Problem Drinking Among Mexican-Americans: The Influence of Nativity and Neighborhood Context?

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Abstract

Purpose—We examined the influence of nativity and community context (Hispanic neighborhood concentration) on two measures of problem drinking among Mexican-Americans.

Design—Cross-sectional study

Setting—Texas City Stress and Health Study conducted in Texas City, Texas during 2004–2006.

Participants—A total of 1435 Mexican-Americans aged 25 years and older.

Measures—Binge drinking (≥ 6 drinks per occasion by men and ≥ 4 drinks per occasion by women) and scoring positive on the CAGE (a four-item clinical measure of problem drinking) as dependent variables. Key independent variables included a measure of language acculturation, proportion of Hispanics in the participant's neighborhood according to 2000 U.S. Census data, and being foreign-born compared with being U.S.-born.

Analysis—Logistic regression analysis was used to predict being a binge drinker and being positive on the CAGE.

Results—Foreign-born women were less likely to be binge drinkers than U.S.-born women. Nativity was not significant among men. Moreover women were less likely to be binge drinkers if they lived in heavily Hispanic neighborhoods. No such effect was found among men. Similar results were obtained with the CAGE.

Conclusions—We found a powerful influence of nativity (being U.S.-born compared with foreign born) and neighborhood Hispanic concentration on problem drinking among women but

not among men. It is likely that cultural norms in heavily Hispanic environments discourage problem drinking among women but not among men.

Keywords

PURPOSE

The literature on Hispanics, especially Mexican-Americans, has identified relatively good health outcomes despite relatively low socioeconomic status. The so-called Hispanic paradox was identified over 2 decades ago[1] and it continues to be the leading theme in the current literature.[2–8] Although some continue to argue that the paradox may be artificial,[7,8] the majority opinion is that the relatively good health of Mexican-Americans is real.

Any health advantages have been attributed primarily to the influence of migration selection or to a healthy immigrant effect. Mortality advantages among Mexican-Americans, for example, have been confined to immigrants on the basis of data from Texas and California.[8] A recent analysis of National Health Nutrition and Examination Survey (NHANES) data found that U.S.-born Mexican-Americans fare worse on biological outcomes than non-Hispanic whites, whereas immigrants have similar biological profiles as non-Hispanic whites, giving some support to the healthy immigrant effect.[2]

The disappearance of a health advantage in U.S.-born Mexican-Americans has been generally attributed to adoption of less healthy lifestyles, such as greater smoking, greater alcohol consumption, changes in diet, greater rates of obesity, and more sedentary life styles.[2,4,6] Specifically with respect to alcohol consumption, a negative effect of acculturation to the larger society has not been consistently found among men, but it appears to be present among women. For example, one study in San Antonio found that acculturation was related to greater alcohol consumption among younger women but not among younger men.[9] An analysis of data from the Hispanic Health and Nutrition Examination Survey (HHANES) conducted in 1982–1984 essentially revealed the same patterns.[10] Other studies have consistently shown that acculturation is related to the probability of being a drinker, of being a more frequent drinker, and of being a heavy drinker among Mexican-American women only, especially younger women.[11–16] It is not clear, however, whether greater alcohol consumption by more acculturated women is related to acculturative stress pressures or to the fact that more acculturated women are more likely to violate traditional norms that discourage alcohol consumption by women.

The purpose of this analysis is to examine gender differences in the influence of immigrant status, level of acculturation, socioeconomic status, and other factors on problem drinking behavior. We go beyond previous analyses by examining the influence of the community context in addition to the influence of individual characteristics. More specifically, we examine whether the percentage of Hispanics living in the participant's neighborhood is associated with alcohol consumption patterns. Previous research has shown that a high percentage of Hispanics is protective among older Mexican-Americans in mortality, depressive symptoms, and self-rated health.[17,18] However, health behaviors have not typically been examined, although it is assumed that they are a mechanism whereby the community context produces positive outcomes along with sheltering individuals from the

stressors of the larger society. The proposed analysis uses improved definitions and measures of neighborhood Hispanic concentration and examines whether high Hispanic concentration is differentially associated by gender with problem drinking behavior. To our knowledge, this is the first analysis of gender differentials in the influence of Hispanic neighborhood concentration on problem drinking.

METHODS

Design and Sample

We employ data from the Texas City Stress and Health Study. A probability sample of 1435 Mexican-Americans aged 25 years and older who were living in Texas City, Texas, a community of approximately 45,000 people along the Texas Gulf coast between Houston and Galveston, were interviewed during 2004–2006. The Mexican-American population of Texas City is typical of that of comparably sized cities in Texas in terms of nativity as well as socioeconomic characteristics. Sampling procedures have been described elsewhere.[19,20] Briefly, the research design involved a multistage probability sample. The first stage included the selection of three ethnic strata: Mexican-Americans aged 25 to 64 years, Mexican-Americans aged 65 years and older, and non-Hispanic individuals. The second stage involved the selection of housing units in each stratum. In this stage, all Hispanic housing units and one in eight non-Hispanic housing units were selected. The third stage included selecting one adult per household among Mexican-Americans aged 25 to 64 years and among non-Hispanic individuals. All Mexican-Americans aged 65 years and older were selected.

Participant eligibility criteria included the following: 25 years of age or older, currently living in the study area, and informed consent. Trained interviewers administered an approximately 1-hour-long, in-home interview that collected perceived health status, a range of psychosocial factors, health behaviors, demographic variables, and concerns regarding the health risks of the petrochemical plants. Baseline interview response rates in the main study were 82%. Participants were interviewed in English or Spanish according to their preferences. The institutional review board at the University of Texas Medical Branch approved the study protocol, and informed consent was obtained from all participants.

Measures

Our primary outcomes are two measures of alcohol consumption aimed at capturing problem drinking. Men drinking an average of six or more drinks per occasion in the month prior to the interview and women drinking four or more drinks per occasion are considered binge drinkers and are coded 1; all others are coded 0.[10] The second measure is the CAGE, a four-item clinical measure aimed at capturing current and past problem drinkers.[21] Participants scoring positive on two of the four items were coded as positive on the measure.

Correlates of problem drinking included age, marital status (married = 1), employment status (employed = 1), language use, and proportion of Hispanics in the neighborhood. Language use was measured by the English language usage six-item scale proposed by Hazuda et al.[22] The items measure primary language spoken as an adult (at home, outside the home, at family gatherings) and as a child. Scores may range from 6 to 28, and higher scores indicate greater use of English. The scale had an α reliability of .94 according to the current data.

Principles from the literature on neighborhoods and health were used in conjunction with areal imagery and the Geographic Information System (GIS) to create neighborhood boundaries. We focused on street patterns, housing patterns, nonresidential land use, and land forms[23–25] to create 48 neighborhoods in the study area, by using the standards of

ecometric analysis.[26] The intraclass correlation coefficients that are based on subjective and objective neighborhood measures in these neighborhoods were found superior to other potential neighborhoods in the study area: 31 census block groups or 48 areas created with a regular spatial grid. Thus, the neighborhoods were deemed reliable and more indicative of neighborhoods than census block groups or the regular grid areas.

Finally, we introduced a measure of stress exposure as a correlate/predictor of alcohol consumption to additionally clarify the potential association between the percent Hispanic in the neighborhood and alcohol consumption. Stress exposure in the past 12 months was assessed with a measure developed by Turner and Avison (2003).[27] Respondents were asked whether or not 21 events had occurred to them in the last 12 months. These events ranged from legal problems, such as a being arrested or going to jail, to financial issues, such as going on welfare, financial crisis, or being sued, to grief and relationship problems. The 21 events are summed for a total recent stress exposure score in which higher values indicate greater stress exposure.

Analysis

We performed logistic regression analyses to predict being a binge drinker and scoring positive on the CAGE. Key independent variables included a measure of language acculturation, proportion of Hispanics in the participant's neighborhood according to 2000 U.S. Census data, and being foreign born compared with being U.S.-born. All participants were of Mexican origin. Other variables controlled in the equations included age, employment status, marital status, and education. The influence of a measure of stress exposure, in the year prior to the interview, was also assessed. The analysis was conducted separately for men and women, given such wide differences by gender in the problem drinking variables.

The purpose of the analysis performed was to examine the differential influence by gender of nativity and Hispanic neighborhood concentration (proportion Hispanics) on the probability of being a problem drinker as measured by binge drinking and scoring positive on the CAGE. On the basis of previous literature, we hypothesize that being foreign born would be associated with a lower probability of problem drinking among women but not among men. Finally, would Hispanic neighborhood concentration also be more associated with problem drinking among women than among men controlling for other factors? The analysis is performed in two stages: Model 1 includes all independent variables except percentage Hispanic in the neighborhood. Model 2 adds percentage Hispanic in the neighborhood. Model 3 adds the measure of stress exposure.

RESULTS

Table 1 presents descriptive characteristics of the sample by gender. The table shows that there were 607 men (42.3%) and 828 women (57.7%) in the sample. Similar percentages of men (32.9%) and women (31.2%) were foreign-born. English language use, education, and neighborhood concentration were similar by gender. Table 1 shows large differences by gender in the two problem drinking variables. Among men, 30.6% reported having six or more drinks per drinking episode compared with 8.1% of women who reported having four or more drinks per occasion. With respect to the CAGE, 18.8% of the men scored positive compared with only 5.6% of the women. These differences are what might have been expected from previous literature.

Table 2 presents odds ratios for heavy drinking (6 drinks per occasion among men; 4 drinks among women). As can be seen, age is associated with a lower probability of being a heavy drinker among women but not among men. Years of education was associated with a

lower probability of being a heavy drinker in both genders. A substantial difference is observed in the influence of nativity on the probability of being a heavy drinker by gender, with no difference among men and a large difference among women. Women were significantly less likely to be heavy drinkers if they were foreign-born than U.S.-born Women were also less likely to be heavy drinkers if they lived in more heavily Hispanic neighborhoods. No such effect was found among men. Model 3 adds the measure of stress exposure, which was not significantly associated with heavy drinking. Moreover, the association between Hispanic neighborhood concentration and heavy drinking remained virtually unchanged.

Table 3 presents results of analyses predicting scoring positive on the CAGE by gender. As can be seen, being married is associated with a lower probability of being positive on the CAGE. English language use is associated with a higher probability of scoring positive on the CAGE among women, but not among men, which is consistent with previous literature. Being foreign born appears to be associated with a lower probability of scoring positive on the CAGE in both genders. Moreover, we find that Hispanic concentration in the neighborhood is associated with a lower probability of scoring positive on the CAGE among women but not among men. In Model 3, we added the measure of stress exposure, which was significantly associated with the outcome variables. Again, the association of Hispanic neighborhood concentration remained virtually unchanged.

DISCUSSION

The primary purpose of this analysis was to examine differences by gender in the influence of nativity and ethnic neighborhood concentration on the probability of being a problem drinker among Mexican-Americans in a community study in Texas City, Texas. Our results are consistent with previous literature that suggest the importance of cultural factors in influencing alcohol consumption in Mexican-American women but not in Mexican-American men. We found a more powerful influence of nativity (being U.S. born compared with foreign born) on problem drinking among women than among men. What is new in our findings is the importance of the community context in predicting problem alcohol consumption among Mexican-American women but not among men. Mexican-American women living in neighborhoods with a higher proportion of Hispanics were less likely to exhibit problem drinking behaviors. Our results extend the literature and suggest a protective influence of Hispanic concentration on health outcomes to an important health behavior, problem drinking, but only among women. Although it could be argued that Hispanic neighborhoods offer better social integration and buffer stress, it is more likely that cultural norms in heavily Hispanic environments discourage problem alcohol consumption among women but not among men.[28,29] A measure of stress proved to be significantly associated with scoring positive on the CAGE among both women and men but had no influence on the significant association between Hispanic neighborhood association and scoring positive on the CAGE among women; this gives additional credence to the influence of cultural norms on Mexican-American women's alcohol consumption patterns. Our results suggest that health promotion efforts and interventions aimed at preventing or reducing problem drinking among Mexican-American women need to consider targeting neighborhoods of lower Hispanic population density. Efforts aimed at Mexican-American men need to target all areas regardless of Hispanic neighborhood concentration.

Acknowledgments

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SO WHAT? Implications for Health Promotion Practitioners and Researchers

What is already known on this topic?

It has been established that foreign-born Mexican-American women are less likely to abuse alcohol than U.S.-born Mexican-American women. This association has been less consistently found among Mexican-American men.

What does this article add?

This is the first analysis to find that high Hispanic neighborhood concentration is associated with a lower probability of problem drinking among Mexican-American women, when the analysis is controlled for individual characteristics. This association was found only among Mexican-American women.

What are the implications for health promotion practice or research?

The influence of neighborhood Hispanic concentration must be considered in designing interventions targeting alcohol abuse and other health behaviors among Mexican-American women.

Table 1

Descriptive Characteristics of the Sample by Gender (N = 1435)[†]

Selected Characteristics	Total No. of Patients	Male, No. (%)	Female, No. (%)
Total	1435	607 (42.3)	828 (57.7)
Age, (mean ± SD; range)	1435	47.0 ± 15.2; 25–87	45.7 ± 15.2; 25–89
Marital status (married)[*]	1435	413 (68.0)	471 (56.9)
Employment (yes)[**]	1426	453 (75.4)	685 (83.0)
Nativity			
U.S.-born	1435	407 (67.1)	569 (68.8)
foreign-born		200 (32.9)	259 (31.2)
English language of use (mean ± SD)	1419	17.8 ± 6.7	17.8 ± 6.9
Education (mean ± SD)	1430	10.5 ± 3.6	10.6 ± 3.6
Proportion of Hispanics in neighborhood			
<19%	1386	145 (24.5)	200 (25.2)
19% to <29%		146 (24.7)	203 (25.6)
29% to <40%		151 (25.5)	187 (23.6)
40%		150 (25.3)	204 (25.6)
Heavy drinker[*]			
Yes	1342	173 (30.6)	63 (8.1)
No		392 (69.4)	714 (91.9)
CAGE[*]			
<2	1432	493 (81.2)	779 (94.2)
2		114 (18.8)	46 (5.6)
Life event stressors (mean ± SD)[**]	1400	1.8 ± 2.3	2.1 ± 2.6

[†]Participants reporting six or more drinks per occasion in men and four or more drinks per occasion in women are considered heavy drinkers. Data presented as means or percents. Number varies because of missing data. Abbreviations: SD indicates standard deviation; CAGE, a four-item clinical measure of problem drinking.

[*]Significantly different by gender; $p < 0.0001$.

[**]Significantly different by gender; $p < 0.001$.

Table 2

Odds Ratio for Alcohol Consumption Among (Heavy-Drinker) Hispanics (N = 1435)[*]

	Male Model 1 (n = 555), OR (95% Cl)	Male Model 2 (n = 542), OR (95% Cl)	Male Model 3 (n = 530), OR (95% Cl)	Female Model 1 (n = 759), OR (95% Cl)	Female Model 2 (n = 725), OR (95% Cl)	Female Model 3 (n = 704), OR (95% Cl)
Age (each 10 years)	0.87 (0.75–1.03)	0.89 (0.76–1.04)	0.90 (0.76–1.05)	0.69 (0.55–0.86)	0.67 (0.53–0.85)	0.70 (0.54–0.89)
Marital status (married = 1)	0.72 (0.49–1.07)	0.72 (0.48–1.08)	0.76 (0.51–1.15)	0.98 (0.57–1.71)	0.92 (0.51–1.63)	0.99 (0.54–1.82)
English language use	1.02 (0.98–1.06)	1.02 (0.98–1.06)	1.02 (0.98–1.06)	0.99 (0.94–1.05)	0.99 (0.93–1.05)	0.99 (0.93–1.05)
Employment	0.76 (0.44–1.30)	0.78 (0.45–1.36)	0.81 (0.47–1.42)	0.88 (0.37–2.09)	0.87 (0.35–2.17)	0.88 (0.35–2.21)
Nativity (foreign-born vs. U.S.-born)	0.88 (0.50–1.54)	0.86 (0.49–1.51)	0.93 (0.53–1.65)	0.11 (0.03–0.35)	0.13 (0.04–0.41)	0.12 (0.03–0.40)
Education (years)	0.94 (0.88–0.99)	0.94 (0.88–0.99)	0.93 (0.87–0.99)	0.90 (0.81–0.99)	0.90 (0.81–0.99)	0.89 (0.81–0.99)
Proportion Hispanic (each 10%)		0.99 (0.90–1.10)	0.98 (0.89–1.09)		0.81 (0.68–0.97)	0.81 (0.68–0.97)
Life event stressors			1.06 (0.98–1.15)			1.08 (0.98–1.20)

[*] Six or more drinks per occasion in men and four or more drinks per occasion in women are considered heavy drinking. OR indicates odds ratio; Cl, confidence interval.

Table 3

Odds Ratio for Scoring Positive on the CAGE (N = 1435)[*]

	Male Model 1 (n = 597), OR (95% Cl)	Male Model 2 (n = 583), OR (95% Cl)	Male Model 3 (n = 570), OR (95% Cl)	Female Model 1 (n = 806), OR (95% Cl)	Female Model 2 (n = 772), OR (95% Cl)	Female Model 3 (no 751), OR (95% Cl)
Age (each 10 years)	1.00 (0.83–1.19)	1.02 (0.85–1.22)	1.06 (0.88–1.29)	0.80 (0.62–1.03)	0.80 (0.60–1.07)	0.86 (0.64–1.16)
Marital status (married = 1)	0.66 (0.43–1.03)	0.63 (0.40–0.98)	0.78 (0.49–1.26)	0.41 (0.21–0.80)	0.36 (0.17–0.75)	0.47 (0.22–1.03)
English language use	1.00 (0.96–1.05)	1.00 (0.96–1.05)	1.00 (0.95–1.05)	1.07 (1.00–1.15)	1.09 (1.01–1.18)	1.09 (1.00–1.19)
Employment	0.71 (0.39–1.28)	0.71 (0.40–1.29)	0.72 (0.39–1.33)	0.77 (0.31–1.94)	0.82 (0.29–2.32)	0.80 (0.28–2.27)
Nativity (foreign-born vs. U.S.-born)	0.80 (0.42–1.52)	0.78 (0.41–1.50)	0.83 (0.42–1.62)	0.19 (0.04–1.01)	0.32 (0.06–1.73)	0.37 (0.07–2.05)
Education (years)	0.99 (0.92–1.05)	0.99 (0.92–1.06)	0.99 (0.92–1.06)	0.93 (0.83–1.05)	0.94 (0.83–1.07)	0.93 (0.82–1.05)
Proportion Hispanic (each 10%)		1.02 (0.91–1.15)	1.04 (0.92–1.17)		0.67 (0.52–0.87)	0.69 (0.53–0.89)
Life event stressors			1.30 (1.19–1.42)			1.18 (1.06–1.32)

[*] CAGE indicates a four-item clinical measure of problem drinking; OR, odds ratio; Cl, confidence interval.