

Acculturation and Leisure-Time Physical Inactivity in Mexican American Adults: Results From NHANES III, 1988–1994

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Physical inactivity is a major risk factor for heart disease and other chronic diseases that disproportionately affect Hispanics.^{1–4} Mexican Americans are the largest subgroup of Hispanics and have a higher prevalence of physical inactivity during leisure time than non-Hispanic Whites.³ This difference persists even after socioeconomic status is controlled for.⁵ Although Hispanics engage in more occupational physical activity than non-Hispanic Whites, leisure-time inactivity has been found to be higher among Mexican Americans who are blue-collar workers than among non-Hispanic Whites who are blue-collar workers.^{5,6} Other sociocultural factors may be influencing this health behavior.

Acculturation, the merging of cultures as a result of prolonged contact, may influence health practices.^{7,8} Among Hispanics in the United States, measures of acculturation include a combination of language preference, place of birth, and the language ability and place of birth of parents.^{9–14} Patterns of alcohol abuse, tobacco use, eating disorders, and unhealthy dietary practices are stronger among Mexican Americans who are more acculturated than among those less acculturated.^{9–12} Little is known about the impact of acculturation on participation in leisure-time physical activity. The purpose of this report is to examine the relationship between acculturation and the prevalence of physical inactivity during leisure time among Mexican Americans.

METHODS

The Third National Health and Nutrition Examination Survey (NHANES III) was conducted by the National Center for Health Statistics, Centers for Disease Control and Prevention. The *Plan and Operation of the*

Objectives. This study examined the relationship between acculturation and leisure-time physical inactivity among Mexican American adults.

Methods. Using data from the Third National Health and Nutrition Examination Survey, we estimated the prevalence of physical inactivity according to place of birth and language used at home.

Results. Spanish-speaking Mexican Americans had a higher prevalence of physical inactivity during leisure time than those who spoke mostly English, independent of place of birth.

Conclusions. Acculturation seems to be positively associated with participation in leisure-time physical activity. (*Am J Public Health.* 2001;91:1254–1257)

Third National Health and Nutrition Examination Survey describes the procedures used.¹⁵ Briefly, NHANES III is a multistage stratified survey of the civilian noninstitutionalized population of the United States aged 2 months and older; it was conducted between 1988 and 1994 and oversampled Mexican Americans and Blacks.

The household adult questionnaire was administered by trained bilingual interviewers to obtain information on 8 specific leisure-time physical activities during the past month. Four open-ended questions assessed information on physical activities not previously listed. Participants who responded no to all the physical activity questions, including the 4 open-ended questions, were classified as persons who are physically inactive during leisure time.

Participants were asked about language preferences at home and also about their place of birth and how many years they had lived in the United States. This information was used to stratify participants by place of birth (Mexico or the United States) and language preference at home (“English,” “Both Spanish and English,” and “Spanish”).

Statistical analyses, carried out with SAS (SAS Institute, Inc, Cary, NC) and SUDAAN (Research Triangle Institute, Research Triangle Park, NC), incorporated the sampling weights and the complex sample design. Sample weights were used to correct for dif-

ferential selection probabilities and to adjust for noncoverage and nonresponse. We used PROC DESCRIPT, RLOGIST, and REGRESS from SAS-callable SUDAAN.¹⁶

RESULTS

Table 1 describes the distribution of participants by age, education, income, occupation, place of birth, years living in the United States, and preferred language at home, and shows the unadjusted prevalence of physical inactivity during leisure time. Leisure-time inactivity was highest among older persons, those with less than 12 years of education, and those who earned less than \$20 000 per year. White-collar workers were more active during leisure time than blue-collar workers, those who were retired, and homemakers.

Figure 1 shows that Mexican American women had a higher prevalence of physical inactivity than Mexican American men even after age, education, and income were adjusted for. Inactivity was lower among those who spoke mostly English than among non-English speakers for both men and women. Similarly, men and women born in Mexico had a higher prevalence of physical inactivity than US-born Mexican American men and women.

Table 2 shows that those who were less acculturated (Spanish speakers and Spanish

TABLE 1—Descriptive Demographics and Unadjusted Prevalence (per 100) of Leisure-Time Physical Inactivity Among Mexican Americans 20 Years and Older, 1988–1994: Third National Health and Nutrition Examination Survey

	Men			Women		
	n	%	Prevalence (SE)	n	%	Prevalence (SE)
Age, y						
20–39	1265	51	27 (2.0)	1261	52	46 (1.6)
40–59	593	24	32 (2.5)	596	25	42 (2.3)
≥60	609	25	43 (2.6)	569	24	56 (2.6)
Education, y						
<12	1579	65	39 (1.7)	1487	62	59 (1.5)
12	466	19	19 (3.6)	557	23	33 (1.9)
>12	387	16	12 (1.7)	355	15	20 (13.2)
Income, \$						
<20 000	1139	48	38 (1.9)	1183	51	51 (1.4)
20 000–34 999	530	22	21 (2.6)	478	20	41 (4.0)
≥35 000	708	30	23 (2.7)	676	29	34 (2.1)
Occupation						
White-collar professional	216	9	14 (2.7)	188	8	24 (3.4)
White-collar nonprofessional	170	7	14 (3.8)	361	15	29 (1.9)
Blue-collar	1292	53	30 (2.1)	484	20	50 (3.6)
Retired	400	16	44 (2.2)	192	8	62 (4.7)
Homemaker	53	2	48 (7.6)	985	41	53 (2.0)
Other	336	14	38 (3.9)	216	9	47 (3.7)
Place of birth						
Mexico	1138	50	35 (2.8)	1025	45	58 (1.7)
United States	1134	50	20 (1.5)	1255	55	32 (1.8)
Years in United States						
<5	372	16	37 (5.1)	378	17	59 (2.8)
5–9	195	9	32 (5.3)	143	6	64 (5.3)
10–19	309	14	34 (2.2)	271	12	59 (3.4)
≥20	262	12	36 (4.7)	233	10	49 (2.7)
Preferred language						
English	781	32	15 (1.6)	867	36	28 (1.6)
Spanish	1576	64	38 (1.9)	1430	60	58 (1.6)
Both English and Spanish	96	4	29 (5.1)	108	4	47 (4.1)
Total	2467	100	29 (1.7)	2426	100	46 (1.4)

and English speakers, as well as those born in Mexico and living in the United States for less than 5 years) were more likely to be inactive during leisure time than more acculturated Mexican Americans, after age, education, income, birthplace, years living in the United States, and language were controlled for. Occupation was not a significant predictor in the model.

DISCUSSION

We found the prevalence of physical inactivity during leisure time among Mexican Americans to be higher than the prevalence observed in the general population. This difference is mostly accounted for by the higher prevalence observed among those whose main language is Spanish (38% for

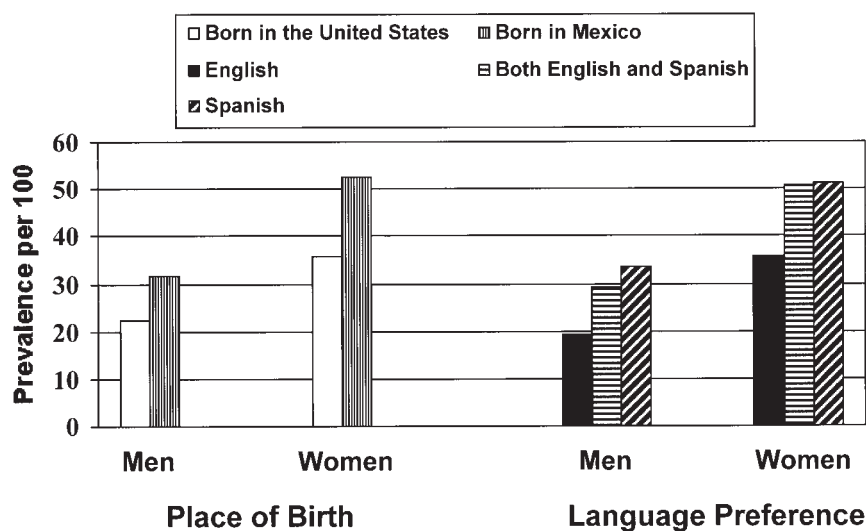
TABLE 2—Multivariate Logistic Regression For Acculturation and Leisure-Time Physical Inactivity Among Mexican American Adults 20 Years and Older: Third National Health and Nutrition Examination Survey

	OR	95% CI
Preferred language		
at home		
English	1.0	(Reference)
Spanish	1.5	1.1, 2.0
Both English and Spanish	1.8	1.3, 2.5
Years in United States		
<5	1.7	1.3, 2.4
5–9	1.4	0.9, 2.4
10–19	1.5	1.1, 2.0
≥20	1.3	0.9, 1.7
Born in United States	1.0	(Reference)

Note. OR = odds ratio; CI = confidence interval. ORs are adjusted for age in years (20–39, 40–59, ≥60), sex (male/female), education (<12, 12, >12 years), and income (<\$20 000, \$20 000–\$34 999, ≥\$35 000).

men and 58% for women). In fact, the prevalence among those whose main language is English (15% for men and 28% for women) is similar to that of the general population (17% for men and 27% for women).³

The study of acculturation and its relationship to healthy behaviors is complex. Previous studies, using similar indicators of acculturation, found acculturation to be negatively associated with several health behaviors such as diet, tobacco use, and alcohol abuse.^{4,9,10,17,18} In contrast to these findings, our results indicate that acculturation is associated with a lower prevalence of physical inactivity during leisure time. The difference between our findings and prior research may only illustrate the difficulties of assessing physical activities outside of leisure time and may not take into account the cultural validity of these types of questions to determine whether Hispanics interpret “leisure time” differently than the rest of society. A possible methodological limitation of our study is that it is based only on leisure-time activities and may not take into account other incidental, transportational, or



Note. Prevalence is adjusted for age, education, and income.

FIGURE 1—Adjusted prevalence for leisure-time physical inactivity among Mexican American adults 20 years and older by place of birth and preferred language, 1988-1994: Third National Health and Nutrition Examination Survey.

occupational activities that Hispanic men and women may report as physical exercise. Mexican Americans are less likely to own a car and therefore use more public transportation than non-Hispanic Whites.¹⁹

It may also be that first-generation Mexican Americans and those who have recently arrived in the United States face extreme hardship, as evidenced by inferior working and housing conditions and educational opportunities.^{7,19} Concomitantly, less-aculturated Hispanics may confront major environmental and economic barriers to accessing fitness facilities, safe recreational areas, and quality health care.¹⁷⁻²⁰

One possible contributing factor is that health education materials emphasizing active lifestyles for Mexican Americans may not be culturally specific or readily available in Spanish. Several studies have shown that presenting health education materials in a culturally appropriate format increases their acceptance by ethnically diverse populations^{8,18,20,21}; Mexican Americans with a better command of the English language may have responded to these materials by deciding to adopt a more physically active lifestyle. Although knowledge is not by itself sufficient to change behavior, it is a first step in in-

creasing awareness and may enable people to secure access to health promotion programs by influencing public policy. As Hispanics become the largest minority group in the United States, the need for more culturally appropriate health promotion intervention programs for this group will be of great public health significance.

We found that Mexican Americans who were born in the United States or whose main language is English have a lower prevalence of physical inactivity during leisure time than their Mexican-born counterparts or than those whose main language is not English. Public health education efforts should target minority groups who have limited English proficiency to ensure that all segments of society enjoy the health benefits of a more active lifestyle. ■

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Contributors

C.J. Crespo oversaw the writing of the entire manuscript and the conceptualization of the analytic research. E. Smit assisted with data analysis and the Discussion section. O. Carter-Pokras assisted with the conceptualization of the analytic research question and contributed to the Discussion section. R. Andersen assisted with writing the Discussion section and the introduction.

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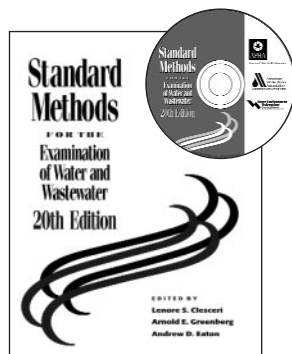
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