
2	19	21	23	22
3	7	7	8	8
4	1	1	1	1
5	<1	<1	<1	<1

Source: 2001 California Health Interview Survey.
Total proportions may not add up to 100% because of rounding.
Weighted to California Department of Finance 2001 estimates of California's 55 and older population.
LEP, Limited-English proficient; EP, English-proficient.

cohorts, older adults were predominantly female, between the ages of 55 and 64 years, and lived in urban areas. However, there were also lower proportions of LEP (8%) and EP (10%) older adults who were rural dwelling compared with the EO group (17%). Over 93% of California's older adults were U.S. citizens compared with approximately 60% of LEP individuals. Higher proportions of LEP older adults were socio-economically disadvantaged: most lacked a high school degree (70%), nearly half were at or below poverty (44%), and 20% were uninsured. English-Proficient older adults were generally in the "middle" socioeconomic position between the LEP and EO speakers.

Bivariate Associations of Language Measures with Access to Care and Health Status

Limited-English Proficient older adults had significantly higher proportions that lacked a usual source of care and reported poorer general and emotional health status than older adults who speak EO (Table 2). The proportions of EP older adults who lacked a usual source of care and reported poorer general and emotional status were statistically lower than LEP, but also statistically higher than EO older adults.

Multivariate Analysis of the Relationships of Language with Access to Care and Health Status

After adjusting for covariates, LEP still had significantly worse access to care and health status for 3 of the 4 dependent variables (Table 3). Limited-English Proficient older adults were 1.86 times more likely to lack a usual source of care than EO speakers. Although LEP older adults had a 41% increased risk of delaying any medical care, this did not reach statistical significance.

Limited-English Proficient older adults had 68% increased risk of being in fair or poor health compared with EO speakers. The disparity was even greater in emotional health: LEP older adults had more than double the risk of feeling sad all or most of the time than EO speakers.

English-Proficient speakers had comparable access to care and general health status compared with EO speakers and were generally better off than LEP individuals except for delayed care, where they had statistically equivalent risks (Table 3). However, both LEP and EP adults had a statistically higher risk of reporting poorer emotional health compared with EO speakers. English-Proficient and LEP older adults had respectively 1.5 to 2.5 times the risk of feeling sad all or most of the time compared with EO speakers.

DISCUSSION

Our findings indicate the language disadvantage of LEP older adults that need to be prioritized, specifically in ensuring the regularity of care. This is particularly important for LEP older adults, given that they report poorer general and emotional health. This finding adheres to Andersen's conceptualization that system enablers in health care could address the barriers faced by LEP older adults.

We further hypothesized that older adults that were proficient in English and at least 1 other language merit a separate examination as a language group distinct from LEP older adults and those who speak EO. Conventional analyses that dichotomize LEP from EP older adults may highlight only language-based disparities resulting in overlooked barriers that may be faced by immigrants who are EP. Indeed, our study revealed that EP older adults experienced a 53% elevated risk of poor emotional health compared with EO speakers. Although their English language ability attenuated this risk compared with their counterparts who speak no or limited English, it did not erase the disparity in emotional health.

Poorer emotional health reported by both LEP and EP older adults is consistent with Berry's acculturative stress hypothesis and supported by empirical studies that have linked depression among immigrants to the difficulty they experience in adapting to American society.[13,32] Recent studies focusing on Asian elderly suggest that they may actually be at

Table 2. Bivariate Association of Language Measures with Health Status and Health Care Access by Language Ability, California Health Interview Survey 2001, Adults, Age 55 and Older

Dependent Variables	*N*	Unadjusted Proportions (%)*			
	LEP/EP/English Only	LEP	EP	English Only	All Elderly
Health access					
Did not have a usual source of care *(vs no usual source of care)*	1,242/2,452/14,965	14[a]	5[b]	4[c]	5
Delayed care *(vs no delayed care)*	1,227/2,408/14,671	8[a]	7[a]	8[a]	8
Health status					
Reported fair or poor health status *(vs good/very good/excellent)*	1,240/2,444/14,946	58[a]	24[b]	21[c]	26
Felt sad all or most of the time *(vs some of the time, a little of the time, or not at all)*	1,238/2,442/14,920	12[a]	5[b]	3[c]	4

Source: 2001 California Health Interview Survey.
*Weighted to California Department of Finance 2001 estimates of California's 55 and older population.
[a–c]For each dependent variable, values with the same letter do not differ significantly from each other using 2-sample test of proportion evaluated at P<.05.
LEP, Limited-English proficient; EP, English-proficient.

higher risk for depression than previously reported.[33,34] Our finding is also consistent with a study on older Mexican-American adults that found that immigrant and bicultural Mexican Americans, had greater rates of depressive symptoms than U.S.-born Mexicans.[35]

It is interesting that EP individuals reported worse emotional health than EO speakers but did not report worse general health. Traumatic political and persecution events that have led to influxes of refugees and immigrants to the United States may profoundly affect the immigrant emotionally. Chronic worries over legal status among undocumented immigrants may also manifest in reports of poor emotional health. In addition, some researchers have posited that the acculturation process increases an adult's awareness of their emotions and life stressors so that worse self-reports of health may shift from a physical component to an emotional one.[36,37] Increased awareness of emotional well-being may also be man-

ifested by the EP whites in our sample, who comprised over 40% of the EP group with a considerable segment who were born in the United States and its territories. Thus, EP whites may drive the significant EP effects we found for emotional health. However, in comparing predicted rates of feeling sad all or most of the time by racial/ethnic group among EP adults, we found that the rates for whites (5%) did not statistically differ from the rates for Latinos (4%) and Asians (5%) (analysis not shown). Others have attributed the unique difficulties from being in situations that straddle 2 cultures, for example EP older adults may live in neighborhoods with less concentrated new immigrant communities so that they are less connected to these communities' social networks that may bestow supportive environments.[38] Another possible distinguishing characteristic of EP adults is that they may have had a higher socioeconomic status (SES) in their home countries and then experienced a decline in social class and occupational status

Table 3. Adjusted Relative Risks of Health Status, Access and Utilization Measures by Language Ability, California Health Interview Survey 2001, Adults, Age 55 and Older

Dependent Variable	LEP vs English Only*				EP vs English Only*				LEP vs EP
	Baseline Rate[†] (%)	Adjusted Relative Risk[‡]	95% CI	*P* Value	Baseline Rate[†] (%)	Adjusted Relative Risk[‡]	95% CI	*P* Value	*P* Value[§]
Health access									
Did not have a usual source of care *(vs have usual source of care)*	3.9	1.86	(1.05, 3.17)	.033	3.9	1.16	(0.77, 1.75)	.465	.048
Delayed any care *(vs no delayed care)*	10.4	1.41	(0.94, 2.06)	.103	10.4	1.16	(0.93, 1.42)	.167	.320
Health status									
Reported fair or poor health status *(vs good/very good/excellent)*	23.0	1.68	(1.37, 2.02)	<.001	23.0	1.03	(0.90, 1.17)	.706	<.001
Felt sad all or most of the time *(vs some of the time, a little of the time, or not at all)*	3.5	2.49	(1.49, 4.06)	<.001	3.5	1.53	(1.15, 2.04)	.004	.032

Source: 2001 California Health Interview Survey.
*Weighted to California Department of Finance 2001 estimates of California's 55 and older population.
[†]Baseline rate is the probability of reporting each dependent variable=1 for the English only group, setting all other characteristics at mean values.
[‡]Adjusted for race/ethnicity (Latino, Asian, black, American Indian/Alaska Native, other/multiracial, white [referent]); insurance status (uninsured vs insured); gender (female vs male); marital status (married vs widowed, divorced, separated); family income as % federal poverty level (≤ 100% FPL, 100% to 199% FPL, 200 to 299% FPL vs ≥ 300% FPL); citizenship status (noncitizen, citizen [referent]); years lived in the United States (<5 y, 5 to 14 y, >15 y vs U.S.-born); education (no high school degree vs high school degree); age (5 categories); urban vs rural; number of chronic conditions (6 categories). For models predicting no usual source of care, additional covariates included self-rated health (5 categories). For models predicting delayed care, additional covariates included self-rated health (5 categories) and no usual source of care.
[§]Adjusted Wald test H$_o$: b$_{LEP}$=b$_{EP}$.
LEP, Limited-English proficient; EP, English-proficient, FPL, Family income as % of poverty level.

after immigrating to the United States. Hence, the immigration experience may have deflated their individual self-worth, resulting in an increase in depressive symptoms. Investigations that focus on the mental health of immigrant older adults should consider the unique experiences of EP adults that have typically been absent in past investigations on language. The fact that a large number of EP adults consisted of whites with European heritage also suggests that such investigations should consider other cultures in addition to Asian and Latino.

The study had several limitations. Foremost is that our measure of language ability are self-reports and thus may not fully capture language-related effectiveness in assimilating consumer information, navigating a health care system or communicating with a physician. However, as we focused on access to health care and self-rated health status, which presumably are not directly governed by a health care provider interaction, the conventional assessments on self-reported English proficiency and primary language may be sufficient. Although the survey was conducted in English, Spanish, Cantonese, Mandarin, Vietnamese, Khmer, and Korean, LEP individuals who do not speak these languages were excluded from the survey; but in total, these languages, were spoken by over 90% of California's population.[39] Few studies have used and advocated for a single item measure of self-rated emotional health similar to the single-item measure of general health,[40,41] but greater confidence in the findings would be possible if multiple item measures yielded similar results. Moreover, there has been no direct validation of the use of our single-item emotional health measure across different levels of English proficiency. However, there have been several relevant validation studies of the SF-36, which contains the emotional health item, among low-income nonEnglish speaking Mexican Americans and Chinese Americans.[20,21] Finally, CHIS 2001 was a telephone survey, systematically excluding households without telephones, but the bias is minimal because fewer than 2% of California's occupied households were without telephone service in 2000.[42] Limited-English Proficient older adults, however, may be overrepresented in the telephone exclusion, as well as in the overall refusal rates. Nonetheless, inclusion of these left-out groups, were it possible, is likely to increase the magnitude or precision of our disparate findings by English fluency because immigrants without phones are more likely to report worse access and health status.

Health systems must be poised to address the current and future language needs of a growing population of older adult immigrants.[43] Provision of language assistance services to patients and training of providers in cultural competence are 2 means by which health care systems could reduce linguistic barriers, improve access to care, and ultimately improve health status for these vulnerable populations.

REFERENCES

1. **Woloshin S, Schwartz L, Katz S, Welch H.** Is language a barrier to the use of preventive services? J Gen Intern Med. 1997;12:472–7.
2. **Timmins C.** The impact of language barriers on the health care of Latinos in the United States: a review of the literature and guidelines for practice. J Midwifery Womens Health. 2002;47:80–96.
3. **Flores G, Abreu M, Olivar MA, Kastner B.** Access barriers to health care for Latino children. Arch Pediatr Adolesc Med. 1998;152:1119–25.
4. **Jacobs EA, Karavolos K, Rathouz PJ, Ferris TG, Powell LH.** Limited English proficiency and breast and cervical cancer screening in a multiethnic population. Am J Public Health. 2005;95:1410–6.
5. **Ngo-Metzger Q, Massagli M, Clarridge B**, **et al**. Linguistic and cultural barriers to care. J Gen Intern Med. 2003;18:44–52.
6. **Seid MSG, Varni JW.** Parents' perceptions of pediatric primary care quality: effects of race/ethnicity, language, and access. Health Serv Res. 2003;38:1009–31.
7. **Sarver J, Baker DW.** Effect of language barriers on follow-up appointments after an emergency department visit. J Gen Intern Med. 2000;15:256–64.
8. **Morales L, Cunningham W, Brown J, Liu H, Hays R.** Are Latinos less satisfied with communication by health care providers? J Gen Intern Med. 1999;14:409–17.
9. **Weech-Maldonado R, Morales L, Elliott M, et al.** Race/ethnicity, language, and patients' assessments of care in medicaid managed care. Health Serv Res. 2003;38:789–808.
10. **Carrasquillo O, Orav EJ, Brennan TA, Burstin HR.** Impact of language barriers on patient satisfaction in an emergency department. J Gen Intern Med. 1999;14:82–7.
11. **Andersen RA.** Revisiting the behavioral model and access to medical care: does it matter? J Health Soc Behav. 1995;36:1–10.
12. **Lara M, Gamboa C, Kahramanian MI, Morales LS, Bautista DE.** Acculturation and Latino health in the United States: a review of the literature and its sociopolitical context. Annu Rev Public Health. 2005;26:367–97.
13. **Berry JW, Kim U, Minde T, Mok D.** Comparative studies of acculturative stress. Intern Migr Rev. 1987;21:491–511.
14. **California Health Interview Survey.** CHIS 2001 Methodology Series: Report 1—Sample Design. Los Angeles, CA: UCLA Center for Health Policy Research; 2002.
15. **California Health Interview Survey.** CHIS 2001 Methodology Series: Report 2—Data Collection Methods. Los Angeles, CA: UCLA Center for Health Policy Research; 2002.
16. **California Health Interview Survey.** CHIS 2001 Methodology Series: Report 4—Response Rates. Los Angeles, CA: UCLA Center for Health Policy Research; 2002.
17. **California Health Interview Survey.** Revised CHIS 2001 Weights. Los Angeles, CA: UCLA Center for Health Policy Research; 2005.
18. **Ponce NA, Lavarreda SA, Yen W, Brown ER, DiSogra C, Satter D.** Translation methodology in the California health interview survey: challenges in language translation for a major survey. Public Health Rep. 2004;119:1–18.
19. **Berwick DM, Murphy JM, Goldman PA, Ware JE Jr, Barsky AJ, Weinstein MC.** Performance of a five-item mental health-screening test. Med Care. 1991;29:169–76.
20. **Yamazaki S, Shunchi F, Green J.** Usefulness of five-item and three-item mental health inventories screen for depressive symptoms in the general population of Japan. Health Qual Life Outcomes. 2005;3:48.
21. **Lubetkin EI, Jia H, Gold MR.** Med Care. Use of the SF-36 in low-income Chinese American primary care patients. 2003;41:447–57.
22. **Bennett JA, Riegel B.** United States Spanish short-form-36 health survey: scaling assumptions and reliability in elderly community-dwelling Mexican Americans. Nurs Res. 2003;52:262–9.
23. **Cornelius LJ.** The degree of usual provider continuity for African and Latino Americans. J Health Care Poor Underserved. 1997;8:170–85.
24. **Cunningham W, Hays R, Burton T, Kington R.** Health status measurement performance and health status differences by age, ethnicity, and gender: assessment in the medical outcomes study. J Health Care Poor Underserved. 2000;11:58–76.
25. **David R, Rhee M.** The impact of language as a barrier to effective health care in an underserved urban Hispanic community. Mount Sinai J Med. 1998;65:393–7.

26. **Jenkins CN, Le T, McPhee SJ, Stewart S, Ha NT.** Health care access and preventive care among Vietnamese immigrants: do traditional beliefs and practices pose barriers? Soc Sci Med. 1996;43:1049–56.

27. **Levkoff S, Cleary P, Wetle T.** Differences in the appraisal of health between aged and middle-aged adults. J Gerontol. 1987;42:114–20.

28. **Pourat N, Lubben J, Yu H, Wallace S.** Perceptions of health and use of ambulatory care: differences between Korean and white elderly. J Aging Health. 2000;12:112–34.

29. **California Health Interview Survey.** CHIS 2001 Methodology Series: Report 3 - Data Processing Procedures. Los Angeles, CA: UCLA Center for Health Policy Research; 2002.

30. **Cuellar I, Arnold B, Maldonado RE.** The acculturation rating scale for Mexican Americans-II: a revision of the original ARSMA scale. Hispanic J Behav Sci. 1995;17:275–304.

31. **Zhang J, Yu KF.** What's the relative risk? A method of correcting the odds ratio in cohort studies of common outcomes. JAMA. 1998;280:1690–1.

32. **Vega WA, Kolody B, Aguilar-Gaxiola S, Alderete E, Catalano R, Caraveo-Anduaga J.** Lifetime prevalence of DSM-III-R psychiatric disorders among urban and rural Mexican Americans in California. Arch Gen Psychiatry. 1998;55:771–8.

33. **Takeuchi DT, Chung RC-Y, Lin K-M, et al.** Lifetime and twelve-month prevalence rates of major depressive episodes and dysthymia among Chinese Americans in Los Angeles. Am J Psychiatry. 1998;155:1407–14.

34. **Yeung ACR, Mischoulon D, Sonawalla S, Wong E, Nierenberg AA, Fava M.** Prevalence of major depressive disorder among Chinese-Americans in primary care. Gen Hosp Psychiatry. 2004;26:24–30.

35. **Gonzalez HM, Haan MN, Hinton L.** Acculturation and the prevalence of depression in older Mexican Americans: baseline results of the Sacramento area Latino study on aging. J Am Geriatr Soc. 2001;49:948–53.

36. **Chen H, Guarnaccia P, Chung H.** Self-attention as a mediator of cultural influences on depression. Int J Soc Psychiatry. 2003;3.

37. **Uppaluri C, Schumm L, Lauderdale D.** Self-reports of stress in Asian immigrants: effects of ethnicity and acculturation. Ethn Dis. 2001;1:107–14.

38. **Burr JA, Mutchler JE.** English language skills, ethnic concentration, and household composition: older Mexican immigrants. J Gerontol B Psychol Sci Soc Sci. 2003;58:S83–92.

39. **US Census Bureau.** California—ability to speak English by language spoken at home for the population 5 years and over: 2000. Available at http://www.census.gov/population/cen2000/phc-t37/tab06a.pdf. Accessed August 10, 2005.

40. **Rohrer J.** Medical care usage and self-rated mental health. BMC Public Health. 2004;4:3.

41. **Bures R.** Childhood residential stability and health at midlife. Am J Public Health. 2003;93:1144–8.

42. **US Census Bureau.** Tm-h015. Percent of occupied housing units without telephone in service: 2000 universe: Occupied housing units. Available at: http://factfinder.census.gov. Accessed August 9, 2005.

43. **Schmidley D.** The Foreign-Born Population in the United States, March 2002, Current population reports p-20–539, Washington, DC, US Census Bureau, 2003.