Differences in Patterns of Alcohol Consumption Among Hispanics in the United States, by Survey Language Preference, Behavioral Risk Factor Surveillance System, 2005

William S. Pearson, PhD, MHA, Shanta R. Dube, PhD, MPH, David E. Nelson, MD, MPH, Raul Caetano, MD, MPH, PhD

Abstract

Introduction
Alcohol consumption is pervasive in the United States, and extent of alcohol consumption for the growing US Hispanic population needs further study. We examined the association between language chosen for a national health survey and alcohol use among Hispanic adults.

Methods
Hispanic participants aged 18 years and older (N = 20,234) from the 2005 Behavioral Risk Factor Surveillance System were stratified by choice of language (English, n = 13,035; Spanish, n = 7,199) for completing the survey. Differences for these 2 groups in current alcohol use, heavy alcohol use, and binge drinking were determined by using $\chi^2$ analyses and logistic regression models.

Results
In bivariate associations, current drinking ($P < .001$), heavy drinking ($P < .001$), and binge drinking ($P = .002$) were significantly higher among participants who chose to complete the survey in English than among those who elected to complete the survey in Spanish. After controlling for demographic characteristics, associations between language choice and drinking behaviors were found to be greatest among women. Compared with women who chose to complete the survey in Spanish, women who chose to complete the survey in English were more than twice as likely to report current drinking (odds ratio [OR] = 2.42, 95% confidence interval [CI] = 2.02-2.91), heavy drinking (OR = 3.82, 95% CI = 1.44-10.10), and binge drinking (OR = 2.51, 95% CI = 1.64-3.84).

Conclusion
This study suggests that language choice when completing a health survey is a predictor of high levels of alcohol use among Hispanic adults in the United States and that differences in drinking behaviors based on language choice for a survey are more profound among women.

Introduction
Over the past 20 to 30 years, major demographic shifts in ethnic composition have occurred in the United States, particularly among the Hispanic population. From 1970 to 2000, the Hispanic population grew in the United States from 4.7% to 12.5% (1). Moreover, recent census data indicate that Hispanics are the fastest growing population in
Many epidemiologic studies have been conducted to examine patterns of health and disease among this growing population, especially in an effort to reduce health disparities. Epidemiologic studies of alcohol use among Hispanics in the United States have indicated high estimates of general alcohol use and more hazardous alcohol-use patterns compared with other ethnic groups, although the levels were slightly lower than those for whites (4-12). Alcohol use was the third leading cause of preventable death in the United States in 2000 (13), and compared with other immigrant groups, Hispanics, especially men, have a greater propensity for hazardous alcohol consumption and suffer from more alcohol-related problems (14). For instance, white Hispanic men have the highest rate of cirrhosis mortality in the United States, compared with black and white non-Hispanic men, white Hispanic women, and black and white non-Hispanic women (15). Therefore, further research about the use of alcohol in the Hispanic population is relevant to public health.

The growth of the Hispanic population in the United States is creating a culture in which Spanish is spoken by 1 of 5 US citizens (2). Because of this shift, several studies have examined language preference among Hispanics as a predictor of health outcomes. For example, Spanish-language preference was found to be a barrier to the receipt of health care services (16) and a predictor for the receipt of less-efficient care (17). Conversely, comparisons of Spanish- and English-language preference have shown a higher prevalence of illicit drug use and smoking in groups that preferred English compared with Spanish (18,19). Furthermore, language of survey has been used as a 1-item measure of acculturation for smoking among Hispanics in a state-based population survey (20). Many other studies have examined the effects of acculturation on alcohol use and, in general, show that acculturation is related to higher rates of drinking, especially among women (5,21,22). Many studies show that acculturation has a general effect of liberalizing norms and attitudes toward drinking and, thus, increases drinking, but clear differences have been found between men and women (23-26). However, many of these studies had substantial limitations, which included low power due to small sample sizes (11) and data being collected in local areas (e.g., single states, small number of treatment centers) and covariates not being sufficiently handled with the use of statistical tests (27).

The purpose of our study was to examine language preference for a health interview as a predictor of alcohol consumption patterns among Hispanic adults in the United States. We are not aware of any studies to date that have examined language preference solely as a predictor of alcohol consumption patterns in a nationally representative sample of Hispanics in the United States. Furthermore, we used a large, nationally representative sample and tests of statistical significance to overcome the limitations of previous studies and to confirm language preference as a predictor of alcohol use among Hispanic adults in the United States.

Methods

Data for our study were taken from the 2005 Behavioral Risk Factor Surveillance System (BRFSS) survey. The BRFSS is an ongoing, state-based, random-digit–dialed, land-line telephone survey of adults aged 18 years or older that collects information on health risk behaviors, preventive health practices, and access to and use of health care services primarily related to chronic conditions. The data collected in the BRFSS are weighted to provide national estimates. In 2005, a total of 356,212 respondents participated in the survey. The median response rate for this survey was 51.1%, and the median cooperation rate, defined as the proportion of people interviewed of all eligible people who were actually contacted, was 75.1% (28).

The sample for this study was limited to participants who identified themselves as Hispanic and who resided in 1 of the 50 US states or the District of Columbia. The sample size for our analysis was 20,234, which represented approximately 28 million people in the United States. The sample was stratified by language preference of the survey respondents; group assignment was determined by whether the survey was conducted in Spanish (n = 7,199) or English (n = 13,035). Demographic characteristics examined for each group were age, sex, marital status, number of adults in the household, education level, employment status, and region of the country in which the participant lived.

Three measures of alcohol use were determined for this sample: current drinking, heavy drinking, and binge...
drinking. Current drinking was determined by the question, “During the past 30 days, have you had at least 1 drink of any alcoholic beverage, such as beer, wine, a malt beverage, or liquor?” People who responded no were not asked the subsequent questions on heavy drinking and binge drinking; thus, heavy drinking and binge drinking were assessed only among current drinkers. Heavy drinking was defined as having more than 2 drinks per day for men and more than 1 drink per day for women and was determined by the question, “One drink is equivalent to a 12-ounce beer, a 4-ounce glass of wine, or a drink with 1 shot of liquor. On the days when you drank, during the past 30 days, about how many drinks did you drink on the average?” (29). Binge drinking was defined as having 5 or more drinks on 1 occasion during the past 30 days and was determined by asking, “Considering all types of alcoholic beverages, how many times during the past 30 days did you have 5 or more drinks on 1 occasion?”(30).

The sample was described by providing estimates of the different demographic characteristics (age, sex, marital status, number of adults in the household, education level, employment status, and region of residence) by language of the survey. Bivariate analyses were performed on the 3 alcohol measures between participants who chose to complete the survey in English and those who chose Spanish. Chi-square tests were used to analyze the independent association of alcohol consumption with language preference. Significance was set at $\alpha = .05$. Separate logistic regression models were performed to examine the association between the 3 alcohol measures and language preference, while controlling for demographic variables. Both bivariate and multivariate analyses were conducted for the entire sample, as well as stratified by sex because of findings from previous research suggesting that the effects of acculturation on drinking patterns differ for men and women (31,32). All analyses were conducted using SUDAAN (RTI International, Research Triangle Park, North Carolina) software to account for the complex sampling design of the survey.

Results

Participants who chose complete the survey in English and in Spanish were similar in terms of age and sex (Table 1). For both groups, approximately half of the population was 18 to 35 years of age, and both groups were nearly evenly divided between men and women.

Compared with participants who were interviewed in Spanish, a smaller proportion of participants interviewed in English reported that they were married or part of a couple (Table 1). Participants interviewed in English had higher levels of education than those interviewed in Spanish. In addition, participants interviewed in English had a much smaller proportion of households with more than 2 adults (36.4%) compared with participants interviewed in Spanish (53.0%). Participants interviewed in English were slightly more likely to indicate that they were employed compared with participants interviewed in Spanish (64.8% vs 61.2%). Finally, the geographic distribution of these 2 groups indicated that participants interviewed in English were much less likely than those interviewed in Spanish to be living in the West (39.2% vs 52.7%).

Statistically significant differences existed between the groups for the 3 alcohol consumption measures in bivariate relationships (Table 2). Among participants interviewed in English, 54.3% indicated that they had used alcohol within the past 30 days compared with 36.7% of those interviewed in Spanish ($P < .001$). Participants interviewed in English had a larger proportion of participants who were heavy drinkers ($P < .001$) and a larger proportion of participants who were binge drinkers ($P = .002$) compared with participants interviewed in Spanish.

Similar outcomes were found when focusing the analyses on men ($n = 7,493$) and women ($n = 12,741$) separately (Table 2). Among men, those who chose to be interviewed in English rather than Spanish had a significantly greater proportion of respondents indicating that they had used alcohol within the past 30 days (62.6% vs 53.6%, $P < .001$). Among women, those who chose to be interviewed in English rather than Spanish also had a significantly greater proportion of respondents indicating that they had used alcohol within the past 30 days (46.2% vs 18.3%, $P < .001$). For heavy and binge drinking, however, the differences between participants who chose to be interviewed in English and those who chose Spanish were significant only among the women. Among women, 4.2% of those interviewed in English reported heavy drinking compared with only 0.8% of those interviewed in Spanish ($P < .001$). Similarly, 8.6% of women interviewed in English reported binge drinking compared with 2.8% of women interviewed in Spanish ($P < .001$).
The logistic regression model for the combined sample of men and women demonstrated that, after controlling for demographic factors, participants who chose to complete the survey in English rather than Spanish were significantly more likely to have consumed alcohol within the past 30 days. Participants interviewed in English were nearly twice as likely to have engaged in heavy drinking and 40% more likely to participate in binge drinking compared with those interviewed in Spanish (Table 3).

Similar results were found when examining outcomes for men and women separately. Both men and women interviewed in English were significantly more likely than those interviewed in Spanish to report current, heavy, and binge drinking. Of participants who chose to be interviewed in English, odd ratios (ORs) among Hispanic women were larger than those for Hispanic men (Table 3).

**Discussion**

The prevalence estimates and adjusted ORs for current, heavy, and binge drinking were higher among Hispanics who chose to complete the BRFSS in English than those who chose to complete the survey in Spanish. These results held true for both men and women separately, although the differences were particularly striking among women. To our knowledge, these are the most recent, nationally representative data stratified by language of survey on drinking patterns among Hispanics in the United States, and the results suggest that preferred language of survey administration is predictive of alcohol use in this population.

The finding that English-speaking Hispanic women were more likely to drink than were English-speaking Hispanic men confirms previous research on acculturation and substance abuse (17). Alcohol use has been a part of American culture for more than 300 years, and its use is a socially accepted behavior (33,34). As Hispanic women become more acculturated to American society, they are possibly more willing to participate in the social norms of the host society and less likely to feel the influence of traditional Hispanic culture (11,35). As has been previously noted, acculturated individuals tend to have more liberal attitudes (23). Therefore, they are more willing to participate in behaviors that previously had been taboo for them. Alternatively, Hispanic men in their native culture may have felt less societal pressure to abstain from drinking (36). These ideas could possibly explain why women who chose to complete the survey in English demonstrated a stronger proclivity to participate in drinking than did men.

Variations in drinking patterns among the heterogeneous Hispanic populations in the United States have been attributed to sex (37), country of origin (6), and level of acculturation (38,39). Acculturation has been a prominent focus of research on alcohol use among Hispanics (40,41). Acculturation involves changes in the beliefs, attitudes, and behaviors of immigrant populations as they adapt or assimilate to living in the dominant culture or society. Measurements of acculturation have typically included several questions such as country of origin, length of time spent in the host country, language preference, and feelings of interaction with the new culture (42,43).

Measuring acculturation in large population-based surveys such as the BRFSS can be challenging because the instruments used to measure the construct are lengthy. Large national surveys such as the BRFSS and the National Health Interview Survey, for example, collect data on many aspects of health and health care, which means there is competition for question space within the surveys. Given this challenge, the use of a 1-item question on language preference as a proxy measure may provide a feasible and accurate method to assess acculturation. A previous study of cigarette smoking behavior among US Latino men and women reported a high correlation ($r = 0.8$) between the 1-item question on language preference for the survey and a validated instrument used to measure acculturation (44).

Furthermore, researchers using the BRFSS in Oregon tested the 1-item question on language of survey to examine the effect of acculturation on smoking (20). Given that this measure has been used previously as a predictor of acculturation and was found to provide similar results to studies using more in-depth measures of acculturation, the use of this 1-item proxy in a national survey could save both time and money when conducting large numbers of interviews.

However, we are not advocating an indiscriminate use of proxy measures of acculturation in all research. Much research focusing specifically on the effects of acculturation and drinking should continue to employ longer and multi-item measures of acculturation. This will allow for a deeper understanding of how different dimensions of this construct (eg, language use, adoption of social norms, etc.) contribute to drinking patterns among Hispanics in the United States.
social interaction patterns, access to employment) are associated with drinking behaviors and how such associations change with different alcohol-related behaviors cross-sectionally and over time.

One practical implication of our study is the need to create materials in Spanish to reduce or prevent alcohol misuse. Alcohol industry representatives, noting the increasing number of Hispanics in the United States, have targeted this population (45). Alcohol product advertising and marketing campaigns in Spanish have been implemented, and a substantial proportion of Hispanic youth is being exposed to both English and Spanish alcohol advertisements (45). Therefore, from a public health perspective, Spanish language materials that discuss the effects of alcohol use should be used to target both Hispanic adults and youth. Providing interventions in Spanish may help the intervention more fully resonate with the Hispanic population and possibly provide primary prevention against alcohol misuse among Hispanics early in the acculturation process.

In our review of the literature, we found no studies that addressed preventing Hispanic women from adopting US alcohol use patterns during the acculturation process. Our study and others (42) suggest that interventions and further research in this area are needed.

Our study had some limitations that should be considered. First, the BRFSS is a land-line telephone survey, and not all people in the United States possess land-line telephones. A report from the US Census Bureau indicated that Hispanic households have a slightly lower rate of land-line telephone coverage than do white households (46). This situation could reduce the likelihood of Hispanics participating in this survey. Second, because findings are based on self-report, response bias may have been introduced into the results. Furthermore, underreporting of alcohol consumption is especially common among survey participants (47). Therefore, these estimates of drinking behaviors may be lower than the actual occurrence.

Despite these limitations, our analyses suggest that language of preference for survey interviews is associated with alcohol use among Hispanics in the United States. As previous work has suggested, language preference alone may be used as a reasonable proxy measure of acculturation. Future studies should consider language preference and its association with other health behaviors among Hispanics in the United States.

Author Information

Corresponding Author: William S. Pearson, PhD, Epidemiologist, Behavioral Surveillance Branch, Division of Adult and Community Health, Centers for Disease Control and Prevention, 4770 Buford Hwy NE, Mail Stop K-66, Atlanta, GA 30341. Telephone: 770-488-5429. E-mail: wpearson@cdc.gov.

Author Affiliations: Shanta R. Dube, David E. Nelson, Centers for Disease Control and Prevention, Atlanta, Georgia; Raul Caetano, University of Texas and University of Texas Southwestern Medical Center, Dallas, Texas.

References

1. Owens AM. Hispanics in the US. Washington (DC): US Census Bureau; 2006. http://www.census.gov/population/www/socdemo/hispanic/files/Internet_Hispanic_in_US_2006.pdf. Accessed November 20, 2008.
2. US Census Bureau. Race and Hispanic or Latino origin of the population for the United States: 2004 and 2005. Hyattsville (MD): US Census Bureau. http://www.census.gov/PressRelease/www/2006/nationalraceetable1.pdf. Accessed February 27, 2007.
3. US Census Bureau. Projections of the resident population by race, Hispanic origin and nativity: 2025 and 2050. Hyattsville (MD): US Census Bureau; 2003.
4. Caetano R. Drinking patterns and alcohol problems among Hispanics in the US: a review. Drug Alcohol Depend 1983;12(1):37-59.
5. Caetano R. Hispanic drinking in the US: thinking in new directions. Br J Addict 1990;85(10):1231-6.
6. Dawson DA. Beyond black, white and Hispanic: race, ethnic origin and drinking patterns in the United States. J Subst Abuse 1998;10(4):321-39.
7. Nielsen AL. Examining drinking patterns and problems among Hispanic groups: results from a national survey. J Stud Alcohol 2000;61(2):301-10.
8. Finch BK. Nation of origin, gender, and neighbor differences in past-year substance use among Hispanics and non-Hispanic whites. Hisp J Behav Sci 2001;23:88-101.
9. Collins RL, McNair LD. Minority women and alcohol...
use. Alcohol Res Health 2002;26(4):251-6.
10. Galvan FH, Caetano R. Alcohol use and related problems among ethnic minorities in the United States. Alcohol Res Health 2003;27(1):87-94.
11. Zemore SE. Re-examining whether and why acculturation relates to drinking outcomes in a rigorous, national survey of Latinos. Alcohol Clin Exp Res 2005;29(12):2144-53.
12. Masel MC, Rudkin LL, Peek MK. Examining the role of acculturation in health behaviors of older Mexican Americans. Am J Health Behav 2006;30(6):684-99.
13. Mokdad AH, Marks JS, Stroup D, Gerberding JL. Actual causes of death in the United States, 2000. JAMA 2004;291(10):1238-45. Erratum JAMA 2005;293(3):293-4.
14. Gomberg ES. Treatment for alcohol-related problems: special populations: research opportunities. Recent Dev Alcohol 2003;16:313-33.
15. Stinson FS, Grant BF, Dufour MC. Language barriers and resource utilization in a pediatric emergency department. Pediatrics 1999;103(6 Pt 1):1253-6.
16. Vega WA, Alderete E, Kolody B, Aguilar-Gaxiola S. Illicit drug use among Mexicans and Mexican-Americans in California: the effects of gender and acculturation. Addiction 1998;93(12):1839-50.
17. Amaro H, Whitaker R, Coffman G, Heeren T. Acculturation and marijuana and cocaine use: findings from HHANES 1982-84. Am J Public Health 1990;80 Suppl:54-60.
18. Maher JE, Boysum MJ, Rohde K, Stark MJ, Pizacani BA, Dilley J, et al. Are Latinos really less likely to be smokers? Lessons from Oregon. Nicotine Tob Res 2005;7:283-7.
19. Gilbert MJ. Alcohol consumption patterns in immigrant and later generation Mexican American women. Hisp J Behav Sci 1987;9:299-313.
20. Zemore SE. Acculturation and alcohol among Latino adults in the United States: a comprehensive review. Alcohol Clin Exp Res 2007;31(12):1968-90.
21. Dietary guidelines for Americans, 2005. Washington (DC): US Department of Agriculture. http://www.health.gov/DietaryGuidelines/dga2005/document/default.htm. Accessed April 11, 2007.
22. Behavioral Risk Factor Surveillance System (BRFSS): turning information into health. Atlanta (GA): Centers for Disease Control and Prevention. http://www.cdc.gov/brfss. Accessed May 1, 2007.
23. Galanti GA. The Hispanic family and male-female relationships: an overview. J Transcult Nurs 2003;14(3):180-5.
37. Canino G. Alcohol use and misuse among Hispanic women: selected factors, processes, and studies. Int J Addict 1994;29(9):1083-100.

38. Epstein JA, Botvin GJ, Diaz T. Linguistic acculturation associated with higher marijuana and polydrug use among Hispanic adolescents. Subst Use Misuse 2001;36(4):477-99.

39. Gil AG, Vega WA. Acculturation, familism, and alcohol use among Latino adolescent males: longitudinal relations. J Community Psychol 2000;28:443-58.

40. Marin G, Posner SF, Kinyon JB. Alcohol expectancies among Hispanics and non-Hispanic whites: role of drinking status and acculturation. Hisp J Behav Sci 1993;15:373-81.

41. Abraido-Lanza A, Chao MT, Florez KR. Do healthy behaviors decline with greater acculturation? Implications for the Latino morality paradox. Soc Sci Med 2005;61(6):1243-55.

42. 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.

43. Abraido-Lanza AF, Armbrister AN, Florez KR, Aguirre AN. Toward a theory-driven model of acculturation in public health research. Am J Public Health 2006;96(8):1342-6.

44. Pérez-Stable EJ, Ramirez A, Villareal R, Talavera GA, Trapido E, Suarez L, et al. Cigarette smoking behavior among US Latino men and women from different countries of origin. Am J Public Health 2001;91(9):1424-30.

45. Alcohol industry marketing to Hispanics: exposure of Hispanic youth to alcohol advertising, 2003-2004. Washington (DC): Center on Alcohol Marketing and Youth. http://www.camy.org/research/hispanic1005/hispanic1005english.pdf. Accessed June 10, 2007.

46. Extended measures of well-being: living conditions in the United States, 2003. Washington (DC): US Census Bureau. http://www.census.gov/prod/2007pubs/p70-110.pdf. Accessed April 11, 2007.

47. Feunekes GI, van ’t Veer P, van Staveren WA, Kok FJ. Alcohol intake: the sober facts. Am J Epidemiol 1999;150(1):105-12.
### Tables

#### Table 1. Demographic Characteristics of Hispanic Survey Participants (N = 20,234), by Survey Language Preference, Behavioral Risk Factor Surveillance System, 2005

| Characteristic                  | Participants Interviewed in English, % (95% CI) (n = 13,035) | Participants Interviewed in Spanish, % (95% CI) (n = 7,199) | P Value<sup>a</sup> |
|--------------------------------|---------------------------------------------------------------|-------------------------------------------------------------|--------------------|
| Age, y                         |                                                               |                                                             |                    |
| 18-35                          | 49.7 (47.9-51.5)                                               | 52.4 (50.1-54.7)                                            | .34                |
| 36-49                          | 26.0 (24.6-27.4)                                               | 28.7 (26.8-30.7)                                            |                    |
| 50-64                          | 16.0 (14.8-17.2)                                               | 11.7 (10.3-13.1)                                            |                    |
| ≥65                            | 8.4 (7.4-9.4)                                                  | 7.2 (6.0-8.4)                                               |                    |
| Sex                            |                                                               |                                                             |                    |
| Male                           | 49.4 (47.6-51.2)                                               | 52.0 (49.7-54.3)                                            | .07                |
| Female                         | 50.6 (48.8-52.4)                                               | 48.0 (45.7-50.3)                                            |                    |
| Marital status                 |                                                               |                                                             |                    |
| Married/part of couple         | 59.0 (57.2-60.8)                                               | 71.3 (69.2-73.4)                                            | <.001              |
| Ever married                   | 15.3 (14.1-16.5)                                               | 12.7 (11.3-14.0)                                            |                    |
| Never married                  | 25.8 (24.0-27.6)                                               | 16.0 (14.1-18.0)                                            |                    |
| No. of adults in household     |                                                               |                                                             |                    |
| ≤2                             | 63.6 (61.7-65.6)                                               | 47.0 (44.9-49.1)                                            | <.001              |
| >2                             | 36.4 (34.5-38.4)                                               | 53.0 (50.1-55.1)                                            |                    |
| Education level                |                                                               |                                                             |                    |
| Less than high school graduate | 17.1 (15.7-18.5)                                               | 58.6 (56.5-60.7)                                            | <.001              |
| High school graduate           | 33.3 (31.5-35.1)                                               | 25.5 (23.6-27.5)                                            |                    |
| Some college                   | 28.6 (27.0-30.2)                                               | 10.4 (9.0-11.8)                                             |                    |
| College graduate               | 21.0 (19.6-21.4)                                               | 5.5 (4.5-6.5)                                               |                    |
| Employment status              |                                                               |                                                             |                    |
| Employed                       | 64.8 (63.0-66.6)                                               | 61.2 (59.1-63.3)                                            | <.001              |
| Unemployed                     | 7.1 (6.1-8.1)                                                  | 5.9 (6.9-7.9)                                               |                    |
| Other                          | 28.1 (26.5-29.7)                                               | 32.9 (30.8-35.0)                                            |                    |
| Region of country              |                                                               |                                                             |                    |
| Northeast                      | 16.4 (15.2-17.6)                                               |                                                             | .05                |
| South                          | 34.5 (32.9-36.1)                                               | 28.5 (26.7-30.3)                                            |                    |
| Midwest                        | 9.9 (9.1-10.7)                                                 | 5.7 (4.7-6.2)                                               |                    |
| West                           | 39.2 (37.4-41.)                                                | 52.7 (50.6-54.8)                                            |                    |

Abbreviation: CI, confidence interval.

<sup>a</sup> P values derived from $\chi^2$ test.

The opinions expressed by authors contributing to this journal do not necessarily reflect the opinions of the US Department of Health and Human Services, the Public Health Service, the Centers for Disease Control and Prevention, or the authors’ affiliated institutions. Use of trade names is for identification only and does not imply endorsement by any of the groups named above.
Table 2. Prevalence of Current\textsuperscript{a}, Heavy\textsuperscript{b}, and Binge\textsuperscript{c} Drinking Among Hispanics, by Survey Language Preference, Stratified by Sex, Behavioral Risk Factor Surveillance System, 2005

| Drinking Status | Participants Interviewed in English, % (95% CI) | Participants Interviewed in Spanish, % (95% CI) | \(P\) Value\textsuperscript{d} |
|-----------------|-----------------------------------------------|-----------------------------------------------|------------------|
|                 | (\(n = 13,035\))                     | (\(n = 7,199\))                       |
| Overall         |                                          |                                              |                  |
| Current drinking| 54.3 (52.5-56.1)                        | 36.7 (34.4-39.0)                         | <.001            |
| Heavy drinking  | 6.4 (5.2-7.5)                          | 3.8 (3.0-4.6)                           | <.001            |
| Binge drinking  | 18.0 (16.4-19.6)                       | 14.4 (12.6-16.2)                        | .002             |
| Men (\(n = 7,493\)) |                                        |                                              |                  |
| Current drinking| 62.6 (59.9-65.3)                        | 53.6 (50.1-57.1)                         | <.001            |
| Heavy drinking  | 8.7 (6.8-10.7)                         | 6.5 (4.7-8.3)                           | .11              |
| Binge drinking  | 27.6 (24.9-30.3)                       | 25.1 (21.8-28.4)                        | .25              |
| Women (\(n = 12,741\)) |                                    |                                              |                  |
| Current drinking| 46.2 (44.1-48.3)                        | 18.3 (16.2-20.4)                         | <.001            |
| Heavy drinking  | 4.2 (3.0-5.4)                          | 0.8 (0.2-1.4)                           | <.001            |
| Binge drinking  | 8.6 (7.2-10.0)                         | 2.8 (2.0-3.6)                           | <.001            |

Abbreviation: CI, confidence interval.
\textsuperscript{a} Current drinking was defined as having at least 1 drink of any alcoholic beverage during the past 30 days.
\textsuperscript{b} Heavy drinking was defined as having more than 2 drinks per day for men and more than 1 drink per day for women during the past 30 days.
\textsuperscript{c} Binge drinking was defined as having 5 or more drinks on 1 occasion during the past 30 days.
\textsuperscript{d} \(P\) values derived from \(\chi^2\) test.

Table 3. Adjusted Logistic Regression for Likelihood of Current, Heavy, and Binge Drinking Among Hispanics (\(N = 20,234\))\textsuperscript{a}, by Survey Language Preference, Stratified by Sex, Behavioral Risk Factor Surveillance System, 2005

| Language Preference | Odds Ratio (95\% CI) | \(P\) Value\textsuperscript{d} |
|---------------------|----------------------|------------------|
|                     | Current Drinking\textsuperscript{b} | Heavy Drinking\textsuperscript{c} | Binge Drinking\textsuperscript{d} |
| Overall             |                        |                              |                      |
| English             | 1.75 (1.53-2.01)       | 1.96 (1.33-2.91)              | 1.41 (1.14-1.75)     |
| Spanish             | 1 [Reference]          | 1 [Reference]                | 1 [Reference]        |
| Men (\(n = 7,493\)) |                        |                              |                      |
| English             | 1.51 (1.22-1.86)       | 1.77 (1.11-2.82)              | 1.40 (1.08-1.79)     |
| Spanish             | 1 [Reference]          | 1 [Reference]                | 1 [Reference]        |
| Women (\(n = 12,741\)) |                        |                              |                      |
| English             | 2.42 (2.02-2.91)       | 3.82 (1.44-10.10)             | 2.51 (1.64-3.84)     |
| Spanish             | 1 [Reference]          | 1 [Reference]                | 1 [Reference]        |

Abbreviation: CI, confidence interval.
\textsuperscript{a} Adjusted for age, marital status, number of adults in the household, education, employment status, and region of the country.
\textsuperscript{b} Current drinking was defined as having at least 1 drink of any alcoholic beverage during the past 30 days.
\textsuperscript{c} Heavy drinking was defined as having more than 2 drinks per day for men and more than 1 drink per day for women during the past 30 days.
\textsuperscript{d} Binge drinking was defined as having 5 or more drinks on 1 occasion during the past 30 days.