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Ethnic Drinking Cultures and Alcohol Use among Asian American Adults: Findings from a National Survey

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Abstract — Aims: To investigate the influence of ethnic drinking cultures on alcohol use by Asian Americans and how this influence may be moderated by their level of integration into Asian ethnic cultures. Methods: A nationally representative sample of 952 Asian American adults extracted from the Wave 2 National Epidemiologic Survey of Alcohol and Related Conditions data was used. Multiple logistic and linear regression models were fitted, some of which were stratified by nativity. Results: Controlling for financial stress, discrimination and demographic variables, a hypothesized, positive relationship between ethnic drinking cultures and alcohol outcomes held for most drinking outcomes. A hypothesis on the moderating effect of integration into ethnic cultures indicated by ethnic language use was supported for US-born Asian Americans. Conclusion: Ethnic drinking cultures may significantly influence alcohol use by Asian Americans. The influence of ethnic drinking cultures may be conditioned by the degree of integration into the ethnic cultures. To inform alcohol interventions for reducing harmful and hazardous alcohol use among immigrants, future research needs to explore the cultural and social processes occurring in immigrant communities that might significantly influence drinking.

INTRODUCTION

In this study, we examined the influence of ethnic drinking cultures on alcohol consumption among Asian Americans in the USA, an ethnically and socioeconomically heterogeneous population that is among the least-investigated racial groups in alcohol research. While embracing a fundamental premise of acculturation research—namely, that immigration often involves cultural change and adaptation—this study is motivated in part by certain limitations of the acculturation paradigm. In a departure from prior work on acculturation and alcohol use, our approach shifts attention from the ‘receiving’ country (in this case, the USA) to the drinking cultures of the Asian countries of origin, examining their potential influence on drinking patterns of Asian Americans and investigating how this influence may be shaped by an individual’s nativity and the level of integration into an Asian ethnic culture.

Acculturation approach to understanding drinking behavior

Much research on immigrant health and health behaviors, including alcohol use, has been dominated by the acculturation paradigm. The central premise of this paradigm is that immigrants are likely to change their behavior and attitudes as they come into contact with the ‘host’ society, conforming to those of the latter (Rogler et al., 1991). Findings of past acculturation research on alcohol use among Asian Americans, the racial group presently of interest, have been mixed. Some studies have reported that acculturation is associated with increased alcohol use for Asian American adolescents (Hahm et al., 2004) and young adults (Hendershot, 2008), but others have not supported the acculturation thesis (Lo and Globetti, 2001; Ayers et al., 2011).

Many researchers have noted limitations of the acculturation approach (Berry, 1980; Oetting and Beauvais, 1991; Salant and Lauderdale, 2003; Hunt et al., 2004; Abraido-Lanza et al., 2006). A fundamental concern is the lack of a clearly specified reference group (Hunt et al., 2004), with the presumption that White Americans typify ‘Americanness’ (Abraido-Lanza et al., 2006) despite the tremendous diversity of US cultural practices, even among White Americans. Related to this is a common presumption that alcohol consumption following an immigrant’s arrival in the USA is largely attributable to the influence of US culture (Gutmann, 1999). As a result, ethnic cultures that immigrants bring to this country and which may influence their health behavior (including alcohol use) are overlooked. Still another limitation of acculturation research concerns the acculturation measures employed, often involving proxy variables such as nativity or language use, which do not have clear bearings on the specific health issue at hand (Abraido-Lanza et al., 2006). The shortcomings of acculturation measures also make it difficult to elucidate the specific mechanisms through which acculturation influences health behavior (Salant and Lauderdale, 2003).

Culture and alcohol use

A culture-focused approach is relevant to, and appropriate for, the investigation of drinking behaviors among immigrants and their descendants. Drinking is social: in many parts of the world people drink together to enhance sociability and to foster or express unity (Partanen, 1991; Heath, 2000). The practices of drinking are, as a rule, subject to intense and detailed normative regulations, many of which are informal, but some of which may take the form of more explicit norms or sanctions (Partanen, 1991). This insight has informed research on the influence of intimate social networks (such as family and friends) on alcohol use (Holmila et al., 2009; Joosten et al., 2009; Ayers et al., 2011).

It has also been argued that such an insight can be extended to society at large—an enormous social network in which a system of actors is tied together by different types of social relationships and where each actor is influenced by other members of their culture—or, at least, to large
segments of society (Skog, 1985). The implication is that drinking cultures pervasive in a population or subpopulation may profoundly shape individual drinking behaviors by conveying norms regarding acceptable levels and patterns of alcohol use. Prior qualitative research has compared drinking cultures across countries and noted significant differences in attitudes, norms and behavior (Room, 2005), using, most prominently, the loosely defined dichotomy of ‘wet’ versus ‘dry’ drinking cultures, with the former characterized mainly by high per capita consumption and more liberal drinking norms and the latter by a stronger temperance tradition resulting in low per capita consumption (Room and Makela, 2000). These concepts have been operationalized in recent research by using international data on per capita alcohol consumption and abstinence rates as indicators (Holmila et al., 2009; Joosten et al., 2009). To our knowledge, only one US study examined the influence of macro-level drinking cultures using state-level binge drinking rates as a proxy (Nelson et al., 2005). Models of cultural influence on drinking have rarely been tested, especially with immigrant samples.

The current study

To address this gap and enhance understanding of the potential influence of macro-level drinking cultures, our study examines immigrants’ ethnic drinking cultures in relation to immigrant drinking behaviors in the USA. Asian Americans are ethnically diverse, representing over 20 national origins in the USA alone (Zhou and Xiong, 2005). Asian drinking cultures are also diverse, with greater alcohol consumption in some ethnic groups, such as Korean and Japanese, than in others such as Chinese (Caetano et al., 1998). Given the diversity in ethnicity, as well as in drinking cultures, Asian Americans constitute an ideal population for the current investigation.

In investigating the influence of ethnic drinking cultures, we specifically aim to address several limitations of acculturation-focused research on alcohol use. First, by examining ethnic drinking cultures as a predictor, we focus on the specific aspect of cultures most relevant to drinking behaviors, thus avoiding the common practice of using an acculturation measure with no specific bearing on the health behavior under investigation. Second, our focus on ethnic drinking cultures also allows us to shift attention away from the cultures of the ‘receiving’ society (in this case, the USA) to the ethnic cultures that immigrants bring to the USA. In so doing, we avoid the pitfall of using the imagined, uniform cultural practices of the receiving society as the reference point, which may be particularly problematic given the presence of extremely diverse cultures in the USA, unparalleled elsewhere in the world.

In the broader sense, ethnic drinking cultures may be defined as the values, norms and behaviors related to drinking that are pervasive in an immigrant’s country of origin (COO). Largely informed by prior research characterizing drinking cultures as wet versus dry drinking cultures or as being on a continuum between the two, depending upon the extent to which alcohol use is prevalent in a society (Holmila et al., 2009; Joosten et al., 2009; Ayers et al., 2011), we focused on one specific aspect of ethnic drinking cultures, drinking prevalence, using a working definition of the extent to which alcohol is consumed in the COO. Drinking prevalence is a reasonable choice for the current study because of its relevance for the drinking outcomes we used, which mainly capture the quantity and frequency of alcohol use.

This study also recognizes certain conditions under which ethnic cultures are more likely to influence drinking among immigrants. For example, the extent to which an individual is integrated into the ethnic cultures of origin may affect the strength of the relationship between ethnic cultures and health behavior. We investigate one factor that represents such integration: use of ethnic language. In the acculturation process, host-language adoption tends to increase proficiency in the activities and rituals of the new culture. By contrast, retaining the ethnic language post-immigration may help immigrants or their descendants remain integrated in their original ethnic cultures. Ethnic language provides a link to the cultures in which immigrants or their descendants were raised (Phinney et al., 2001) and is an ideal medium for facilitating intra-group cohesion (Ward and Hewstone, 1985). Affiliation with members of one’s own ethnic group may be another factor indicating a sustained connection to the cultures of origin and a continued sense of ethnic identity (Ying and Liese, 1994; Ying et al., 2008). In this secondary analysis, we focus on ethnic language use, as indicators of ethnic affiliation were unavailable.

While a main focus of our study is on ethnic drinking cultures, we also incorporate insights from recent research focused on health disparities, which tend to view poorer health and adverse health behaviors of low status groups as shaped by experiences of social and economic disadvantage in the USA. Racial discrimination and unfair treatment are linked with heavy drinking and alcohol problems among racial/ethnic minorities (Martin et al., 2003; Mulia et al., 2008; Zemore et al., 2011), including Asian Americans (Gee et al., 2007; Chae et al., 2008). Similarly, economic hardship has been linked with adverse alcohol use outcomes, with chronic poverty associated with frequent heavy drinking and alcohol problems (Khan et al., 2002; Kost and Smyth, 2002; Mossakowski, 2008), and financial strain indirectly related to alcohol problems (Peirce et al., 1994, 1996). Asian Americans have an almost bimodal distribution of socio-economic status (SES), with some groups such as Asian Indians, Chinese, Japanese and Filipinos representing high-SES groups and others such as Vietnamese and Laotians over-represented in low-SES strata (Zhou and Gatewood, 2000). Since discrimination and economic hardship might influence alcohol consumption patterns among Asian Americans, these factors are important covariates in our multivariate models.

We test the following research hypotheses: (a) Asian Americans from ethnic cultures characterized by greater alcohol use (representing more liberal drinking norms and a ‘wetter’ drinking cultures) will be more likely to consume alcohol, to drink a larger volume and to drink with greater frequency than their counterparts from countries with lower per capita alcohol use; and (b) the effects of ethnic drinking cultures will be stronger among persons who are more integrated into the ethnic cultures through the use of their ethnic language.
METHODS

Data
We analyzed data from the 2004 to 2005 National Epidemiologic Survey of Alcohol and Related Conditions (NESARC Wave 2). NESARC Wave 1 data were collected in 2001–2002 from a representative sample of the US adult civilian population (18 years and older) residing in households and group quarters. The NESARC Wave 2 survey involved re-interviews with participants from Wave 1, with a cumulative Wave 2 response rate of 70.2%. Data were weighted to reflect design characteristics of the survey and to account for oversampling of African Americans, Hispanics and young adults. Weighted data were then adjusted for non-response and socio-demographic factors to be representative of the US civilian population on socioeconomic variables based on the 2000 Decennial Census. Additional details of the NESARC are provided elsewhere (Grant et al., 2004, 2009). Among the 1012 participants who indicated Asian origin, 952 who reported their specific ethnicity were included in our sample.

Measures
Drinking outcomes
Four individual-level drinking outcomes were considered: (a) current drinking, indicating whether respondents reported drinking at least 12 alcoholic drinks in the past 12 months; (b) drinking frequency, assessed by the number of days when alcohol was consumed in the past year, calculated using mid-points from categorical responses (‘every day’, ‘nearly every day’, ‘3–4 times a week’, ‘2 times a week’, ‘once a week’, ‘2–3 times a month’, ‘once a month’, ‘7–11 times in the last year’, ‘3–6 times in the last year’ and ‘1 or 2 times in the last year’); (c) heavy drinking frequency assessed by the number of days in the past 12 months when five or more drinks were consumed by males and four or more drinks by females, also calculated using mid-points from categorical responses (as above) and (d) total volume consumed in the past year, obtained by multiplying usual volume of consumption by the number of days when alcohol was consumed in the past year. Because of their extreme skewness, natural logs of drinking frequency and total volume were used.

In using variables concerning ‘any kind of alcoholic drink’ for all of the drinking outcomes, we included four kinds of alcoholic beverages: coolers, beer, wine and liquor (i.e. distilled spirits). In NESARC, these data were collected using life-sized photographs of common glasses to help respondents accurately estimate their usual size of drink; with a standard drink being any drink that contains ~14 g of pure alcohol (drink size estimates thus varied by type of beverage).

Ethnic drinking cultures: drinking prevalence
We used international data compiled by the World Health Organization to estimate per capita alcohol consumption in liters of ethanol consumed per adult aged 15 years or older for the COO (WHO, 2004). This measure, COO per capita consumption, serves as a proxy for the prevalence of drinking in ethnic cultures. In doing so, we drew upon recent studies that used it as an indicator of country-level drinking cultures to operationalize the concept of wet versus dry drinking cultures in quantifiable terms (Holmila et al., 2009; Joosten et al., 2009). We were unable to use the other indicator of drinking cultures used in the same studies—abstinence rates—since such data were unavailable for several countries of origin included in our sample. We also considered detrimental drinking culture, another indicator of drinking cultures used in prior research to capture the aspects of drinking cultures that might influence the impact of a given volume of drinking on health (Rehm et al., 2003), but we found no significant associations between detrimental drinking culture and the drinking outcomes in preliminary analyses (data available upon request), which was not surprising given the little relevance of the former for our drinking outcomes.

Asian ethnic language use and nativity
Language use was measured using seven questions on the language that respondents: (a) read and spoke; (b) spoke as a child; (c) usually spoke at home; (d) usually thought in; (e) spoke with friends; (f) listened to TV and radio program in and (g) preferred to watch/listen to movies, TV and radio programs in. The 5-point Likert-type scale ranged from: (1) only Asian/Pacific Island (API) language; (2) more API language than English; (3) both equally; (4) more English than API language and to (5) only English. After reverse coding, higher scores reflected greater use of ethnic language. As for nativity, a binary variable of US-born versus foreign-born was used.

Covariates
Financial stress was measured by the sum of responses to five questions that assess financial and job-related stress. These questions indicate whether respondents: (a) were fired or laid off from a job in the past year; (b) were unemployed and looking for a job longer than a month in the past year; (c) had trouble with their boss or a coworker in the past year; (d) changed jobs, job responsibilities or work hours in the past year and (e) experienced a major financial crisis, declared bankruptcy or more than once was unable to pay bills on time in the past year. Responses were given on a 5-point Likert-type scale ranging from ‘never’ (1) to ‘very often’ (5).

Discrimination was measured by the sum of responses to six questions on a 5-point Likert-type scale ranging from ‘never’ (1) to ‘very often’ (5). These questions capture discrimination experienced because of respondents’ race/ethnicity in a variety of situations and contexts, including: (1) the ability to obtain health care or health insurance coverage; (2) how respondent was treated when they received health care; (3) in public (on street, in stores or restaurants); (4) in any other situation (obtaining a job, on the job, getting admitted to school/training program, in courts or by police or obtaining housing); as well as (5) being called a racist name; (6) being made fun of, picked on, pushed shoved, hit or threatened with harm because of their race/ethnicity and (7) frequency of being made fun of, picked on, pushed, shoved, hit or threatened with harm because of their race/ethnicity.

SES was measured with two binary variables: annual family income of $60,000 or more (versus less) and 4-year college or advanced degree (versus lower level of
among all Asian countries, followed by the Japanese. Were estimated to consume the largest volume of alcohol. Koreans, Malaysians, and Vietnamese. Filipinos and the Chinese. Census estimates (67.4%).

**Statistical analysis**

Analyses were conducted using STATA (version 10.0) and its survey estimation procedure to accommodate all design, ratio, non-response and post-stratification adjustments. After conducting preliminary, bivariate analyses to examine associations between potential predictors and drinking outcomes, we fitted a series of multiple logistic and linear regression models. To test our hypothesis that ethnic drinking cultures are related to alcohol consumption patterns, we estimated the effect of drinking cultures controlling for financial stress, discrimination and demographic variables. To test our hypothesis that the effect of ethnic drinking cultures is stronger among those who are more integrated in their ethnic cultures, we first added the potential moderator, ethnic language use, to the base model to see if it was independently associated with drinking outcomes and then the interaction term—i.e. COO per capita alcohol consumption multiplied by ethnic language use, calculated using centered variables to reduce collinearity (Aiken and West, 1991)—to assess whether the effect of ethnic drinking cultures was significantly moderated by ethnic language use. To facilitate interpretation, interactions were graphed using high, medium and low values based on the means plus or minus one standard deviation (Aiken and West, 1991). All analyses involving ethnic language use were stratified by nativity, because nativity was highly correlated with ethnic language use ($r = -0.55$, with the foreign-born being more likely to use their Asian ethnic language).

**RESULTS**

**Sample characteristics**

Sample characteristics (Table 1) indicate that these Asian Americans are highly educated relative to the US general population. About 55% of the sample and 56% of the subgroup aged 25 or older (not shown in table) had a degree from a 4-year college or university. This is much higher than the proportion of US adults aged 25 or older with a college degree (27%), and somewhat higher than that of Asian American adults (48.2%) in the same age group (US Census Bureau, 2004). With respect to income, 43.6% of our sample reported annual family incomes of $60,000 or more. While this is similar to the general US population (44.4%), it is lower than the proportion of Asian Americans overall (54.4%) (US Census Bureau, 2004). About 70.0% of Asian American adults in our sample were foreign-born, similar to Census estimates (67.4%).

Data on COO per capita annual alcohol consumption (Table 2) depict the diversity of Asian ethnic drinking cultures. On average, Indonesians consumed the smallest volume of alcohol, followed by Indians/Afghans/Pakistanis, Malaysians and Vietnamese. Filipinos and the Chinese/Taiwanese constituted medium-consumption groups. Koreans were estimated to consume the largest volume of alcohol among all Asian countries, followed by the Japanese.

Multiattribute analyses: predictors of drinking behavior among Asian Americans

Consistent with our hypothesis, COO per capita annual alcohol consumption was significantly and positively associated with current drinking, drinking frequency and total annual volume of alcohol consumed, even when adjusting for demographic characteristics, financial stress, discrimination and nativity (Table 3). It was not, however, related to heavy drinking frequency. Analyses also revealed independent associations of financial stress and SES with drinking outcomes. Financial stress was inversely associated with all drinking outcomes except for heavy drinking frequency, and college education was associated with drinker status, higher annual volume and more frequent drinking. High family income also was associated with drinker status and more frequent drinking.

<table>
<thead>
<tr>
<th>Ethnic group</th>
<th>Per capita annual alcohol consumption in COOa</th>
<th>Respondents' ethnicity n (%)b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesian</td>
<td>0.10</td>
<td>21 (2.2)</td>
</tr>
<tr>
<td>Indian/Afghan/Pakistan</td>
<td>0.42</td>
<td>193 (20.3)</td>
</tr>
<tr>
<td>Malaysian</td>
<td>1.06</td>
<td>10 (1.1)</td>
</tr>
<tr>
<td>Vietnamese</td>
<td>1.35</td>
<td>72 (7.6)</td>
</tr>
<tr>
<td>Filipino</td>
<td>3.75</td>
<td>192 (20.2)</td>
</tr>
<tr>
<td>Chinese</td>
<td>4.45</td>
<td>233 (24.5)</td>
</tr>
<tr>
<td>Taiwanese</td>
<td>4.45</td>
<td>24 (2.5)</td>
</tr>
<tr>
<td>Japanese</td>
<td>7.38</td>
<td>129 (13.6)</td>
</tr>
<tr>
<td>Korean</td>
<td>7.71</td>
<td>78 (8.2)</td>
</tr>
<tr>
<td>Total</td>
<td>---</td>
<td>952</td>
</tr>
</tbody>
</table>

aEstimates are from WHO (2004).
bAsian Americans in Wave 2 NESARC sample.
Because of the high correlation between nativity and Asian ethnic language use, nativity-stratified analyses were conducted to assess independent and joint effects of drinking cultures and ethnic language use (Table 4). COO per capita alcohol consumption was significantly and positively associated with all drinking outcomes for foreign-born, but not for US-born respondents. Ethnic language use was inversely associated with all drinking outcomes for the foreign-born except heavy drinking frequency. It was not a significant predictor of any drinking outcomes for the US-born.

Interaction models revealed joint effects of ethnic drinking cultures and Asian ethnic language use on drinking outcomes among US-born Asian Americans. For all drinking outcomes in this group, the relationship between ethnic drinking cultures and alcohol consumption patterns was moderated by ethnic language use as hypothesized (Table 5). For US-born Asian Americans who frequently use Asian ethnic languages (i.e. those more integrated with their ethnic cultures), drinking outcomes were much more closely tied to the drinking cultures in the COO (Figs. 1A and 2). US-born Asians who were from ethnic cultures with low per capita alcohol consumption and who frequently used Asian languages were less likely to be current drinkers, consumed the lowest volume of alcohol annually and reported the lowest frequency of drinking. By contrast, US-born Asians who were from ethnic cultures with low per capita alcohol consumption and who rarely used Asian languages reported the highest volume and frequency of drinking of all groups. Patterns for heavy drinking frequency and total volume closely resembled in Fig. 2. The interaction of ethnic language use and ethnic drinking cultures was not significant for any drinking outcomes for the foreign-born, although it was marginally significant for drinker status (Fig. 1B).

**DISCUSSION**

Our study demonstrates that ethnic drinking cultures in the COO—specifically, prevalence of drinking in ethnic cultures—have significant bearings on drinking behaviors of Asian Americans. The hypothesized positive relationship between ethnic drinking cultures and alcohol outcomes held for most drinking outcomes. Asian Americans from countries characterized by higher per capita alcohol consumption were more likely to be current drinkers, consume a larger volume of alcohol annually and drink with greater frequency. Our second hypothesis that the effects of ethnic drinking cultures on alcohol outcomes would be stronger among those who were more closely integrated into their ethnic cultures was partially supported: the moderating effect of such integration was significant among US-born, but not foreign-born, Asian Americans. Among US-born Asians, those who originated from ethnic drinking cultures with lower per capita alcohol consumption and who used their ethnic Asian language more frequently were less likely to be current drinkers, to drink frequently and to consume a large volume annually than their counterparts who had lower levels of Asian language use or who were from countries of origin with higher per capita consumption. Thus, the influence of ethnic drinking cultures may indeed be conditioned by the degree of integration into the ethnic cultures, at least for US-born Asians. The absence of significant moderating effects of Asian language use for the foreign-born may reflect the limited variability in ethnic language use frequency among the foreign-born. It would be worth exploring in future research how other indicators of integration into ethnic drinking cultures (for example, frequent interaction with members of the same ethnic group) might moderate the effect of drinking cultures.

Contrary to the findings of prior disparities research, we did not find associations between discrimination or financial hardship and drinking outcomes among Asian Americans. This may be in part because our study examines general consumption patterns and thus differs from prior studies that focused mostly on problem drinking and alcohol use disorders (see Martin et al., 2003; Mulia et al., 2008; Zemore et al., 2011).

A few studies have explored the effects of drinking cultures on individual-level drinking behaviors. The focus has mostly been on perceived group norms that sanction drinking and intoxication (Greenfield and Room, 1997; Ahern et al., 2008) and on how drinking norms can vary by time, place and situation (Greenfield and Room, 1997). Using international data, a few recent studies have explored the contextual effects of ‘dry’ versus ‘wet’ drinking cultures on informal social pressure to reduce drinking within intimate social networks (Holmila et al., 2009; Hradilova-Selin et al., 2009; Joosten et al., 2009). Within the USA, some researchers examined the state or regional-level drinking cultures...
Table 4. Association of COO per capita alcohol consumption and Asian language use with alcohol outcomes, stratified by nativity

<table>
<thead>
<tr>
<th>Predicators</th>
<th>US-born Asian Americans (n = 179)</th>
<th>Foreign-born Asian Americans (n = 584)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current drinking, AOR (95% CI)</td>
<td>Drinking frequency, b (SE)</td>
</tr>
<tr>
<td></td>
<td>Drunking frequency, b (SE)</td>
<td>Total volume consumed, b (SE)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1.58 (0.67–3.74)</td>
<td>0.58 (0.31)</td>
</tr>
<tr>
<td>Age</td>
<td>0.95 (0.92–0.97)**</td>
<td>-0.04 (0.01)**</td>
</tr>
<tr>
<td>Financial stress</td>
<td>0.90 (0.55–1.45)</td>
<td>-0.09 (0.18)</td>
</tr>
<tr>
<td>Discrimination</td>
<td>1.01 (0.80–1.27)</td>
<td>0.02 (0.09)</td>
</tr>
<tr>
<td>College degree or more</td>
<td>2.85 (1.23–6.60)*</td>
<td>0.86 (0.31)**</td>
</tr>
<tr>
<td>Family income of $65,000 or more</td>
<td>1.81 (0.80–4.12)</td>
<td>0.23 (0.32)</td>
</tr>
<tr>
<td>COO per capita consumption</td>
<td>1.13 (0.90–1.43)</td>
<td>0.11 (0.08)</td>
</tr>
<tr>
<td>Asian language use</td>
<td>0.94 (0.88–1.01)</td>
<td>-0.03 (0.03)</td>
</tr>
<tr>
<td>Constant</td>
<td>-3.27 (1.91)</td>
<td>2.42 (1.30)</td>
</tr>
</tbody>
</table>
| AOR, adjusted odds ratio; CI, confidence interval; b, regression coefficient; SE, standard error; COO, country of origin. 
**P < 0.01.**
***P < 0.001.

Table 5. Models interacting Asian language use and COO per capita alcohol consumption, stratified by nativity

<table>
<thead>
<tr>
<th>Predicators</th>
<th>US-born Asian Americans (n = 179)</th>
<th>Foreign-born Asian Americans (n = 584)</th>
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<tbody>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2.03 (0.85–4.88)</td>
<td>0.66 (0.29)**</td>
</tr>
<tr>
<td>Age</td>
<td>0.94 (0.92–0.97)**</td>
<td>-0.04 (0.01)**</td>
</tr>
<tr>
<td>Financial stress</td>
<td>0.90 (0.54–1.51)</td>
<td>-0.08 (0.17)</td>
</tr>
<tr>
<td>Discrimination</td>
<td>0.97 (0.77–1.23)</td>
<td>-0.02 (0.09)</td>
</tr>
<tr>
<td>College degree or more</td>
<td>2.89 (1.11–7.54)*</td>
<td>0.75 (0.30)**</td>
</tr>
<tr>
<td>Family income of $65,000 or more</td>
<td>2.20 (0.92–5.28)</td>
<td>0.38 (0.29)</td>
</tr>
<tr>
<td>COO per capita consumption</td>
<td>1.09 (0.88–1.36)</td>
<td>0.06 (0.07)</td>
</tr>
<tr>
<td>Asian language use</td>
<td>0.89 (0.81–0.98)*</td>
<td>-0.05 (0.03)</td>
</tr>
<tr>
<td>Per capita consumption ×</td>
<td>1.08 (1.03–1.14)**</td>
<td>0.05 (0.01)**</td>
</tr>
<tr>
<td>Language use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-3.64 (1.86)</td>
<td>2.22 (1.33)</td>
</tr>
</tbody>
</table>
| AOR, adjusted odds ratio; CI, confidence interval; b, regression coefficient; SE, standard error; COO, country of origin. 
+P < 0.10.
**P < 0.05.
***P < 0.01.
****P < 0.001.
and one study reported significant differences in drinking behaviors by ethnic origin to demonstrate that cultural forces exert a strong effect on drinking behavior (Dawson, 1998). To our knowledge, our study is the first to examine the influence of ethnic drinking cultures on immigrants and their descendants. Though not attempted in the present study due to the lack of data, future research might explore how drinking-related values and norms in ethnic cultures affect individual drinking behaviors and how such relationships may be mediated or moderated by drinking norms in intimate social networks.

Our study advances research on immigrant alcohol use in several important ways. First, our findings that ethnic drinking cultures are a prominent predictor of drinking among immigrant populations enhance understanding of the drinking behaviors of immigrants and their descendants. Not only does our approach address an important limitation of past acculturation research (i.e. its strong focus on the adoption of the presumed ‘mainstream’ US culture), our focus on the aspect of cultures most relevant to the specific health behavior under investigation (i.e. drinking cultures) is an important contribution to the literature, especially given the research findings indicating that increasing acculturation may have different, or even opposite, effects on different health behaviors among an immigrant population (Landrine et al., 2006).

Secondly, departing from the prevailing practices in acculturation research that tend to treat English language use, as well as nativity, mainly as components included in the multidimensional construct for acculturation (Burnam et al., 1987; Caetano, 1987; Epstein et al., 1996), we considered language use and nativity as separate factors, examining how each may uniquely influence drinking. Different aspects of the experiences immigrants and their descendants in US society may produce different alcohol and substance use outcomes (Cook et al., 2009), which future research might explore.

Several limitations to the present study should be acknowledged. First, because ethnic drinking cultures may undergo change in the USA, estimates of alcohol consumption in the countries of origin may not accurately reflect ethnic drinking...
cultures in the USA. In addition, using COO per capita alcohol consumption as a proxy assumes that a monolithic drinking culture exists in each country, a limitation similar to that of the acculturation approach noted above. Such an assumption may be less problematic for Asian ethnic cultures with their more homogeneous cultural values and norms than is the case for US society with its extreme diversity, however. Further, due to the way in which the ethnic categories were made available in NESARC, respondents from more than one country were included in the same category—specifically, India, Afghanistan and Pakistan—although it may be justified since all three of these are lower-consumption countries.

Another set of limitations relates to statistical power. While associations between ethnic cultures and drinking behaviors were more consistent for the foreign-born in this study, the absence of such associations may have been a function of lower statistical power for the US-born. Also, while the experiences of the ‘1.5 generation’ Americans who were born overseas but moved to the USA before the age of 11 may be different from those who immigrated as adults (Rumbaut, 1991), we were unable to explore such differences due to sample limitations. Lastly, since we used cross-sectional data, caution is urged in inferring causal relationships.

Future research needs to explore cultural and social processes occurring in the COO prior to immigration and in immigrant communities that might significantly influence immigrant alcohol use but are unrelated to US cultures. For example, while alcohol use is widely prevalent among Koreans both in Korea and in the USA, there is some indication that Korean Christian churches—bedrocks of US Korean communities offering fellowship, business contacts and social services (Kwon et al., 1997)—successfully promote abstinence (Ayers et al., 2009), with the vast majority of Korean immigrants attending church at least once a week (Kwon et al., 2001). Such processes may take place relatively independently of the adoption of US cultural norms and practices or may vary by socioeconomic circumstances. Future research should attempt to enhance understanding of such processes by focusing on immigrant communities and their own dynamics, rather than treating them as vessels passively receiving the influence of US cultures.

**REFERENCES**


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