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Country of Origin, Age of Drinking Onset, and Drinking Patterns Among Mexican American Young Adults

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Abstract

This study examines relationships between country of origin, age of drinking onset, and adverse drinking outcomes among young adult Mexican Americans in the 2001−2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). Logistic regression models estimate associations between age of drinking onset, age of onset in relation to age at immigration, and adverse drinking outcomes, controlling for sex, age, employment, education, marital status, and income. Adjusted analyses indicate the odds of adverse drinking outcomes decreased as age of drinking onset increased. Mexican Americans who initiated drinking in Mexico had significantly lower odds of current or lifetime harmful drinking than U.S. born but the odds were not significantly different between foreign-born Mexican Americans who initiated drinking in the U.S. and U.S. born. Irrespective of whether drinking onset was in Mexico or the U.S., foreign-born Mexican Americans had lower odds of alcohol abuse than U.S. born. However, odds of dependence were not significantly different between foreign-born and U.S.-born Mexican Americans. While findings suggest that being foreign born may be protective, further research on social and cultural factors impacting drinking onset and related outcomes among young Mexican Americans may help inform prevention efforts.

Keywords

age of drinking onset; Mexican Americans; immigrant status; social and cultural factors; acculturation; drinking patterns

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1.0 Introduction

1.1 Early age of drinking onset

Over the past decade, numerous studies have found associations between early age of drinking onset and adverse physical, mental and social consequences among young adults (Bonnie et al., 2004; Office of Applied Studies, 2004). Research has found associations between age of drinking onset, problematic patterns of drinking (Hawkins et al., 1997) and alcohol abuse and dependence (Chou and Pickering, 1992; Grant and Dawson, 1997; Grant et al., 2001; Grant et al., 2004a; Hingson et al., 2006; Pedersen and Skrondal, 1998). Research has also shown associations between early drinking and unintentional injury (Hingson et al., 2000), physical fighting (Hingson et al., 2001), unsafe sex (Hingson et al., 2003a), and driving after drinking (Hingson et al., 2003b). However, it has also been noted that the role of age of onset may be overestimated if common risk factors predicting onset and consumption are omitted from analyses (Labouvie and White, 2002; Pedersen and Skrondal, 1998). While studies have controlled for age, gender, race, ethnicity, and family history of alcoholism (Grant, 1998), history of cigarette and other drug use, education, marital status (Hingson et al., 2000), and history of childhood antisocial behavior and major depression (Hingson et al., 2006), none have analyzed age of onset within different ethnic or racial groups.

Among immigrants to the U.S., social and cultural factors as well as age at immigration may influence the age at which a transition such as drinking onset takes place, which may in turn influence patterns of drinking and alcohol related outcomes. The Hispanic population is the largest ethnic minority population in the United States, constituting 14.1 percent of the population (U.S. Census, 2005); Mexican Americans are the fastest growing ethnic group, with approximately two-thirds of Hispanics identifying as Mexican (Ramirez and de la Cruz, 2002). Although studies show that Hispanic youths are more likely to drink and to get drunk at an earlier age than non-Hispanic white or black youths (Johnston et. al. 2002), and binge drinking among Mexican American 12−17 year olds in the Southwest was higher than their white peers (Swaim et al., 2004), few studies report on alcohol use among Mexican American young adults (Markides et al., 1990; Zamboanga, 2005). Using the 2001−2002 National Epidemiologic Study on Alcohol and Related Conditions (NESARC), this study examines the relationships among country of origin, age of drinking onset, and alcohol consumption among young adult foreign-born and U.S.-born male and female Mexican Americans.

1.2 Alcohol and drug use in the U.S. Hispanic population

Epidemiologic studies indicate that alcohol and drug use in the U.S. Hispanic population is high, although there are differences in use patterns among Hispanic ethnic groups and between U.S.-born and foreign-born Hispanics (Galvan and Caetano, 2003). To date, much of the literature on alcohol use outcomes among subgroups of U.S.-based Hispanics has focused on acculturation as measured by language proficiency, attitudes, and ethnic environment. These studies often show conflicting results (Black et al., 1993; Corbett et al., 1991; Caetano, 1987; Caetano, 1988; Caetano, et al. 1988; Nielsen, 2001; Randolph et al., 1998). For example, acculturation may lead to abstention or more frequent drinking depending upon the region in which the immigrant resides (Caetano, 1989); alcohol use increases with increasing acculturation among females (Borges et al., 2006; Caetano et al., 1988; Neff and Hoppe, 1992; Vega and Amaro, 1994; Zemore, 2005) but less so or not at all among males (Borges et al., 2006; Marin, 1996; Marin and Marin, 1997; Marin and Posner, 1995; Neff and Hoppe, 1992; Zemore, 2005); alcohol consumption decreases among the more highly acculturated (Markides et al., 1990; Murguia et al., 1998; Neff et al., 1987; Neff and Hoppe, 1992); and drinking context varies (Gilbert, 1985; Gilbert, 1988; Gilbert and Cervantes, 1986). Assumptions about the relationship between acculturation and alcohol use, together with methodological limitations in the use of alcohol outcomes, control, and moderating variables

in studies, have been used to explain the inconsistent results (Gutmann, 1999; Zemore, 2005).

Although acculturation measures continue to be redefined and used to explain associations with drinking outcomes, studies of DSM-IV alcohol use disorders among foreign-born and U.S. born Hispanics suggest that alternative explanations, such as immigration status, may provide a better understanding of alcohol-related problems. Studies have found that foreign-born Mexican Americans and non-Latino whites have less risk of substance use disorders than U.S.-born Mexican Americans and non-Latino whites (Ortega et al., 2000; Vega and Amaro, 1994). Other studies have compared rates of alcohol use disorders between U.S-born Mexicans, foreign-born Mexicans and adults in Mexico. One study found that U.S.-born Mexican immigrants had a higher prevalence of dependence than immigrants, although increased time of residence and younger age at immigration increased the rates of substance use disorders (Vega et al., 2004). Another study using data from U.S. and Mexican household surveys found dependence prevalence was lowest among adults in Mexico, followed by immigrants born in Mexico and U.S.-born Mexicans; subclinical dependence was lowest among immigrants born in Mexico, followed by adults in Mexico and U.S.-born Mexicans (Borges et al., 2006). Two studies of psychiatric and substance use disorders using data from the 2001−2002 NESARC show that foreign-born Mexican American adults have less risk of alcohol disorders than U.S.-born (Grant et al., 2004c), and other foreign-born Latino adults have lower risk of alcohol disorders than U.S- born (Alegria et al., 2006).

In sum, previous studies on age of drinking onset indicate that younger age of onset increases risk for alcohol related problems while studies of immigration status and drinking suggest that country of origin influences risk. This study expands these areas of research by simultaneously examining age of onset, country of origin, and country of drinking onset in the Mexican American population. The major objectives of this study were to examine: (1) whether age of drinking onset influenced heavy drinking, abuse and dependence among male and female U.S.-born and foreign-born Mexican Americans, and (2) whether where people started to drink — the U.S. or Mexico — influenced adverse drinking outcomes among male and female U.S.-born and foreign-born Mexican Americans.

2.0 Methods

2.1 Data source

This analysis utilizes data from the 2001−2002 National Epidemiologic Study on Alcohol and Related Conditions (NESARC) conducted by the National Institute on Alcohol Abuse and Alcoholism (NIAAA). A multi-stage probability sample of 43,093 adults ages 18 and older participated in face-to-face interviews in 2001 and 2002 (response rate 81%). The survey methods and other quality control procedures and test-retest reliability tests can be found elsewhere (Grant et al., 2004b). The research protocol, including informed consent procedures, received full ethical review and approval from the U.S. Census Bureau and Office of Management and Budget.

Translation and back-translation of the survey instrument to Spanish were done by the Census Bureau. Hispanic respondents who preferred to speak Spanish (15.5%) were interviewed by trained census bureau interviewers familiar with appropriate cultural and linguistic adaptations (Grant et al., 2004c). Hispanics and young adults (ages 18 to 24) were over-sampled, but after adjustment for over-sampling and non-response, the weighted data represent the U.S. civilian population based on region, age, race, ethnicity, and sex at the 2000 Decennial Census.

2.2 Sample

The sample for this analysis was restricted to Mexican American respondents aged 18 to 34. People were considered to be Mexican American if they self-identified as Chicano, Mexican, or Mexican American. The 2175 Mexican American respondents were categorized into four groups: foreign-born Mexican American males (n=565); U.S.-born Mexican American males (n=461); foreign-born Mexican American females (n=529); and U.S.-born Mexican American females (n=620). The sample was limited to ages 18 to 34 for two reasons. First, 21 became the national minimum drinking age in 1988. Those under 35 all came of age under the 21 minimum drinking age, while for those over 35 minimum drinking ages varied by state. Therefore, everyone in the sample started drinking under similar social and legal circumstances, while this would not be true for those over 35. Second, those 18−34 are closer to their ages of drinking onset than those over 35, reducing possible age of onset recall errors. Including respondents aged 18−20 in analyses of current and former drinkers raises a concern that we are including those with earlier drinking onset but excluding those who wait until 21 to begin drinking. As a check on potential bias relating to the inclusion of these respondents, analyses of current and former drinkers were repeated with the sample restricted to those aged 21−34. The results of these restricted analyses agreed closely with the results from the analysis of those 18−34 (data not shown).

2.3 Alcohol consumption

Alcohol consumption was defined as: current consumer (12 or more drinks in the past 12 months); former drinker (12 or more drinks in a previous 12 month period but not in the past 12 months); and abstainer (less than 12 drinks in the past 12 month period or no alcohol consumption ever).

Responses from current drinkers were used to quantify past 12 month drinking frequency and usual quantity. Drinking frequency was based on how often respondents reported consuming their usual number of drinks (daily or nearly every day, 1−4 times per week, 1−3 times per month, 1−11 times per year). Quantity was based on the usual number of drinks consumed on typical drinking days (1, 2, or 3 or more).

Exceeding the daily and weekly drinking limits recommended by the NIAAA was used as a marker of risky consumption (U.S. Department of Health and Human Services, 2004). This variable combines the self-reported frequency of drinking with the self-reported usual or largest number of drinks consumed at one time. Males exceeded the weekly limit by consuming more than 14 drinks per week and exceeded the daily amount by ever binging or consuming 5 or more at one sitting. Females exceeded the weekly amount by consuming more than 7 drinks per week and exceeded the daily amount by ever binging or consuming 4 or more at one sitting. We categorized respondents as high risk (exceeding both the daily and weekly limits) or not high risk (not exceeding both limits) drinkers, both over the past 12 months for current drinkers and during the heaviest drinking period during their lifetime for current and former drinkers.

Age of drinking onset was calculated as the age when respondents had their first drink not counting tastes or sips, and categorized as <14, 14−15, 16−17, 18−20, and 21+. The relationship between age of drinking onset and age at immigration was used to ascertain whether starting to drink in Mexico or in the U.S. was a predictor of risk among immigrants. Respondents were considered to have started drinking in Mexico if age of onset was before age at immigration. Respondents were considered to have started drinking in the U.S. if age of onset was after age at immigration. These two categories were compared to U.S. born Mexican Americans.

Lifetime alcohol abuse and dependence were based on the NIAAA Alcohol Use Disorder and Associated Disabilities Interview Schedule DSM IV Version (AUDADIS-IV), a structured

diagnostic interview designed for use by non-clinician lay interviewers to produce abuse diagnoses that are consistent with the final DSM IV categories. Numerous national and international studies have documented the reliability and validity of AUDADIS-IV alcohol abuse and dependence criteria (Grant et al. 2004b).

2.3 Demographic definitions

Demographic variables in the analysis included: marital status (married or living as married; widowed, divorced, separated; and never married); education (not a high school graduate, high school graduate or graduate equivalent, at least some college education); personal and family income (0-$19,999, $20,000-$34,999, $35,000-$69,999, more than $70,000); place of residence (urban, suburban, rural); region (Northeast, Midwest, South, West); age when first started living in the United States (ages 0−9, 10−19, 20−29, 30 or more); and employment (full-time employed, not student; full-time employed and student; unemployed; student; other).

2.4 Data analysis

All analyses were performed using SUDAAN (Research Triangle Institute, 2002), a statistical software program that uses Taylor series linearization to account for complex survey sampling designs in estimating both parameters and standard errors. All results were weighted to represent the U.S. population of Hispanic adults aged 18 to 34. Unadjusted comparisons were made using χ^2. Logistic regression models evaluate the association between age of drinking onset and age of drinking onset in relation to age at immigration and past-year and lifetime high-risk drinking defined by exceeding both the daily and weekly NIAAA consumption guidelines, lifetime abuse, and lifetime dependence, controlling for sex, age, employment, education, marital status, and family income.

3.0 Results

3.1 Demographics

There were substantial demographic differences between foreign-born and U.S.-born Mexican Americans. Both foreign-born males and females were significantly more likely than U.S. born to be older, married, to have less than a high school education, and to have lower personal and family income. Foreign-born males were significantly more likely than U.S.-born males to be full-time employees and less likely to be students; foreign-born females were significantly less likely than U.S.-born females to be full-time employees. There were no differences between groups in terms of region of the United States where they reside or the setting (urban, suburban, or rural). A majority of the foreign-born Mexican Americans immigrated by age 20.

3.2 Drinking behaviors

Table 1 compares drinking status, abuse and dependence between foreign-born and U.S.-born Mexican American males and females. Compared to U.S.-born females, foreign-born females were significantly more likely to be lifetime abstainers and less likely to be current or former drinkers. There were no significant differences in drinking status between foreign-born and U.S.-born males.

Among current drinkers (12 or more drinks over the past 12 months), foreign-born and U.S.-born males shared similar patterns in frequency and quantity of drinking, although foreign-born males were significantly less likely than U.S.-born males to exceed both the daily and weekly NIAAA recommendations for safe drinking. Foreign-born females were significantly more likely than U.S.-born females to be infrequent drinkers and were less likely to exceed both the daily and weekly NIAAA recommendations.

Among ever drinkers, foreign-born males and females were significantly less likely than their U.S.-born counterparts to have drinking onset before 18, to exceed both the daily and weekly NIAAA recommendations during the heaviest period of drinking over their lifetime, and to experience symptoms of abuse or dependence. There were no significant differences in age of drinking onset between foreign-born and U.S.-born males or females, although the trends suggest that U.S.-born Mexican Americans started drinking earlier than those born in Mexico.

3.3 Age of drinking onset

Multiple logistic regression models were used to simultaneously examine the effects of country of origin, country of drinking onset, and age of drinking onset on exceeding both the daily and weekly NIAAA consumption recommendations during both the current year and the lifetime period of heaviest drinking, lifetime abuse, and lifetime dependence, controlling for sex, age, employment, education, marital status, and family income (table 2).

Drinking onset prior to the legal drinking age was a risk factor for all four adverse outcomes compared to drinking onset at age 21 or older. The odds of problems were highest at the youngest ages of onset, and decreased with age.

Controlling for age of onset, respondents who started drinking in Mexico were significantly less likely than U.S.-born Mexican Americans to exceed both the daily and weekly NIAAA recommendations during their current and heaviest drinking periods. Mexican Americans who started drinking after immigration to the U.S. did not have significantly different odds of exceeding both the daily and weekly NIAAA recommendations than those born in the U.S. Whether they started drinking in Mexico or the U.S., alcohol abuse was less likely among immigrants than among U.S. born. The odds of dependence were not significantly different for either immigrant group compared to U.S.-born Mexican Americans.

4.0 Discussion

Although there is a growing literature about early age of drinking onset and adverse alcohol-related outcomes, no studies have focused on this relationship within different ethnic or racial groups in the U.S. This study investigated drinking patterns, including early age of onset, and alcohol-related outcomes among two groups, foreign-born and U.S.-born Mexican American males and females.

This study shows that foreign-born Mexican American females were significantly less likely than U.S.-born females to be current drinkers, and, if they did drink, were significantly less likely to drink often or in high quantities. Both foreign-born males and females were at significantly lower risk of lifetime high-risk drinking, as defined by exceeding the daily and weekly NIAAA consumption guidelines or ever abusing alcohol, and foreign-born males were at significantly lower risk for dependence. It is important to note that foreign-born females showed a large increase in onset of drinking at or after age 21, indicating that some of the foreign-born females considered as abstainers in this analysis may start drinking at a later age.

Early age of onset was associated with high-risk drinking as defined by exceeding both the daily and weekly NIAAA consumption guidelines, lifetime history of abuse and lifetime history of dependence with associations highest when drinking began before age 14 after controlling for sex, age, marital status, and socioeconomic status indicators of education, occupation and family income. Additionally, foreign-born Mexican Americans who started drinking in Mexico had significantly lower odds of current or lifetime high-risk drinking than U.S. born. Foreign-born Mexican Americans had lower odds of abuse than U.S. born, whether they started drinking in Mexico or the U.S., but the odds of dependence were not significantly different between foreign-born and U.S.-born Mexican Americans

The findings suggest that being foreign born may be protective for adverse alcohol-related outcomes, but the data only permit speculation for these findings. Other studies have shown that there are different social norms concerning alcohol use among men and women in Mexico and the U.S. Drinking among males is acceptable in both contexts, while the low proportions of drinkers among foreign-born Mexican American females in the U.S. may reflect socialization in Mexico where there are sanctions against among women consuming alcohol (Alaniz et al., 1999). Studies have also found that women who immigrated to the U.S. in childhood consume more alcohol than women who immigrated to the U.S. as adults (Heilemann et al., 2002) and as Mexican American women acculturate and achieve higher status positions in the work force they use alcohol more and believe there are positive consequences to its use (Gilbert et al., 1994). However, it has also been suggested that although the risk of substance use dependence increases with acculturation among Mexican immigrants, one reason it does not have the same effect among U.S.-born Mexican Americans is because of the small percentage of Mexican-born adults in the U.S. who score low on acculturation (Vega et al., 2003).

The two NESARC studies on immigration status and DSM-IV alcohol use disorders among Hispanics (Alegria et al., 2006; Grant et al., 2004c) refer to the need for future work focusing on the protective impact of cultural factors on alcohol use because they found support for traditional values acting to protect against alcohol use disorders. Researchers studying mortality rates of foreign-born and U.S.-born Mexicans (Palloni et al., 2004) and different ethnic groups of Latinos (Abraido-Lanza et al., 1999), have made similar conclusions about the need for studies on the impact of cultural factors on health behaviors among different Latino subgroups. As previously discussed, much of the literature on alcohol use among Mexican Americans focuses on the negative influence of acculturation or adaptation to life in an adopted country. However, in a critique of the term acculturation and its use in studies of alcohol use among Hispanics living in the U.S., Guttman (1999) cautions that changes in alcohol usage patterns cannot be clearly attributed to changes in spatial environment, and that such changes may also have occurred in the native country over time. The observed drinking patterns in the U.S. may reflect drinking practices among young people in both the U.S. and Mexico because, among Mexicans in particular, migration is often neither linear nor unidirectional which makes it difficult to associate alcohol use with migration to the U.S. within this population. This “monarch butterfly” migration pattern may exert an influence on drinking patterns, including age of drinking onset. Given the scarcity of data about drinking patterns among Mexican American young adults in the U.S. this pattern of influence deserves attention.

Our findings could be interpreted as evidence for the negative effect of early age of drinking onset and acculturation on alcohol use among Mexican American young adults. However, limitations of the NESARC temper our results. Previous studies have identified “methodological artifacts” (Alegria et al., 2006; Grant et al., 2004c) that may influence the context of the survey when administered to Spanish-speaking respondents or people who grew up in immigrant households. Cultural norms about alcohol and the appropriateness of discussing drinking behaviors may also influence responses among both U.S.-born and foreign-born Mexican American males and females. Further, the length of time in the U.S. may influence perceptions of alcohol use and responses about such use. In previous studies, we found that the shorter the length of time in the U.S., the more likely foreign-born students were to hold misperceptions about their peers’ use of drugs and other risk-taking behaviors (Hingson et al., 1991). NESARC data are collected retrospectively, which, particularly for data on ages of drinking initiation, may introduce recall bias; and data are cross-sectional and do not include questions on culture, acculturation, or migratory factors, so we cannot make causal inferences. The variable of age of immigration in the NESARC is from the time the immigrant first began living in the U.S. but does not account for movement back and forth between the U.S. to Mexico which could affect the comparisons in this study. Also there is no information in NESARC

concerning whether the U.S.-born Mexican Americans ever lived in Mexico. Finally, any national sample may under-represent undocumented immigrants, a growing population in the United States and those more likely to follow the “monarch butterfly” migration pattern.

In the future, research focusing on social and cultural factors that impact drinking onset and alcohol use among young people from different racial and ethnic groups would increase knowledge of factors that may protect foreign-born young adults from harmful drinking behaviors and help inform prevention efforts. More research on females is needed, especially since the drinking patterns of foreign-born Mexican American females appear to be so different than their U.S.-born counterparts. Finally, to fully understand patterns of drinking among Mexican Americans, we need studies of drinking in Mexico, particularly among adolescents and young adults; and studies among undocumented immigrants.

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Table 1

Drinking characteristics of Mexican Americans, ages 18−34

	Males		Females	
	Foreign Born %	**U.S. Born %**	**Foreign Born %**	**U.S. Born %**
All Respondents	n=565	n=461	n=529	n=620
Drinking status		p=.294		p=.000
Current drinker	61.0	66.7	18.1	45.5
Former drinker	8.6	8.1	2.8	7.1
Lifetime abstainer	30.4	25.2	79.1	47.4
Current Drinkers, Past Year	n=342	n=318	n=100	n=293
How often drank in last 12 months		p=.476		p=.018
Daily or nearly every day	7.3	11.8	2.1	3.2
1−4 times per week	40.7	41.2	14.9	31.1
1−3 times per month	36.1	34.8	47.2	40.8
1−11 times per year	15.8	12.2	35.8	24.9
Number of drinks usually consumed on drinking days		p=.354		p=.190
1	12.2	8.3	31.0	18.0
2	18.4	16.9	24.0	37.5
3 or more	69.5	74.8	45.0	44.5
Exceeded NIAAA daily and weekly limit	13.1	26.0 p=.019	7.7	14.0 p=.047
Current and Former Drinkers, Lifetime History	n=378	n=350	n=118	n=347
Age of drinking onset		p=.069		p=.071
<14	7.4	7.5	4.3	7.9
14−15	8.0	14.5	9.4	11.2
16−17	21.8	34.2	12.3	22.6
18−20	38.1	30.8	35.1	28.1
21+	24.7	13.0	39.0	30.3
Exceeded daily and weekly limits	19.2	37.0 p=.003	14.1	25.5 p=.029
Abuse	29.4	55.5 p=.001	8.1	31.9 p=.007
Dependence	13.0	25.6 p=.009	12.2	22.1 p=.067

Table 2

Effects of age of drinking onset, country of origin, and country of drinking onset on exceeding the NIAAA recommendations during the past year or ever during the lifetime, lifetime abuse, and lifetime dependence, controlling for sex, age, employment, education, marital status, and family income.

	Exceeded daily and weekly limits, past year	Exceeded daily and weekly limits, lifetime	Abuse, lifetime	Dependence, lifetime
Age of Drinking Onset	**OR (95% CI)**	**OR (95% CI)**	**OR (95% CI)**	**OR (95% CI)**
<14	12.41 (4.29, 35.95)	15.23 (5.97, 38.86)	11.31 (5.30, 24.13)	6.17 (1.81, 21.04)
14−15	8.83 (3.35, 23.29)	8.13 (3.32, 19.94)	11.93 (6.13, 23.23)	5.58 (2.29, 13.61)
16−17	3.96 (1.59, 9.84)	6.72 (3.17, 14.25)	6.20 (3.45, 11.14)	3.41 (1.79, 6.51)
18−20	2.38 (0.88, 6.41)	2.61 (1.15, 5.91)	1.99 (1.10, 3.60)	1.55 (0.72, 3.36)
21+	ref.	ref.	ref.	ref.
Country of Origin / Country of Drinking Onset*	**OR (95% CI)**	**OR (95% CI)**	**OR (95% CI)**	**OR (95% CI)**
U.S. born / U.S.	ref.	ref.	ref.	ref.
Foreign born / U.S.	0.60 (0.27, 1.34)	0.56 (0.29, 1.08)	0.45 (0.29, 0.70)	0.78 (0.34, 1.75)
Foreign born / Mexico	0.35 (0.17, 0.74)	0.40 (0.22, 0.72)	0.29 (0.17, 0.52)	0.83 (0.43, 1.59)

*This is a composite variable categorizing subjects into three groups: 1) born in the U.S., 2) born in Mexico and began drinking in the U. S., and 3) born in Mexico and began drinking in Mexico.