Association of acculturation with drinking games among Hispanic college students

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Abstract

Objective: This cross-sectional study was conducted to investigate which components of acculturation relate to drinking games participation among Hispanic college students. We also sought to examine whether the relationships between acculturation and drinking games would differ from the associations between acculturation and other alcohol-related outcomes.

Method: A sample of 1,397 Hispanic students aged 18–25 (75% women; 77% US-born) from 30 US colleges and universities completed a confidential online survey. Results: Associations among acculturative processes, drinking games participation, general alcohol consumption, and negative drinking consequences differed across gender. Most significant findings emerged in the domain of cultural practices. For women, US cultural practices were associated with greater general alcohol consumption while gaming, whereas for men, US cultural practices were associated with alcohol consumed while gaming, whereas for men, US cultural practices were associated with general alcohol consumption and negative drinking consequences. Conclusions: Hispanic and US cultural practices, values, and identifications were differentially associated with drinking games participation, and these associations differed by gender. It is therefore essential for college student alcohol research to examine US culture acquisition and Hispanic culture retention separately and within the domains of cultural practices, values, and identifications.

Keywords

Acculturation, alcohol, college students, drinking games, Hispanics, problem drinking

History

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Introduction

Many college students participate in drinking games, which are high-risk, social drinking activities that are designed to facilitate inebriation, consist of rules that indicate when players drink and the quantity of alcohol that they must consume, and involve performing motor and/or mental tasks (1). Studies conducted with large, multisite samples of college students report prevalence rates of drinking games participation ranging from 49% (2) to 70% (3). Studies also indicate that individuals who participate in drinking games are at risk for experiencing negative alcohol-related consequences (2,3).

Although research examining the demographic, psychological, and event-specific factors that can place students at risk for heavy consumption and negative drinking consequences are plentiful in the college alcohol literature (4), most have been conducted with predominantly White samples. A few studies (5) have examined the cultural correlates of high-risk drinking behaviors among Hispanic college students, but to our knowledge, no published studies have examined cultural correlates of drinking games specifically.

Hispanics are an important population to examine both because of their rapidly growing numbers and because of their increasing presence on college campuses (6,7). As the proportion of Hispanics on college campuses continues to increase, identifying and understanding correlates of health risk behaviors in this population will become an increasingly important public health issue. In terms of alcohol use among Hispanic students, Venegas et al. (5) found that 48% of the
Hispanic students in their sample reported binge drinking at least once per week. In comparison, the Substance Use and Mental Health Services Administration (SAMHSA) (8) reports that 40% of students (regardless of ethnicity) binge drink at least once per month. Hispanic students may therefore engage in greater amounts of heavy drinking compared to students from other ethnic groups.

**Acculturation**

Among Hispanic college students, acculturation has often been identified as a cultural correlate of drinking behaviors (9–17). Acculturation is the process of psychological, social, and cultural change and adaptation that takes place when cultural minorities engage in extended close interactions with the majority culture (18). However, to our knowledge, no published work has examined the specific associations between acculturation and drinking games. In the present study, we examine how components of acculturation are related to Hispanic college students’ involvement in drinking games and other alcohol-related variables. We also examine whether the associations of acculturation components with drinking games differ from the relationships of acculturation with general alcohol consumption and negative drinking consequences.

### Dimensions, domains, and components of acculturation

According to Schwartz et al.’s seminal model (18), acculturation can be described in terms of dimensions, domains, and components. Dimensions refer to US-culture acquisition and heritage-culture retention, which can be considered either as separate processes (bidimensional) (18). Unidimensional conceptualizations of acculturation propose that individuals forsake their heritage cultural practices, values, and identifications in favor of adopting the receiving culture’s practices, values, and identifications. Conversely, according to bidimensional conceptualizations, individuals can identify with the receiving society and acquire its values and cultural practices while also maintaining their heritage practices, values, and identity. For example, a person can be traditionally oriented at home but more “Americanized” at work or with friends. Indeed, bidimensional models of acculturation are not only preferred, but are more consistent with the “on the ground” reality that immigrants and their immediate descendants experience (19). However, many studies on acculturation and alcohol use among Hispanic college students continue to utilize unidimensional models, despite researchers’ recommendations (20,21) and empirical support (22) to the contrary.

Within each acculturation dimension, individuals may evidence changes in at least three domains: practices (heritage or US language use and cultural activities), values (individualism-collectivism), and identifications (ethnic identity/US identity). Practices represent a behavioral dimension of acculturation, focusing on specific customs reflective of heritage or US cultural streams. Values represent a cognitive dimension of acculturation, focusing on beliefs or norms associated with a given cultural context. Identifications represent an affective dimension of acculturation, focusing on the extent to which one feels attached to one’s heritage culture and to the United States (19).

Combining the use of three acculturation domains with a bidimensional model yields six acculturation components: US practices, Hispanic practices, individualist values, collectivist values, ethnic identity, and US identity (see Figure 1). Empirical research (22) indicates that these components are modestly intercorrelated but are not redundant with one another. Within each dimension (US and Hispanic acculturation), identifications are significantly related to both practices and values, but practices and values are not related to one another. The six acculturation components are sufficiently independent to be included together as predictors of mental health and substance use outcomes (22,23).

### Acculturation and alcohol use among Hispanic college students

Most studies examining acculturation and alcohol use among Hispanic college students have employed unidimensional acculturation models (17). Some studies have yielded positive associations between acculturation and drinking behaviors (10,13), whereas others have found inverse associations (16), and still another reported no relationship (12). Only a handful of alcohol use studies with Hispanic college students have utilized bidimensional conceptions of acculturation, and these results have also yielded mixed findings. For example, Des Rosiers et al. (11) used latent class modeling to create five acculturative orientations based on Berry’s (24) classic typology: assimilated (acquires US practices and discards one’s cultural heritage), separated (rejects US practices and retains one’s cultural heritage), and three bicultural groups that involve both adopting US practices and retaining those from one’s cultural heritage – separated bicultural, high bicultural, and low bicultural. Des Rosiers et al. (11) found that students who were in the three bicultural groups reported lower levels of drinking-related risk behaviors than students in the assimilated group. These findings suggest that acquiring US practices, while retaining one’s heritage-cultural practices, may be most protective against alcohol-related risks.

Several recent studies have examined multiple domains of acculturation. Schwartz et al. (22) found no relationship between any domain of acculturation (i.e. values, identifications, and practices) and overall hazardous use among a large,
The current study addressed the following research questions: (i) Are the associations between acculturation domains and drinking games participation similar for Hispanic men and women? and (ii) How might different domains of acculturation be associated with drinking games participation, and how might these relationships differ from those involving general alcohol consumption or negative drinking consequences? Given the mixed findings in the literature, any hypotheses we advance would be tentative. However, given the differences between Hispanic and US cultural contexts in terms of alcohol use among women, we expected that, among women, greater endorsement of US orientations, and lower endorsement of Hispanic orientations, would be associated with higher levels of all alcohol-related outcomes.

Methods
Participants
The present sample consisted of 1,397 self-identified Hispanic college students (343 men, 1,054 women). Participants were recruited from 30 colleges and universities in 20 US states. Although participants as old as 45 years of age completed the survey, we restricted the analytic sample to individuals 18–25 years of age. Among participants who indicated their or their families’ countries of origin, the most common were Mexican (19%), Cuban (16%), Colombian (6%), and Dominican (4%).

The study was approved by the Institutional Review Boards at the senior author’s home university and at each participating institution. Sites were selected in order to provide diversity in terms of geographic location, setting (urban, suburban, or college town), and type of institution. Six sites were located in the Northeast, seven in the Southeast, six in the Midwest, three in the Southwest, and eight in the West. Fifteen of the sites were major public universities, eight were smaller/commuter state universities, four were major private universities, and three were private colleges. The representation of Hispanics within the student body ranged from 1–60% (mean 12%).

Procedures
At each site, participants were directed to the study website using printed or emailed announcements. Participants were
Measures

Acculturation

Acculturation was measured using three cultural domains: practices, values, and identifications. Cultural practices were assessed using the Stephenson Multigroup Acculturation Scale (28). This measure consists of two subscales: heritage-culture practices (17 items, α = 0.91; e.g. “I listen to music of my ethnic group”), which includes use of one’s heritage language and association with heritage-culture friends and romantic partners; and US-culture practices (15 items, α = 0.84; e.g. “I speak English at home”), which includes use of English and association with US friends and romantic partners.

In terms of cultural values, the dynamic between individualism and collectivism serves as a backdrop for the Hispanic immigrant experience, where US culture is largely individualist and many Hispanic cultures are largely collectivist (29). Accordingly, we operationalized cultural values in terms of individualism and collectivism. Individualism (α = 0.76; e.g. “I’d rather depend on myself than on others”) and collectivism (α = 0.80; e.g. “It is my duty to take care of my family, even when I have to sacrifice what I want”) were assessed using corresponding 8-item scales developed by Triandis and Gelfand (30).

Cultural identifications were measured using the Multi-Group Ethnic Identity Measure (MEIM) (31) and the American Identity Measure (AIM) (32) to assess heritage and US identifications, respectively. The MEIM consists of 12 items (α = 0.92) that assess the extent to which one (a) has considered the subjective meaning of one’s race/ethnicity (e.g. “I think a lot about how my life will be affected by my ethnic group membership”) and (b) feels positively about one’s racial/ethnic group (e.g. “I am happy that I am a member of the ethnic group I belong to”). The AIM (α = 0.90) was developed by inserting “the United States” in place of “my ethnic group” in the MEIM.

Drinking games participation

We assessed drinking games participation using two items. We first asked about frequency of participation since the person had been in college using a response scale ranging from 0 (I don’t play drinking games) to 7 (Nearly every day). We then asked about the usual number of drinks consumed while playing drinking games. Response choices ranged from 0 (I don’t play drinking games) to 5 (7 or more drinks).

General alcohol consumption and negative drinking consequences

We used the consumption subscale from the Alcohol Use Disorders Identification Test (AUDIT) (33) to index general consumption (34,35) (α = 0.85). Specifically, participants were asked how often they consume alcoholic drinks, how many drinks containing alcohol they consume on a typical day of drinking, and how often they consume six or more drinks on a single occasion. The remaining seven AUDIT items were used to index negative drinking consequences (α = 0.81; e.g. being unable to remember events that occurred while one was drinking, injuring someone because of one’s drinking).

Data analytic plan

Our data analytic plan consisted of four steps, the last two of which involved structural equation modeling (SEM) using Mplus (36). First, we examined missing data rates and tested whether data were missing completely at random. Second, we computed correlation coefficients among the acculturation variables and among the alcohol use variables. Third, we conducted a multigroup invariance test across gender (see Figure 2). Specifically, we tested whether three sets of paths differed between men and women: (a) from acculturation to drinking games participation and to usual number of drinks consumed while gaming, (b) from acculturation to general alcohol consumption, and (c) from acculturation to negative drinking consequences.

Fourth, we estimated an SEM model where the six acculturation components (i.e. US practices, Hispanic practices, individualism, collectivism, US identity, Hispanic identity) were allowed to predict (a) frequency of gaming and the usual number of drinks consumed while gaming, (b) general alcohol consumption, and (c) negative drinking consequences. Depending on whether the model parameters were equivalent across gender, we planned to specify the model using the whole sample if the parameters were equivalent or in multigroup form if parameters were not equivalent.

Results

We first examined rates of missing data and evaluated whether we could safely estimate missing values using maximum likelihood estimation. Missing data rates ranged from 2.5% (US practices) to 23.4% (drinks consumed while playing drinking games). We conducted Little’s Missing Completely at Random (MCAR) (37) test to ascertain whether data could be assumed to be MCAR. The test produced a non-significant result, χ²(77) = 89.30, p = 0.16, indicating that the MCAR assumption was met. As a result, missing data were handled using robust full information maximum likelihood (FIML) estimation (38).

Table 1 presents means and percentages for study variables, Table 2 presents correlations among the various alcohol use variables, and Table 3 presents correlations among the acculturation components. All of the correlations
Correlations among acculturation components were generally positive for both genders, especially those involving the domains of values and identifications.

Research Question 1: Consistency of associations across gender

Results indicated that model parameters differed significantly across gender, $\Delta \chi^2(24) = 60.42$, $p < 0.001$. This finding indicates that the remaining analyses should be conducted separately for men and for women.

Research Question 2: Associations of acculturation domains with drinking games involvement, and differences between these relationships and links of acculturation with other alcohol-related behaviors

Two separate models were estimated: one including the entire sample and using drinking games frequency, general alcohol consumption, and drinking consequences; and a second model...
that used only participants who reported gaming at least once per month. The latter model included the amount of alcohol consumed (see Table 4) while gaming as an outcome. Both models were estimated in multigroup form across gender, and age and income were included as covariates for all outcomes. Both models fit the data well: both gamers and non-gamers, \( \chi^2(14) = 15.75, p = 0.33; \) CFI = 0.999; NNFI = 0.999; RMSEA = 0.016 (90% CI = 0.000–0.048); SRMR = 0.016; gamers only, \( \chi^2(14) = 15.69, p = 0.33; \) CFI = 0.981; NNFI = 0.960; RMSEA = 0.016 (90% CI = 0.000–0.048); SRMR = 0.018.

**Drinking games frequency**

For men, there were no significant predictors of gaming frequency. For women, US practices, \( \beta = 0.14, p < 0.01, \) and Hispanic practices, \( \beta = -0.08, p < 0.06, \) emerged as predictors of gaming frequency. These results indicate that greater endorsement of US practices, and lower endorsement of Hispanic practices, are associated with more frequent engagement in drinking games among women.

**Consumption while gaming**

Again, analyses for consumption while gaming were conducted using only participants who reported gaming at least once per month. For men, individualist values, \( \beta = 0.18, p < 0.001, \) emerged as the only significant correlate. For women, US practices, \( \beta = 0.10, p < 0.01, \) and Hispanic practices, \( \beta = -0.07, p < 0.05 \) emerged as significant or marginally significant correlates.

**General alcohol consumption**

Among men, US practices, \( \beta = 0.12, p < 0.01, \) and US identity, \( \beta = 0.11, p < 0.01, \) both emerged as positive correlates. For women, US practices, \( \beta = 0.11, p < 0.05, \) emerged as the only significant correlate.

**Negative drinking consequences**

US practices, \( \beta = -0.18, p < 0.001, \) emerged as the only significant predictors among men. For women, Hispanic practices, \( \beta = -0.08, p < 0.03; \) and US identity, \( \beta = -0.13, p < 0.01, \) emerged as significant correlates.

**Discussion**

This study examined the associations between acculturation components and drinking games involvement among Hispanic college students. We also investigated how certain cultural domains of acculturation are differentially associated with drinking games participation and other alcohol-related variables. With regard to drinking games, the most consistent set of correlates were in the practices domain, especially for women. US practices (positively) and Hispanic practices (negatively) were associated with both drinking games frequency and
consumption while gaming. These findings are consistent with prior research suggesting that acculturation (as indexed by cultural practices; e.g., English language use) is positively associated with increased levels of alcohol consumption among Hispanic college women (13,14). Among women, endorsement of US practices, along with fewer Hispanic practices, may signify a departure from traditional Hispanic drinking norms (27). For men, there was a positive association between individualistic values and increased levels of consumption while gaming. Perhaps lower levels of individualistic values denote lower orientations toward risktaking behavior, particularly in a high-risk context such as drinking games.

With regard to the other alcohol-related behaviors, much like the pattern observed among women, US practices were positively related to general alcohol consumption among men; however, US identification was positively related to general consumption for men only. These findings are contrary to another study (14) that utilized language use to index acculturation and found no associations between acculturation and heavy use among Hispanic men. Differences in measurement of acculturation and alcohol use may help explain these discrepant findings in the present study and in the literature at large (17).

Collectivist values were positively associated with negative drinking consequences for men, whereas for women, more US identification was associated with increased levels of negative drinking consequences. For men, more US practices were associated with lower levels of negative drinking consequences. Although Orona et al. (12) found no associations between acculturation (as indexed by practices) and drinking behaviors, the present results paint a different picture. Among women, identifying with the United States (along with greater endorsement of US practices) may represent a break from traditional gender norms, which in turn may be linked with greater likelihood of alcohol-related problems. Such gender imbalances do not exist for men, perhaps explaining why US practices were not linked with alcohol-related behaviors. These findings also shed light on the different patterns of associations that emerge between value- and identification-focused cultural dimensions of acculturation and drinking behaviors among Hispanic college men and women. The present findings are consistent with prior work (22) in stressing that different acculturation domains can have very different relationships to drinking outcomes.

In terms of acculturation and drinking games research, our results underscore the importance of considering frequency of drinking games participation separately from consumption while gaming, a point that has been noted by Zamboanga et al. (39). They found that some students do not play drinking games at all, while some play drinking games frequently but do not consume heavy amounts of alcohol during each game. Others play infrequently but drink heavily when they do, and still others play often and consume a large number of drinks when playing. Based on the present findings, acculturation may play an important role in determining which of these profiles a specific student most closely resembles. The intervention implications (including interventions to facilitate heritage-culture retention) likely depend on a given student’s frequency of gaming and on the amount of alcohol consumed on each gaming occasion.

**Limitations and future directions**

The present findings should be interpreted in the context of several important limitations. First, the cross-sectional design does not permit strong tests of directionality. Longitudinal designs, where prior values of the outcome variables are controlled, are needed to most definitively establish directionality in developmental research (40). Second, the present sample was 75% female, which is typical of social-science course enrollments; future studies could oversample men to generate a more gender-balanced sample. Third, because individuals often under-report or over-report risky behaviors for various reasons, collateral reports of drinking behavior and other risk-taking activities would be useful to collect in future studies. Fourth, individualism and collectivism were the only cultural values examined in the study. Other Hispanic cultural values, such as marianismo and machismo, which are central to Hispanic gender role socialization (41), may provide more insight into explaining the gender differences found in alcohol consumption. Fifth, the predominance of women in the present sample provides more statistical power to examine findings for women—although it should be noted that there was a reasonable number of men in the sample \( n = 343 \). Sixth, we did not include other important predictors of heavy alcohol use, such as parental alcoholism, antisociality, and Greek affiliation (42,43). Seventh, it is important to note the within-group diversity among Hispanics, who vary not just in terms of heritage nationality but also with regard to socioeconomic status, history in the United States, and other factors (6). Future studies should oversample from smaller Hispanic groups so that group-specific analyses can be conducted. Finally, we acknowledge that the strengths of the regression coefficients reported in the present study are modest.

In conclusion, despite these limitations, the present results indicate that certain acculturation domains are differentially associated with drinking games and other alcohol-related behaviors among Hispanic college men and women. Acculturation and drinking games participation are multifaceted constructs, and a more nuanced understanding of each construct is essential if we are to intervene in order to prevent or reduce problematic drinking among Hispanic students. Given the rapid expansion of both the Hispanic college student population and the Hispanic population as a whole, it is essential that more research on acculturation and drinking behaviors among Hispanic college students be conducted to understand which cultural domains pose a risk and which ones are protective. Much more work is needed to advance our understanding of the association between acculturation and alcohol use among Hispanic college students, and the present study is only one of many important steps in this direction.

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Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this paper.

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