



Published in final edited form as:

Alcohol Clin Exp Res. 2009 January ; 33(1): 150–159. doi:10.1111/j.1530-0277.2008.00824.x.

The Hispanic Americans Baseline Alcohol Survey (HABLAS): Alcoholic beverage preference across Hispanic national groups

Raul Caetano, MD, PhD, Patrice A. C. Vaeth, Dr.PH, Suhasini Ramisetty-Mikler, PhD, MPH,
and Lori A. Rodriguez, MPH

University of Texas School of Public Health, Dallas Regional Campus

Abstract

Background—U.S. Hispanics come from many countries in Latin America, which can lead to different beverage preferences in the U.S. This paper examines choice for drinking wine, beer, and liquor across 4 Hispanic national groups: Mexican Americans, Puerto Ricans, Cuban Americans, and South/Central Americans.

Methods—A sample of 5,224 individuals 18 years of age and older was selected using multistage cluster procedures from the household population in 5 metropolitan areas of the U.S.: Miami, New York, Philadelphia, Houston, and Los Angeles. The survey weighted response rate was 76%. Face-to-face interviews lasting 1 hour on average were conducted in the respondents' homes either in English or Spanish.

Results—Among men, beer drinkers consume the highest mean number of drinks per week in all national groups. Among women, this is true only of Puerto Ricans and Mexican Americans. Among men who drink beer, beer drinking constitutes 52% to 72% of total alcohol consumption. Among women who drink beer, beer consumption is associated with 32% to 64% of total consumption. Beer is the beverage most associated with binge drinking among Puerto Rican and Mexican American women, while among Cuban American and South/Central American this is seen for wine. Regression analyses showed no significant differences by national group in the likelihood of drinking 2 or fewer drinks (versus no drinks) of wine, beer, or liquor. Puerto Ricans were more likely (OR=1.47; 95% CI=1.00–2.14) than Cuban Americans to drink 3 or more drinks (compared to no drinks) of beer. There was no association between the likelihood of binge drinking and Hispanic national group.

Conclusions—Beverage preference across Hispanic national groups is similar. Beer is the preferred beverage. Alcohol control policies such as taxation and control of sales availability should apply equally to beer, liquor, and wine. Prevention interventions directed at different Hispanic national groups in the U.S. can be relatively uniform in their focus on the dangers associated with drinking different types of alcoholic beverages.

Keywords

Hispanic groups; beverage preference; survey; epidemiology

Introduction

In all countries of the world where alcohol is not prohibited, the alcoholic beverages consumed most often are wine, beer, and liquor. Although globalization is making beverage

preferences more uniform across countries, it is still possible to observe national preferences across nations. For instance, although beer and spirits consumption has increased in Southern European countries such as France, Italy, Spain, and Portugal, these countries are still perceived as wine cultures (World Health Organization, 2004). In South America, Chile and Argentina are also known for their higher consumption of wine compared to other countries in that continent (World Health Organization, 2004). For example, in Guatemala, Nicaragua, Costa Rica, and Peru spirits consumption comes first, followed by beer (Babor et al., 2003; World Health Organization, 2004). Overall, beer is the most frequently consumed beverage in Central and South America, with a recorded consumption of about 3 liters of pure alcohol per person (15 years or older) (Pan American Health Organization, 2007). Spirits come in second place with a recorded consumption of a little less than 2 liters per person, and wine is third with a recorded consumption of less than 1 liter per person. Over the past 25 years, beer and spirits consumption have increased and wine consumption has decreased in Central and South American nations (Pan American Health Organization, 2007). In the U.S., since 1998, there has been an increase in per capita consumption associated with an increase in wine and spirits consumption rather than beer. However, beer still accounts for most (1.19 of the total 2.24 gallons per capita) of the alcohol consumed in 2005 in the U.S. (Lakins et al., 2007).

Studies of alcoholic beverage preference are important for a number of reasons. First, patterns of consumption tend to vary across different beverages. Wine, for instance, is mostly consumed with meals and in relatively small amounts. This pattern of intake has been associated with beneficial effects for coronary heart disease, although the effect is not associated with wine only but with any alcoholic beverage (Rehm et al., 2003). Consumption of beer and spirits is different and tends to be more concentrated, with larger amounts (number of drinks) per occasion (Berger and Snortum, 1985; Rogers and Greenfield, 1999; Smart, 1996). Dawson (1993) reported that differences in beverage preferences between men (beer mostly) and women (wine and liquor) explain differences in alcohol consumption between genders. Rogers and Greenfield (1999) showed that beer consumption accounted for most of the alcohol consumed (67%), most of the alcohol consumed by the heaviest drinkers, and most of the alcohol consumed (81%) in hazardous occasions (5 or more drinks). Second, differences in patterns of consumption may lead to different alcohol-related problems. Consumption of alcohol in small doses but almost continuously, a pattern seen in Southern European countries, may increase the likelihood of chronic alcohol problems such as liver cirrhosis more so than problems such as public drunkenness, violence, and drinking and driving. The latter are more associated with the ingestion of larger amounts of alcohol per occasion (Rehm et al., 2003).

Evidence of differences in drinking patterns associated with different types of beverages can potentially influence prevention efforts and shape public health policy. For instance, in the U.S. a number of municipalities restrict wine and liquor sales to a greater extent than they do so with beer. This is partly historical tradition and partly associated with the general perception that beer is not as bad as liquor because of its lower alcohol content. The federal government also treats different types of beverages differently for taxes purposes. The federal excise tax rate per gallon is \$13.50 for spirits, \$1.07 for wine but only \$.58 for beer (<http://www.alcoholpolicy.niaaa.nih.gov>, accessed on August 12, 2008). This is in the face of the above mentioned close association between beer drinking and hazardous drinking (Rogers and Greenfield, 1999). Examining specific beverage preference and their association with risky drinking (binge) may help to refute existing myths and bring alcohol availability and taxation control more in line with reality of use. Policies designed to decrease alcohol availability through taxation may be manipulated so as to affect beverages that have a stronger association with types of alcohol problems that have a higher prevalence or are the target of specific prevention efforts. Unequal treatment of different beverages may

lead consumers to switch to cheaper and more available beverages, thus defeating control efforts.

The objective of this paper is to examine alcoholic beverage preference - wine, beer, and liquor - across Hispanic national groups in the U.S. This has not been done before. Thus, the present analysis covers a gap in the literature, expanding knowledge of alcohol consumption in this important ethnic group. Hispanics constituted 12.5% of the U.S. population in the 2000 Census (U.S. Census Bureau, 2000). A recent update indicates that Hispanics already are 14.4% of the population (U.S. Census Bureau, 2005), and will be about 25% of the U.S. population in 2050 (Falcon et al., 2001; U.S. Census Bureau, 2004). Given that many Hispanics are U.S.-born while many others come from a variety of countries in Latin America, beverage preferences should vary somewhat across national groups. Such variation should also be effected by the extent to which Hispanic immigrants have adapted to U.S. drinking norms, which would lead to a preference for beer, or come themselves from a beer-drinking country, or remain attached to a beverage preference characteristic of their national origin. Black neighborhoods had greater alcohol availability, with a higher mean number of alcohol outlets, also had more malt liquor

More specifically, the paper will examine beverage preference for wine, beer, or liquor, the extent of binge drinking by beverage type (5 or more drinks on occasion for men, 4 drinks for women), and sociodemographic predictors of beverage preference and binge drinking, including birthplace and acculturation. Taking into account the evidence on beverage preferences discussed above, the analyses in this paper should show beer as the beverage with highest weekly average consumption for men in all groups. Beer and its association with binge should be stronger among Mexican Americans than among other national groups, especially Cuban Americans and Puerto Ricans, given the use of liquor (rum) in Caribbean nations. Wine should be the beverage used mostly in moderation, that is, the beverage with lowest average volume of drinking and weakest association with binge drinking across all groups.

Materials and Methods

Sampling and Data Collection

Data were collected as part of the 2006 Hispanic Americans Baseline Alcohol Survey (HABLAS). The HABLAS employed a multistage cluster sample design in 5 selected metropolitan areas of the U.S.: Miami, New York, Philadelphia, Houston, and Los Angeles. These sites were chosen because of the large proportion of Hispanics of specific national groups in their population. After appropriately weighted, respondents are a representative sample of the Hispanic civilian non-institutionalized population aged 18 and older in these sites. A total of 5,224 individuals were interviewed, for a weighted response rate of 76%. The numerator for this rate is the number of respondents selected for interview and actually interviewed over all respondents selected for interview. Computer Assisted Personal Interviews (CAPI) lasting 1 hour on average were conducted in the respondents' homes by trained interviewers, all of which were bilingual English/Spanish. About 70% of the interviews were conducted in Spanish. Respondents received a \$25.00 incentive for their participation in the survey.

Questionnaire Translation

This took into account the possibility that respondents in different Hispanic national groups would use different idioms and words in their daily use of Spanish. Thus, once the English questionnaire was pre-tested and finalized, the questionnaire was translated into Spanish by a lead translator, and then independently back-translated. The 2 versions of the

questionnaire, original English and Spanish, were then harmonized by a group of 7 translators from different parts of Latin America: Cuba, Puerto Rico, Venezuela, Argentina, Peru, Mexico, and the Dominican Republic. This group of translators, working together, also created a roster of terms and words that appeared in the questionnaire and that had different usage across the Spanish spoken by different Hispanic national groups. This roster was provided to the interviewers, who then used it when necessary during interviews in the field.

Measurements

Beverage preference—These questions follow the recommendations on assessment of drinking set forth by an international group of alcohol researchers (Dawson and Room, 2000). Beverage preference was assessed with a series of beverage-specific questions covering usual frequency of drinking the beverage (11 categories ranging from never in the past 12 months to 3 or more times a day) and typical number of drinks consumed in a day (8 categories ranging from 1 drink to 17 or more). The **average drinks consumed per week** for each beverage were then estimated by combining the self-reported frequency and quantity of drinking each beverage in the past 12 months. First, the frequency of drinking in a week was estimated. For those with frequencies above once a day, the frequency was considered as 7 times a week given that the amount drank specifies drinks per day. The weekly frequency of drinking was then multiplied by the number of drinks consumed per day to arrive at the total consumption for each beverage. This weekly alcohol consumption variable was included in the model as a continuous independent variable.

In the multinomial analysis in Table 3, the sample was categorized as: a) abstaining, b) drinking up to 2 drinks per day of wine, beer or liquor; and c) drinking 3 or more drinks of wine, beer or liquor. These categories were chosen because 2 drinks per day is the recommended daily amount for men in the National Institute on Alcohol Abuse and Alcoholism guidelines for non-risky drinking. Also, in general population samples, the number of drinkers consuming larger quantities of alcohol per day (say, 4 or 5 or more) is not large, which makes coefficients from multivariate analysis unstable or impossible to estimate.

Beverage-specific drinking status—This status categorized respondents based on the combination of beverages (wine, beer, and liquor) they reported drinking in the past 12 months.

Binge drinking—This was defined as drinking 4 (women) or 5 (men) standard drinks per occasion (within 2 hours) in the past 12 months. Respondents were divided into 2 groups: those who reported binge drinking and those who did not report this type of drinking (reference group).

Beverage-specific binge frequency—This measures 3 levels of bingeing: a) binged once a month or more with the specified beverage; b) binged less than once a month with the specified beverage; and c) drinks the specified beverage, but did not binge in the past 12 months.

Ethnicity and Hispanic national origin—This was done in 2 steps and is based on self-identification. The first step included screening households by asking the household informant whether there were any adult household members that were Hispanic/Latino. Once these adults were identified, 1 was randomly selected to be interviewed. In the second step, during the survey interview, the ethnicity of the adult selected into the survey was confirmed through self-identification. Respondents were asked, “Which of these groups best describes your own ethnic identification”: Puerto Rican; Cuban; Cuban American; Mexican;

Mexican American (including Chicano/a); Dominican; South American; Central American. For analysis purposes, respondents were then categorized as Puerto Rican, Mexican/Mexican American, Cuban/Cuban American and South/Central American. Also, Dominicans' are grouped with South/Central Americans. This was done because of Dominicans' geographic proximity and cultural similarities with South/Central Americans and also because Cuban Americans, the group closest to Dominicans' in the Caribbean and an important Hispanic national group in the U.S., could then be analyzed separately.

Birthplace—Respondents were asked, “In what state, territory, or country were you born?” All of those who stated that they had been born in a country other than the U.S. or in a U.S. territory (including Puerto Rico) were coded as foreign-born.

Acculturation scale—This scale was developed by Caetano (1987). It is built from 12 questions covering the following information: daily use of and ability to speak, read, and write English and Spanish; preference for media (books, radio, and T.V.) in English or Spanish; ethnicity of people with whom respondents interact with at church, at parties, and the neighborhood in which respondents currently live and lived while growing up; and finally, a series of questions about values thought to be characteristic of the Hispanic lifestyle. With the exception of the items used to assess language use, all other items are coded in a 4-point Likert (strongly agree to strongly disagree) scale. The scale's reliability was assessed with Cronbach's Alpha (0.91) and the split-half method (0.87, Guttman split-half coefficient). The scale correlates positively with being U.S.-born (0.58) and with number of years of life in the U.S. (0.22), and correlates negatively with age (−0.36). It also has positive correlations with drinking and alcohol problems. All these correlations are in the expected direction and empirically confirm the scale's construct validity. A continuous score of acculturation was computed and the subjects were grouped into 3 categories - low, medium, and high acculturation level using tertiles

Other sociodemographic variables

Age: Based on the self-reported age, the respondents were grouped into 4 categories: 18–29; 30–39; 40–49; and 50 years or older (reference group).

Marital status: Respondents were classified into 3 groups: a) married or cohabiting (reference group); b) never married or never lived with someone; c) widowed, divorced, or separated; and d) disabled, never worked, or other.

Employment status: Respondents were categorized into 4 employment categories: a) employed part-time or employed full-time (reference group); b) unemployed (temporary illness, unemployed, looking/not looking for job, or in school); c) retired or homemaker; and d) disabled, never worked, or other.

Education status: Respondents were categorized into 5 education categories: a) less than high school (reference group); b) completed high school or GED; c) technical or vocational school; d) some college; and e) completed 4-year college or higher.

Income: Respondents were asked to identify the category into which their total household income fell from a list of 12 categories, beginning with <\$4,000 ending with a highest category of >\$100,000. However, nearly 20% of the total sample (n=1,069) either refused to provide their income or did not know their income. For these respondents, log-transformed income was multiply imputed using the Markov Chain Monte Carlo method (Schafer, 1997) as implemented in SAS PROC MI. Imputed incomes were transformed back to the 12 categories. Imputations were based on the respondent's education, employment status,

marital status, household size, age, metropolitan area of residence, Hispanic nationality, whether the respondent was born in the U.S., how long respondent had lived in the U.S., acculturation, whether the respondent had driven an automobile in the past year, and annual wage and salary data for the respondent's occupation in the case of employed respondents. The source of the wage and salary estimates was the Occupational Employment Statistics (OES) program, a cooperative program between the Bureau of Labor Statistics (BLS) and State Workforce Agencies (SWAs). The OES program produces employment and wage estimates for various occupations, excluding self-employed individuals. These data were publicly available online through the BLS website (<http://www.bls.gov/oes/>). State and metropolitan estimates were used corresponding to the 5 locations where interviews were conducted for this study. In all, 10 imputations were generated. Additionally, a single imputation based on the mean of the 10 log-transformed imputations was created for purposes of exploratory data analysis.

Statistical Analyses

To account for the multistage cluster sample design used in the HABLAS, the Software for Survey Data Analysis (SUDAAN; Research Triangle Institute, 2005) was used for all analyses. Analyses were conducted on data weighted to correct for unequal probabilities of selection into the sample. In addition, a post-stratification weight was applied, which corrects for nonresponse and adjusts the sample to known Hispanic population distributions on certain demographic variables (education, age, and gender for all sites; plus ethnicity for the Miami, New York, and Philadelphia samples).

For bivariate analyses, crosstabulations with chi-square options for categorical variables were performed to detect statistically significant associations. Logistic regression models were developed first using a single imputed value for the income variable (created based on the mean). Once the variables in the models were finalized, each model was run 5 times using 5 imputations, one at a time. Beta coefficients and their standard errors were extracted and imputed into SAS. The resulting matrix was analyzed with SAS's PROC MIANALYZE to arrive at final results. The exponentials of the beta coefficients and the confidence intervals for the standard errors were taken and reported as odds ratios and 95% confidence intervals for each outcome variable. Cuban Americans are used as the reference group in the multivariate analyses in Tables 3, 4 and 5. This is because previous analyses of this data set (Caetano et al., 2008a,b) showed that as a group they drink less, report less binge, have fewer DUI events and lower rates of alcohol abuse and dependence than the other three groups. Their use as a reference therefore means that odds ratios comparing other groups with Cuban Americans are positive (higher than 1), which helps in understanding as well as describing the results.

Results

Sociodemographic characteristics across Hispanic national groups

The sample is almost equally divided across genders in each national group (Table 1). Cuban Americans are older than the other three groups, with about half of that group in the category "50 years of age and older". Cuban Americans and South/Central Americans are better educated than the other two groups. About a quarter of Cuban Americans and a third of South/Central Americans have at least some college education, compared to 16.7% of Puerto Ricans, 16.1% of Mexican Americans. Puerto Ricans have a lower rate of fulltime employment, and a higher rate of people who are disabled/never worked. Puerto Ricans also have a higher rate of single individuals. Regarding income, most respondents in each group are in the lowest income category, reporting less than \$20,000 in annual income. Finally, Puerto Ricans have the highest proportions of individuals who are U.S. born, followed by

Mexican Americans. About 90% of South/Central Americans and Cuban American are foreign born.

Combined Mean Number of Drinks for Wine, Beer, and Liquor

Among men, the combined mean number of drinks per week of wine, beer, and liquor varies from a high of 18.2 (SE=2.6) for Puerto Ricans and 16.4 (SE=2.4) for Mexican Americans to 10.9 (SE=2.0) for Cuban Americans and 11.5 (SE=2.5) for South/Central Americans. Beer drinking constitutes 52% to 72% of this total consumption among men who drink beer alone or in combination with wine and/or liquor. For men who drink only wine and liquor, liquor is the major component of drinking among Puerto Ricans (63%) and Cuban Americans (57%). Among Mexican American men who do not drink beer, most drinking is done in the form of wine (70%); among South/Central American men who do not drink beer, drinking is equally split between wine (52%) and liquor (51%).

Among women, the total mean number of drinks per week is 9.5 (SE=2.9) for Puerto Ricans, 4.6 (SE=1.2) for Cuban Americans, 2.6 (SE=.5) for Mexican Americans, and 4.6 (SE=.9) for South/Central Americans. Beer consumption is associated with 32% to 64% of this total consumption. Among women drinkers who do not consume beer, wine constitutes 59% of the total among Puerto Ricans, 48% of the total among Cuban Americans, 51% of the total among Mexican Americans, and 60% of the total among South/Central Americans.

Mean Number of Drinks per Week and Frequency of Binge Drinking

Among men, beer is the beverage with the highest mean number of drinks consumed per week in all 4 national groups (Table 2). Mexican American men, followed by Puerto Rican men, consumed the greatest mean number of beer drinks per week and Cuban Americans drank the fewest mean number of drinks. The mean number of wine drinks per week was similar across national groups, ranging from 4.1 to 5.1 drinks per week. Puerto Rican men drank the highest mean number of liquor drinks per week, followed by Mexican American men.

Regarding frequency of binge drinking among men, the beverage associated with the highest rate of bingeing once a month or more is beer, regardless of national group (Table 2). About a third of Mexican American, Puerto Rican, and South/Central American men report binge drinking on beer once a month or more. Rates of binge drinking associated with liquor range from about a tenth among Mexican Americans to about a fifth among Cuban Americans. Cuban American men had the lowest report of bingeing once a month or more on wine, whereas Puerto Rican men had the highest.

Regarding beverage-specific consumption among women, the highest mean number of drinks per week is associated with beer drinking among Puerto Rican women, who also have the highest mean number of wine drinks per week. Differences in the mean number of drinks of beer across Cuban American, Mexican American, and South/Central American women are not large. Differences in means are more noticeable for wine, which is particularly low for Mexican American women. Finally, differences in means for liquor are also not very large across groups.

Puerto Rican women reported relatively high rates of binge drinking. About two fifths of them bingeed on beer and about a third bingeed on liquor at least once a month or more often. Rates of binge drinking on beer were similar for Cuban American, Mexican American, and South/Central American women. Rates of bingeing on wine and liquor were lowest among Mexican American women.

Distribution of Binge Events Across Wine, Beer and Liquor

Among men, between 58.5% and over three quarters of all binge occasions are associated with beer drinking, (Table 3). Liquor comes in second place for Puerto Ricans, while among Cuban Americans, Mexican Americans and South/Central Americans differences between wine and liquor are not large.

Among women, the distribution of binge events across beverages varies from group to group. Wine is responsible for a little over half of all binge events among Cuban Americans and South/Central Americans, for a quarter of binge events among Puerto Ricans but for less than a tenth of events among Mexican Americans. Beer is responsible for over half of all binge events among Puerto Ricans and Mexican Americans and for about a third and quarter of events among Cuban Americans and South/Central Americans, respectively. Liquor's association with binge events ranges from about a tenth among Puerto Rican women to about a quarter among Mexican Americans.

Sociodemographic Predictors of Wine, Beer, and Liquor Consumption

The multinomial regression models showed no significant differences by national group in the likelihood of drinking 2 or fewer drinks (versus no drinks) of wine, beer, or liquor (Table 4). Puerto Ricans, however, were more likely than Cuban Americans to drink 3 or more drinks of beer (compared to no drinks). In addition, Mexican Americans compared to Cuban Americans were less likely to drink 3 or more drinks of liquor.

Place of birth was associated with liquor consumption, but not beer or wine consumption. Compared to foreign-born individuals, those born in the U.S. were more likely to drink 2 or fewer (versus zero) and 3 or more (versus zero) drinks of liquor. Level of acculturation was associated with wine and liquor consumption. Those of mid-level acculturation were more likely than those of low acculturation to consume 3 or more drinks of wine and 2 or fewer drinks of liquor. Those of high acculturation were more likely to drink 2 or fewer drinks and 3 or more drinks of wine and liquor.

Sex was a significant predictor of consumption of all 3 beverage types. In comparison to women, men were at greater risk of drinking 3 or more drinks of wine, beer, and liquor. Men were also more likely to consume 2 or fewer drinks of beer and liquor. Age also predicted alcohol consumption, but for beer and liquor only. Eighteen to 29 year olds, in comparison to those 50 years and older, had greater odds of consuming 2 or fewer drinks of beer and 3 or more drinks of beer and liquor. Thirty to 39 year olds had higher odds of drinking beer, both 2 or fewer drinks and 3 or more drinks. Forty to 49 year olds, in comparison to their older counterparts, were more likely to consume 3 or more drinks of beer.

Additional predictors of consumption included level of education, employment status, and income. The consumption of 2 or fewer drinks of wine, beer, and liquor and the consumption of 3 or more drinks of wine was associated with higher education. Those with a high school diploma or GED were more likely to drink 2 or fewer drinks of liquor. Employment status was also associated with alcohol consumption with those who were unemployed due to job loss, illness, or school attendance being less likely to consume 2 or fewer drinks of wine than those who worked full- or part-time. Those who were retired or who were homemakers and those who were disabled or who had never worked were less likely to consume wine, beer, or liquor than those who were employed full- or part-time. Finally, the likelihood of wine, beer, and liquor consumption increased as the level of income also increased.

Sociodemographic, Beverage Preference and Other Drinking-Related Predictors of Binge Drinking

The purpose of this analysis is to assess the association between beverage type, sociodemographic variables, including national group, and binge drinking. Not surprisingly, the likelihood of binge drinking increased as the number of drinks consumed per week also increased. Those who drank beer only, liquor only, or any combination of wine, beer, or liquor were more likely to binge drink than those who drank only wine. There were no significant associations between the likelihood of binge drinking and Hispanic national group, level of acculturation, or place of birth (Table 5). Those who were younger, aged 18 to 29 years, in comparison to those 50 years and older, were more likely to have binged as were those with technical or vocational educational backgrounds, in comparison to those with less than a high school education. A protective effect was observed in relation to being retired or a homemaker. Compared to those who were employed full- or part-time, retirees and homemakers were about half as likely to participate in binge drinking.

Discussion

Results in this paper provide partial confirmation of the expectations put forward in the Introduction. Beer is indeed the beverage with highest mean consumption among men in all national groups. But among women this is true only of Puerto Rican and Mexican American women. Among women in the two other Hispanic national groups, Cuban American and South/Central American, the beverage with highest mean weekly consumption is wine. The frequency of binge drinking associated with beer is also higher than that linked to wine and liquor drinking. Beer is responsible for the majority of binge events reported by respondents in all national groups, and the proposed difference between Mexican Americans and Puerto Ricans and Cuban Americans was not confirmed. Finally, use of wine in moderation was not confirmed among Cuban American and South/Central American women among whom wine shows a strong association with binge drinking. Altogether, comparison of these results with those for the U.S. population (e.g., Dawson, 1993; Rogers and Greenfield, 1999) indicates that in regard to beverage preference, U.S. Hispanics do not differ much from the general U.S. population. These results do not confirm stereotypical views suggesting that Hispanics of Caribbean origin drink mostly liquor in the form of rum.

While there are no major differences in beverage choice across Hispanic national groups, research examining other drinking-related areas (e.g., types of problems) have reported considerable differences across national groups. For instance, Puerto Ricans and South/Central Americans are 3 and 2 times more likely to report DUI in the past 12 months than Cuban Americans (Caetano et al., 2008b). Mexican Americans and South/Central Americans seem to report more alcohol-related problems than Cuban Americans and Puerto Ricans (Caetano, 1988). In more recent analyses of HABLAS data on alcohol-related problems, Puerto Ricans, Mexican Americans, and Central/South Americans are all 2 to 3 times more likely than Cuban Americans to report 2 or more alcohol-problems (Vaeth, P.A.C., et al., submitted for publication; The Hispanic Americans Baseline Alcohol Survey (HABLAS): Alcohol problems across national groups and gender). Cuban Americans are also less likely to report substance use disorders than Puerto Ricans (Alegria et al., 2007). This similarity in beverage choice, side-by-side with disparity in drinking-related consequences, is probably associated with the complex nature of the etiology of alcohol problems. Thus, while the total drinking volume and the pattern of alcohol consumption are the main culprits, individuals' variation in their response to alcohol, as well as social and cultural responses to drinking, also play an important part in the genesis of problems.

These similarities and variations are of importance for understanding alcohol consumption among Hispanics in the U.S. as well as for responding to alcohol problems with treatment

and prevention. First, variation across different types of problems provides a base for tailoring treatment and prevention interventions. For instance, Mexican American and South/Central American men born in the U.S. seem to be at a considerable higher risk of engaging in drinking and driving than other groups (Caetano et al., 2008b). This, plus the knowledge that about 70% of all binge drinking by men in these groups is associated with beer, suggest that targeted prevention interventions to reduce drinking and driving should be linked with beer drinking. Some of these targeted interventions have already been developed and implemented (e.g., Mothers Against Drinking and Driving “Passa las Llaves”). Perhaps further refinement with a focus on U.S.-born Mexican Americans and beer consumption would increase these programs’ effectiveness.

The complex picture associated with beverage choices, which may influence the development of drinking-related consequences, can be seen in the results for the multivariate analyses in Tables 4 and 5. The multinomial analysis in Table 4 shows a different sociodemographic profile of predictors for wine, beer, and liquor. In fact, few variables in that table are associated with each of the 3 beverages in question in a consistent way. Gender is one of them, with men consuming more of each of the beverages than women; a traditional result in alcohol studies (Hilton, 1991; Substance Abuse and Mental Health Services Administration, 2007). Individuals with at least some college education and those with higher income also seem consistently more likely to drink wine, beer, and liquor than those with less than a high school education and those with lower income. This too, is a relatively common finding in alcohol studies, which is best explained by the fact that those with higher income have more disposable money to spend on alcohol (Grant and Harford, 1990; Grant and Dawson, 1997; Substance Abuse and Mental Health Services Administration, 2007). Those with higher education may have better jobs, more social opportunities to drink, and perhaps more liberal views towards alcohol consumption. The reverse of this picture is found among those who are disabled, who are retired, or who are homemakers. These individuals are less likely to drink wine, beer, or liquor than those who are employed, probably because of illness or more conservative attitudes towards alcohol consumption. Finally, foreign-born individuals are more likely to drink liquor than those who are U.S.-born. This may have to do with the fact that the U.S. is a beer drinking country, and those who are foreign-born may be used to drinking more liquor than beer because of cross-country differences in beverage choices.

Binge drinking seems to be more common among beer drinkers, liquor drinkers, and those who drink any combination of wine, beer, and liquor than among those who drink wine alone. The fact that wine is mostly drunk during meals at home or in restaurants, and is culturally not associated with occasions in which a large number of drinks are consumed probably explains this association. However, this is somewhat speculative because this paper does not have an analysis of situations in which specific beverages are drunk. Curiously, although beer is responsible for most binge drinking episodes, liquor drinkers are the ones most likely to binge. These contrasting results can be explained by the fact that there are more beer drinkers than liquor drinkers, which then generates more beer-related binge events than liquor-related events. However, at an individual level, liquor drinkers are more likely to binge than beer drinkers.

This study has strengths and some limitations. It collected comprehensive information on alcohol consumption from representative samples of Hispanic national groups in five large metropolitan areas in the U.S. However, the consumption of malt liquor beverages was not covered, which may lead to underestimation of the overall amount of alcohol consumed and inability to identify respondents who used these beverages. This is a type of beer, stronger in alcohol content (5.5% to 8.2%) than regular beer, which is also served in larger (40 OZ) containers than regular beer. Previous studies of malt liquor drinking have associated this

beverage with homelessness, poverty, unemployment, higher alcohol consumption, higher AUDIT scores, problem drinking in general, and illicit drug use (Bluthenthal et al., 2005; Chen and Paschall, 2003; Collins et al., 2007; Graves and Kaskutas, 2002). Face-to-face interviews were conducted in English or Spanish, thus allowing for the selection of respondents who were not English-speakers and for the collection of detailed data on a variety of areas. The survey also achieved a high response rate. However, nearly one quarter of the selected respondents refused to be interviewed. The data under analysis are cross-sectional in nature and do not allow for considerations of time order in the analyses. Respondents may have under-reported some of the behaviors under analysis. If under-reporting is higher in a particular group than in others, this could affect the relationships discussed in this study.

In conclusion, there are more similarities in beverage preference across Hispanic national groups than there are differences. In general, beer is the beverage drunk in higher volume and most of the high risk drinking situations (binge) are associated with beer drinking. Two important implications for prevention and policy stem from these findings. First, although lower in alcohol content, beer consumption is as dangerous as the consumption of liquor or spirits. Alcohol control policies such as taxation and control of sales availability should apply equally to wine, beer, and liquor. Second, prevention interventions directed at different Hispanic national groups in the U.S. can be relatively uniform in their focus on the dangers associated with drinking different types of alcoholic beverages.

Acknowledgments

Work on this paper was supported by a grant (RO1-AA013642) from the National Institute on Alcohol Abuse and Alcoholism to the University of Texas School of Public Health.

References

- Alegria M, Mulvaney-Day NE, Torres M, Polo A, Cao Z, Canino GJ. Prevalence of psychiatric disorders across Latino subgroups in the United States. *Am J Public Health*. 2007; 97:68–75. [PubMed: 17138910]
- Babor, TF.; Caetano, R.; Casswell, S.; Edwards, G.; Giesbrecht, N.; Graham, K.; Grube, J.; Gruenewald, PJ.; Hill, L.; Holder, H.; Homel, R.; Osterberg, E.; Rehm, J.; Room, R.; Rossow, I. *Alcohol: No Ordinary Commodity- Research and Public Policy*. Oxford University Press; Oxford London: 2003.
- Berger DE, Snortum JR. Alcoholic beverage preferences of drinking-driving violators. *J Stud Alcohol*. 1985; 46:232–239. [PubMed: 4010301]
- Bluthenthal RN, Browntaylor D, Guzman-Becerra N, Robinson PL. Characteristics of malt liquor beer drinkers in a low-income, racial minority community sample. *Alcohol Clin Exp Res*. 2005; 29:402–409. [PubMed: 15770116]
- Caetano R. Acculturation and drinking patterns among U.S. Hispanics. *Br J Addict*. 1987; 82:789–799. [PubMed: 3311103]
- Caetano R. Alcohol use among Hispanic groups in the United States. *Am J Drug Alcohol Abuse*. 1988; 14:293–308. [PubMed: 3189253]
- Caetano R, Ramisetty-Mikler S, Rodriguez LA. The Hispanic Americans Baseline Alcohol Survey (HABLAS): Rates and predictors of alcohol abuse and dependence across Hispanic national groups. *Journal of Studies on Alcohol and Drugs*. 2008a; 69:441–448. [PubMed: 18432387]
- Caetano R, Ramisetty-Mikler S, Rodriguez LA. The Hispanic Americans Baseline Alcohol Survey (HABLAS): Rates and predictors of DUI across Hispanic national groups. *Accid Anal Prev*. 2008b; 40:733–741. [PubMed: 18329428]
- Chen MJ, Paschall MJ. Malt liquor use, heavy/problem drinking and other problem behaviors in a sample of community college students. *J Stud Alcohol*. 2003; 64:835–842. [PubMed: 14743947]

- Collins RL, Bradizza CM, Vincent PC. Young-adult malt liquor drinkers: prediction of alcohol problems and marijuana use. *Psychol Addict Behav.* 2007; 21:138–146. [PubMed: 17563133]
- Dawson DA. Patterns of alcohol consumption: Beverage effects on gender differences. *Addiction.* 1993; 88:133–138. [PubMed: 8448504]
- Dawson DA, Room R. Towards agreement on ways to measure and report drinking patterns and alcohol-related problems in adult general population surveys: The Skarpo conference overview. *J Subst Abuse.* 2000; 12:1–21. [PubMed: 11288465]
- Falcon, A.; Aguirre-Molina, M.; Molina, CW. Latino health policy: Beyond demographic determinism. In: Aguirre-Molina, M.; Molina, CW.; Zambrana, RE., editors. *Health Issues in the Latino Community.* Josey-Bass; 2001. p. 3-22.
- Grant B, Harford T. The relationship between ethanol intake and DSM-III alcohol dependence. *J Stud Alcohol.* 1990; 51:448–456. [PubMed: 2232799]
- Grant BF, Dawson DA. Age at onset of alcohol use and its association with DSM-IV alcohol abuse and dependence: results from the National Longitudinal Alcohol Epidemiologic Survey. *J Subst Abuse.* 1997; 9:103–110. [PubMed: 9494942]
- Graves K, Kaskutas LA. Beverage choice among native american and african american urban women. *Alcohol Clin Exp Res.* 2002; 26:218–222. [PubMed: 11964561]
- Hilton, ME. Trends in drinking problems and attitudes in the U.S., 1979–1984. In: Clark, WB.; Hilton, M., editors. *Alcohol in America: Drinking practices and problems.* State University of New York Press; Albany, NY: 1991. p. 139-148.
- Lakins, NE.; LaVallee, RA.; Williams, GD.; Yi, H-y. *Apparent per capita alcohol consumption: National, state and regional trends, 1977–1990.* Arlington, VA: 2007.
- Pan American Health Organization. *Alcohol and Public Health in the Americans: A Case for Action.* Washington, D.C.: 2007.
- Rehm J, Room R, Graham K, Monteiro M, Gmel G, Sempos CT. The relationship of average volume of alcohol consumption and patterns of drinking to burden of disease: An overview. *Addiction.* 2003; 98:1209–1228. [PubMed: 12930209]
- Software for survey data analysis (SUDAAN). Release 9.0.1. Research Triangle Institute; Research Triangle Park, NC: 2005.
- Rogers JD, Greenfield TK. Beer drinking accounts for most of the hazardous alcohol consumption reported in the United States. *J Stud Alcohol.* 1999; 60:732–739. [PubMed: 10606483]
- Schafer, JL. *Analysis Of Incomplete Multivariate Data.* Chapman & Hall; London: 1997.
- Smart RG. Behavioral and social consequences related to the consumption of different beverage types. *J Stud Alcohol.* 1996; 57:77–84. [PubMed: 8747505]
- Substance Abuse and Mental Health Services Administration. *The NSDUH report: Gender differences in alcohol use and alcohol dependence or abuse: 2004 and 2005.* Rockville, MD: 2007.
- U.S. Census Bureau. *Census 2000 Demographic Profile Highlights.* Vol. 2007. 2000.
- U.S. Census Bureau. *Census Bureau Projects Tripling of Hispanic and Asian Populations in 50 Years; Non-Hispanic Whites May Drop To Half of Total Population.* Vol. 2007. 2004.
- U.S. Census Bureau. *American Community Survey Data Profile Highlights.* Vol. 2007. 2005.
- World Health Organization. *Global Status Report on Alcohol 2004: Part II.* Vol. 2008. World Health Organization, Department of Mental Health and Substance Abuse; Geneva, Switzerland: 2004.

Table 1

Unweighted proportions of sociodemographic characteristics across Hispanic national groups

	Puerto Rican	Cuban American	Mexican American	South/Central American
	(n= 1327 – 1335)	(n= 1323 – 1327)	(n= 1279 – 1288)	(n= 1269 – 1274)
Gender				
Male	51.5	49.9	49.7	50.0
Female	48.5	50.1	50.3	50.0
Age				
18–29	27.2	11.3	32.5	26.3
30–39	20.9	15.5	31.3	23.7
40–49	19.3	19.1	20.0	22.6
50+	32.6	54.0	16.2	27.4
Education				
< High School	53.1	38.4	53.8	36.9
HS diploma/GED	28.3	27.2	25.6	28.3
Technical/vocational school	1.9	8.4	4.5	4.7
Some college	12.7	12.4	10.6	18.4
College graduate/professional school	4.0	13.6	5.5	11.6
Employment status				
Full/part time employed	39.7	50.9	59.6	66.1
Unemployed: temp illness/unemployed looking/ not looking for work/in school	17.6	7.6	12.1	13.7
Retired/Homemaker	20.0	29.5	22.7	13.7
Disabled/never worked/other	22.7	12.0	5.6	6.5
Marital Status				
Married/Living with spouse/someone	35.8	51.2	57.4	46.4
Married not living with spouse/Legally separated/divorced/Widowed	28.0	33.1	17.8	27.1
Never married/Never lived with someone	36.2	15.7	24.8	26.5
Income				
<20 K	68.1	59.8	57.5	54.3
20–40K	21.8	25.8	28.3	30.2
40–60K	5.1	8.7	7.8	7.8
60+K	5.0	5.7	6.4	7.6
Place of birth				

	Puerto Rican	Cuban American	Mexican American	South/Central American
	(n= 1327 – 1335)	(n= 1323 – 1327)	(n= 1279 – 1288)	(n= 1269 – 1274)
U.S.-Born	41.0	7.6	27.3	9.9
Foreign-Born	59.0	92.4	72.7	90.1

Table 2
Beverage-Specific Consumption and Frequency of Binge Drinking by Hispanic National Group by Gender

		Puerto Rican	Cuban American	Mex. American	S/C American
Males	Mean number of drinks per week ^{a, b}	5.1 ± 1.2 (453)	4.1 ± 2.2 (426)	4.8 ± 1.1 (441)	4.1 ± 1.2 (439)
	Beer ^c	11.2 ± 1.6 (452)	7.0 ± 1.2 (427)	12.0 ± 1.5 (441)	7.9 ± 1.6 (442)
	Liquor	7.3 ± 1.8 (452)	3.9 ± 0.9 (427)	5.3 ± 1.8 (440)	3.4 ± 0.9 (442)
Binging once a month or more ^a	Wine [*]	19.6 (218)	4.6 (248)	13.3 (202)	10.3 (272)
	Beer	35.0 (403)	26.7 (356)	36.8 (404)	32.3 (384)
	Liquor	19.9 (283)	20.7 (218)	13.4 (205)	16.5 (270)
Females	Mean number of drinks per week ^{a, b}	4.2 ± 1.9 (271)	3.4 ± 1.5 (233)	0.7 ± 0.1 (218)	2.8 ± 0.8 (286)
	Beer	7.9 ± 3.4 (271)	2.2 ± 0.6 (232)	2.0 ± 0.5 (218)	1.9 ± 0.3 (285)
	Liquor	1.8 ± 0.3 (271)	1.7 ± 0.5 (232)	1.0 ± 0.4 (218)	1.8 ± 0.6 (286)
Binging once a month or more ^a	Wine ^{**}	17.3 (180)	11.5 (174)	5.1 (141)	14.8 (238)
	Beer ^{**}	40.2 (191)	16.4 (127)	17.2 (141)	17.9 (187)
	Liquor ^{**}	30.6 (160)	15.4 (100)	6.1 (131)	12.7 (143)

^a Among all current drinkers of the specified beverage (numbers in the parenthesis are unweighted Ns used as denominators)

^b Continuous variable.

^c T-test significant between: 1) Puerto Rican and Cuban American; 2) Cuban American and Mexican American.

^d T-test significant between Mexican American and S/C American.

* $p < 0.05$

** $p < 0.01$

Table 3
 Proportion of Beverage-Specific Binge Drinking Events by Hispanic National Group by Gender Among Beverage-Specific Bingers

	Distribution of binge events by beverage type	Puerto Rican	Cuban American	Mexican American	South/Central American
Male	Wine	10.4 (3441.0)	21.4 (4668.0)	12.6 (4245.0)	9.6 (1602.0)
	Beer	58.5 (19356.0)	58.3 (12712)	68.8 (23266.5)	76.8 (12828.0)
	Liquor	31.1 (10285.0)	20.3 (4433.0)	18.6 (6285.5)	13.6 (2271.0)
	Total	100 (33082.0)	100 (21813.0)	100 (33797.0)	100 (16701.0)
Female	Wine	27.8 (5311.0)	54.6 (3351.5)	6.9 (252.5)	59.4 (4047.5)
	Beer	61.1 (11674.0)	29.0 (1784.0)	67.0 (2440.0)	23.0 (1564.0)
	Liquor	11.1 (2122.0)	16.4 (1008.5)	26.1 (950.0)	17.6 (1198.0)
	Total	100 (19107.0)	100 (6144.0)	100 (3642.5)	100 (6809.5)

Note: Numbers in parenthesis are the number of reports of bingeing for that specific beverage within the Hispanic national group;

Table 4
Odds Ratios and 95% Confidence Intervals from Multinomial Logistic Regression Models Predicting Wine, Beer, and Liquor Consumption

	Wine (n=5,163)				Beer (n=5,164)				Liquor (n=5,164)			
	≤ 2 Drinks		3+ Drinks		≤ 2 Drinks		3+ Drinks		≤ 2 Drinks		3+ Drinks	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Male (Ref: Female)	1.06	0.86-1.30	1.82***	1.29-2.57	2.00***	1.60-2.51	6.80***	5.19-8.91	1.60***	1.31-1.96	4.07***	2.89-5.75
Age (Ref: 50+ years)												
18-29	0.98	0.71-1.35	0.75	0.43-1.31	1.61*	1.12-2.31	1.75*	1.15-2.69	1.20	0.84-1.72	3.08***	1.74-5.48
30-39	1.02	0.75-1.40	1.18	0.75-1.85	1.57**	1.16-2.14	2.23***	1.57-3.17	1.21	0.88-1.68	1.54	0.89-2.66
40-49	0.90	0.68-1.19	0.84	0.50-1.40	1.22	0.90-1.64	1.51*	1.05-2.17	0.99	0.69-1.41	1.46	0.86-2.48
Hispanic subgroup (Ref: Cuban American)												
Puerto Rican	0.74	0.52-1.03	1.04	0.63-1.70	1.02	0.71-1.48	1.47*	1.00-2.14	1.05	0.73-1.53	1.49	0.90-2.46
Mexican American	0.80	0.59-1.08	0.60	0.36-1.01	0.93	0.66-1.31	0.90	0.60-1.37	1.09	0.76-1.57	0.37***	0.21-0.65
South/Central American	1.07	0.82-1.40	1.33	0.85-2.07	0.93	0.68-1.28	0.91	0.64-1.30	1.04	0.76-1.43	0.96	0.60-1.55
Marital Status (Ref: Married/Living with spouse/Living with someone)												
Married not living with spouse/Legally separated/Divorced/Widowed	1.08	0.85-1.38	0.89	0.58-1.35	1.02	0.79-1.33	1.15	0.84-1.59	1.06	0.83-1.35	1.41	0.95-2.11
Never married/Never lived with someone	1.00	0.75-1.32	0.73	0.49-1.07	1.13	0.86-1.48	1.14	0.85-1.54	1.13	0.85-1.50	1.07	0.76-1.52
Education Level (Ref: < High School)												
HS diploma/GED	1.09	0.85-1.41	0.73	0.50-1.08	1.24	0.95-1.61	0.80	0.60-1.07	1.35*	1.05-1.72	0.69	0.47-1.01
Technical/vocational school	1.50	0.90-2.49	0.88	0.44-1.76	1.56	0.96-2.54	0.94	0.56-1.57	1.61	0.99-2.61	1.57	0.77-3.22
Some college	1.71***	1.25-2.33	1.74*	1.13-2.69	1.42*	1.02-1.96	0.80	0.54-1.17	2.09***	1.56-2.80	1.25	0.77-2.01
College graduate/professional school	2.82***	1.88-4.22	2.01**	1.21-3.36	1.56*	1.04-2.33	0.79	0.47-1.32	2.59***	1.79-3.75	0.99	0.49-2.01
Employment Status (Ref: Full/part-time employment)												
Unemployed; temp illness/unemp looking/unemp, not looking/in school	0.75*	0.56-1.00	1.08	0.68-1.73	0.76	0.56-1.02	0.65*	0.44-0.96	0.96	0.73-1.26	1.10	0.68-1.79

	Wine (n=5,163)				Beer (n=5,164)				Liquor (n=5,164)			
	≤ 2 Drinks		3+ Drinks		≤ 2 Drinks		3+ Drinks		≤ 2 Drinks		3+ Drinks	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Retired/Homemaker	0.53***	0.39-0.71	0.58*	0.34-0.99	0.46***	0.32-0.65	0.27***	0.17-0.43	0.62**	0.43-0.88	0.65	0.34-1.22
Disabled/never worked/other	0.55**	0.37-0.81	0.43*	0.22-0.83	0.55**	0.37-0.83	0.62*	0.41-0.93	0.60**	0.41-0.86	0.80	0.45-1.44
Income ^a	1.01***	1.00-1.01	1.00	1.00-1.01	1.01***	1.00-1.01	1.00	1.00-1.01	1.01**	1.00-1.01	1.01***	1.01-1.02
U.S.-Born (Ref: Foreign-Born)	1.15	0.85-1.56	1.05	0.68-1.61	1.17	0.84-1.64	1.39	0.96-2.01	1.70***	1.26-2.27	1.62*	1.12-2.35
Acculturation Level (Ref: Low)												
Medium	1.11	0.88-1.40	1.69**	1.14-2.51	0.81	0.63-1.05	0.98	0.71-1.37	1.38*	1.06-1.79	0.86	0.55-1.36
High	1.47**	1.10-1.97	1.94**	1.23-3.03	0.87	0.64-1.16	0.98	0.69-1.39	1.79***	1.33-2.41	1.65*	1.06-2.55

* p<0.05

** p<0.01

*** p<0.001

^a Continuous variable.

Table 5

Odds Ratios and 95% Confidence Intervals from Logistic Regression Model Predicting Any Binge Drinking Among Current Drinkers (n=2,698)

	OR	95% CI
Male (Ref: Female)	0.80	0.62–1.04
Age (Ref: 50+ years)		
18–29	1.71 *	1.11–2.65
30–39	1.33	0.87–2.04
40–49	1.40	0.96–2.05
Hispanic subgroup (Ref: Cuban American)		
Puerto Rican	1.42	0.92–2.19
Mexican American	0.79	0.55–1.14
South/Central American.	1.01	0.70–1.45
Marital Status (Ref: Married/Living with spouse/Living with someone)		
Married not living with spouse/Legally separated/divorced/Widowed	1.06	0.75–1.50
Never married/Never lived with someone	0.96	0.72–1.29
Education Level (Ref: < High School)		
HS diploma/GED	0.78	0.57–1.07
Technical/vocational school	1.80 *	1.06–3.07
Some college	0.96	0.67–1.37
College graduate/professional school	0.79	0.50–1.26
Employment Status (Ref: Full/part-time employment)		
Unemployed: temp illness/unemployed looking/unemployed, not looking/in school	0.94	0.63–1.38
Retired/Homemaker	0.53 **	0.34–0.82
Disabled/never worked/other	0.96	0.58–1.61
Income ^a	1.00	0.99–1.00
Drinks per week ^a	1.31 ***	1.23–1.40
Beverage Specific Status: Wine, Beer, Liquor Combinations (Ref: Wine only)		
Beer only	2.00 *	1.10–3.63
Liquor only	5.12 ***	2.46–10.65
Any combination of wine, beer, liquor	2.56 **	1.47–4.47
U.S.-Born (Ref: Foreign-Born)	0.89	0.65–1.23
Acculturation Level (Ref: High)		
Medium	1.15	0.81–1.63
Low	1.39	0.92–2.11
R- Square	16.56%	

*
p<0.05

**
p<0.01

p<0.001

^aContinuous variable.