



# Predictive Factors of Heavy Episodic Drinking in a Hispanic College Sample

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## Abstract

Heavy alcohol use is a serious health risk for many college students. However, it is uncertain how cultural variables impact alcohol use in college populations. In this study, the relationships between gender, bicultural identity, familism, and adherence to traditional gender roles with Heavy Episodic Drinking (HED) in a Hispanic college sample were assessed. Participants, 40 males and 40 females, were asked to complete a pencil and paper questionnaire packet, which assessed relevant demographic information, as well as measures designed to rate drinking amount and frequency, bicultural integration, familism, and traditional gender role adherence. Average age for the sample was 20.4 years ( $SD = 3.66$ ), in which the majority of participants were classified as either Freshmen or Sophomores (90.3%). Overall, 48.8% of participants reported engaging in HED, with 60% of men and 37.5% of women reporting HED, representing a significant difference between male and female engagement in HED ( $c2(1) = 4.05, p < .05$ ). Men also consumed more drinks per week than women ( $t(53.5) = 3.10, p < .05$ ). Logistic regression was utilized to assess possible predictors of HED. Neither the overall model nor individual predictors were statistically significant. These findings suggest the continued assessment of HED in the context of gender differences, with the addition of other culturally based constructs, as well as other psychosocial factors that are found to predict heavy drinking in other ethnocultural college aged student groups.

## Introduction

### Heavy Episodic Drinking

Heavy episodic drinking (HED) is a pattern of alcohol use in which an individual consumes a large amount of alcohol in a relatively limited amount of time (five or more drinks for men and four or more drinks for women in one sitting) (Wells, Graham, Speechley, & Koval, 2005). Binge drinking, or heavy drinking for an extended period of time, increases the risk for stroke and suicide, and may lead to alcohol poisoning, coma, and possibly death (Bagnardi, Biagiardi, La Vecchia, & Corrao, 2001; Lehman, Pillich, & Andrews, 1993; May et al., 2002; Rivara, Garrison, Ebel, McCarty, & Christakis, 2004).

This style of drinking is pervasive across college campuses, and is the most preventable cause of death for undergraduate students (Weschler, Dowdall, Davenport, & Castillo, 1995). It has been estimated that two in five college students are heavy episodic drinkers (Dowdall & Weschler, 2002), and are therefore at higher risk for engaging in risky behaviors such as: driving while intoxicated (Thombs, Wolcott, & Farkash, 1997), engaging in violent crimes including sexual assault (Dowdall & Weschler, 2002; Wells et al. 2005), and having unprotected sex (Thombs et al., 1997).

### Bicultural Identity Integration

Bicultural Identity Integration (BI), describes the degree to which a bicultured individual views their mainstream and minority cultural identities as compatible or oppositional.

Although it is known that differences exist between ethnicities and HED (Paschall & Flewelling, 2002), the influence of acculturation on HED suggests that Mexican American men and women have higher drinking rates compared to their Mexican counterparts (Caetano & Mora, 1988); with this difference more pronounced in females (Epstein, Botvin, & Diaz, 2000).

### Familism

Familism refers to the values and characteristics that are common among Hispanic families. Some of these traits include using the family network as a source of emotional and social support along with an increased desire to live in close proximity to family members (Gil, Wagner, & Vega, 2000).

Gil et al. (2000) have found that familism may be a protective factor against HED among Latino adolescents.

### Traditional Gender Role Adherence

Machismo, for Hispanic males, is characterized as emphasizing masculinity, bravery, and invulnerability (Neff, 2001). The female counterpart, *marianismo*, is characterized by women being good mothers and wives, who are caring, forgiving and patient with an emphasis on being self-sacrificing and dutiful (Baldwin & DeSouza, 2001).

Adherence to gender roles is predictive and therefore a possible risk factor for HED among Hispanic males (Markides, Krause, & Mendes de Leon, 1988); however engaging in HED is not condoned and therefore a possible protective factor among Hispanic females (Caetano & Mora, 1988).

## Aims and Hypotheses

The current study aimed to evaluate the extent to which conventional Mexican values relate to heavy episodic drinking (HED; 5 or more drinks for males and 4 or more drinks for females in a sitting) within a cross-section of predominately Mexican/Mexican American college students.

Level of HED engagement was hypothesized to be predicted by the following variables:

- Gender (males will have higher rates of drinking than females)
- Biculturalism (low levels of biculturalism, higher levels of drinking)
- Familism (higher levels of familism, lower levels of drinking)
- Gender roles (higher levels of adherence to gender roles, higher levels of drinking for males; lower levels of drinking for females)

## Method

### Participants

- 80 Hispanic college students recruited from the undergraduate pool of psychology students.
  - 40 male, 40 female
  - 69.5% Mexican American; 12.2% Mexican National; 17.1% Other Hispanic group
  - Mean age was 20.4 ( $SD = 3.67$ )
  - Participant characteristics are illustrated in Table 1.

- Using a moderate effect size of  $R^2 = .15$  along with the number of independent variables in the present study ( $k = 5$ ), an  $f2$  value was calculated ( $f2 = .176$ ), which allowed for the computation of the L-value ( $L = 12.83$ ). Using this L-value and the L table in Cohen, Cohen, West & Aiken (2003), it was deemed that 80 participants would be needed to detect the effect for the overall model, in which  $\alpha = .05$  and  $\text{power} = .80$ .

### Procedure

- Students met with the primary researcher or research assistant and were informed of the risks and benefits of participation.
- After giving consent, participants filled out the packet of measures.
- All students were thanked, debriefed, and provided research credit for participating in the study.

### Measures

- Demographics: gender, age, ethnicity, years of education, and Greek or athletic team association.
- *Daily Drinking Questionnaire (DDQ)* was used to measure levels heavy episodic drinking (Collins, Parks, & Marlatt, 1985). This questionnaire measures the average number of drinks over a 90 day period. Convergent validity has been established for this instrument.
- *Bicultural Identity Integration Scale Version 1 (BIIS-1)* was used to measure degree of cultural conflict (Benet-Martinez & Haritatos, 2005). This is a nine item measure with a scale of 1 (strongly disagree) to 5 (strongly agree) for a scale total range of 9 to 45 with higher scores indicating a more integrated bicultural identity. Cronbach's alphas have been found to range between .69 and .74.
- *Family Attitude Scale (FAS)* was used to measure degree of personal identification with Mexican American values (Ramirez, 1999). Participants respond to a variety of statements based on familial loyalty, rules and restriction of childbearing, respect for adults, separation of gender roles, male superiority, and time orientation on a 4-point Likert scale (1 = strongly agree, 2 = agree, 3 = disagree, 4 = disagree strongly). Scores are summed and range from 30 to 120, with higher scores representative of more traditional Mexican American values. Reliability has been found to range from .69 to .75.
- *Hypergender Ideology Scale (HGIS)* was used to measure degree of adherence to traditional gender roles (Hamburger, Hogben, McGowan, & Dawson, 1996). This 57-item survey uses a 6-point Likert scale that ranges from *Strongly disagree* to *Strongly agree* for a summed score total of 57 to 342, 20 items are reversed scores. Higher scores indicate a stronger adherence to traditional roles. Cronbach's alpha's are .96 for the overall survey, .94 for males, and .92 for females.

### Statistical Analyses

- Logistic regressions were used to test the following predictors of HED:
  - Independent variables: 1) gender, 2) bicultural identity, 3) familism, 4) and adherence to traditional gender roles

## Results

- Neither the model nor the individual predictors were statistically significant (see Table 2).
- Overall 48.8% of participants engaged in HED, with 60% ( $n = 24$ ) of male and 37.5% ( $n = 15$ ) of female participants reporting engaging in HED on at least one occasion. This relationship between gender and HED was found to be significant,  $\chi^2(1) = 4.05, p < .05$ .
- Given the large difference between the means for the amount of alcohol males ( $M = 13.88$ ) and females ( $M = 5.59$ ) consumed per week, a t-test was conducted to assess whether a univariate relationship existed. This relationship was significant ( $t(53.5) = 3.10, p < .05$ ; see Figure 1).
- Calculations revealed that the true  $R^2$  was .088, suggesting this study was underpowered by about half compared to originally predicted effect size and power.

Table 1: Participant Characteristics

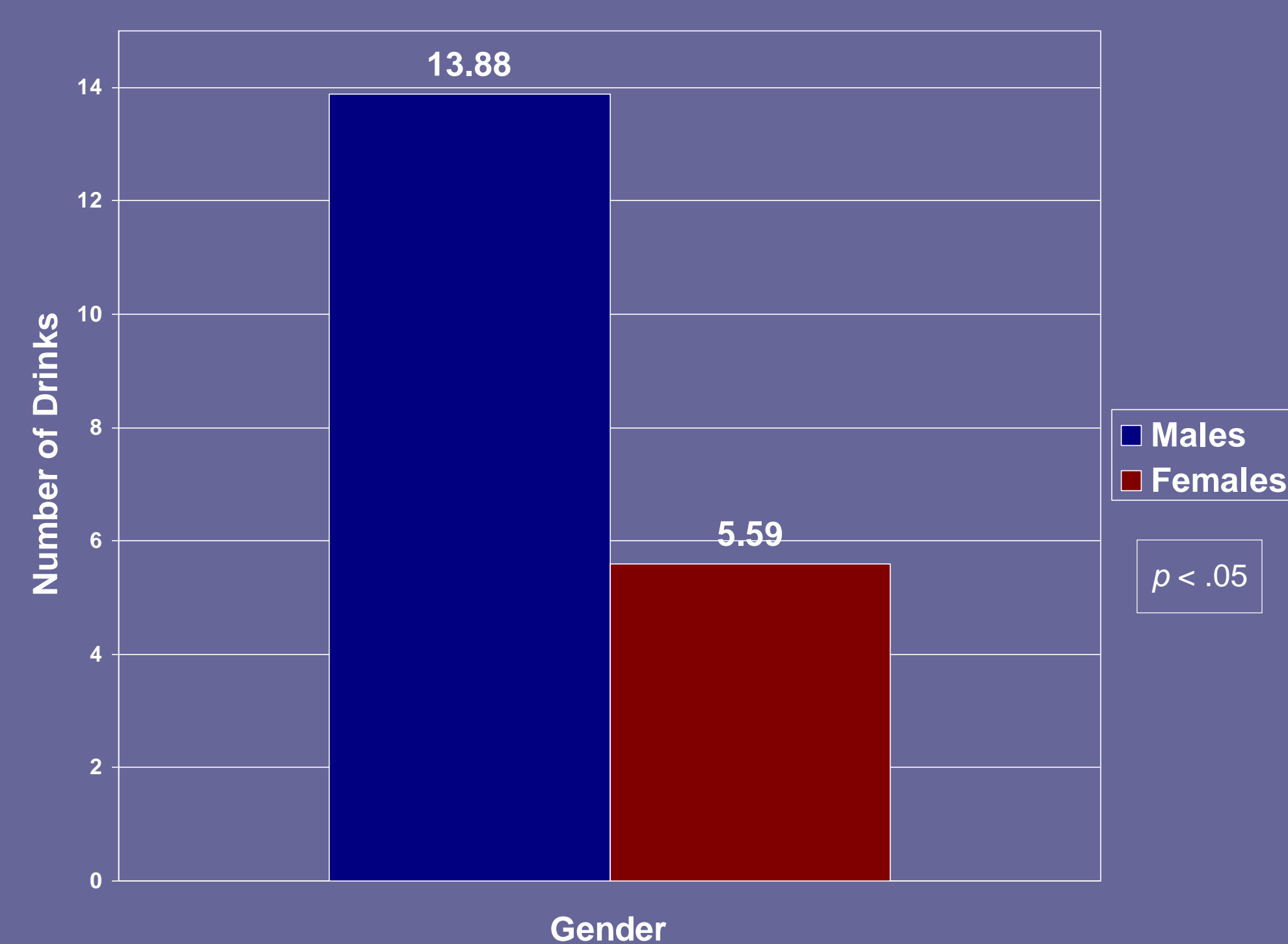
Variable	%	Mean	SD
<b>Gender</b>			
Males	50		
Females	50		
<b>Age</b>		20.4	3.66
<b>Ethnicity</b>			
Mexican American	69.5		
Mexican National	12.2		
Other Hispanic group	17.1		
<b>Scale Scores</b>			
Bicultural Identity Integration		33.2	6.41
Family Attitudes		77.1	9.30
Hypergender Ideology		144.36	30.1

Table 2: Summary of Logistics Regression Analysis for Variables Predicting HED

Variables	B	Odds Ratio	95% Confidence Intervals		p
			Lower	Upper	
Bicultural Identity	-.06	.934	.87	1.01	.10
Familism	.00	1.0	.94	1.0	.51
Traditional Gender Roles	.00	1.01	.99	1.03	.84
Gender	.856	2.36	.89	6.25	.08
Constant	.77	1.96			.84

Note.  $N = 80$ . Nagelkerke  $R^2 = .12$ ; model goodness of fit  $\chi^2(4) = 7.67, p = .10$ .

Figure 1: Average Number of Drinks for Males and Females



## Discussion

### Implications of Findings

- The 48% HED rate for the current sample is higher than the 34% national (CDC, 2002) and 27% state rate (Texas Dept. State Health Services, 2007a) of college HED, and may be due to the increased availability of alcohol from Mexico.
- Findings from this study are consistent with previous studies in other ethnocultural groups, in which men are more likely to engage in HED than women (CDC, 2002; Fromme & Corbin, 2004; Wilsnack, Vofeltanz Wilsnack, & Harris, 2000).
- Though none of the culturally based constructs were significantly associated with HED, there are a few noteworthy explanations:
  - Lower effect size than hypothesized suggests the study was likely underpowered.
  - Culturally based constructs used in the study may be less relevant to college students living on the border where they are required to switch their cultural framework on a daily basis.
  - Other factors may be more relevant in predicting HED for individuals living on border; for example, it has been suggested that Mexican Nationals along the border drink more than American counterparts, in which case, residence may be a viable predictor (Texas Department of State Health Services, 2007b).

### Future Directions

- The current results suggest that Hispanic HED may be more similar to HED in other ethnic groups (i.e. gender); however, we have continued data collection for this study to ensure proper power and detection of a lesser effect size than hypothesized, as such variables may still be clinically meaningful with regard to Hispanic HED prevention and intervention.
- A more representative sample of Hispanic border region college students with regard to age and/or years in school would be useful to increase generalizability of rates and predictors of HED.
- The inclusion of attitudinal and behavioral correlates of heavy drinking found in other ethnocultural groups (e.g., drinking expectancies, illicit drug use) may result in the identification of stronger and more reliable predictors of HED.
- A prospective study of Hispanic college student heavy drinking and its correlates is warranted to assess temporal relationships between constructs of interest.
- Further investigation should continue to assess HED related factors in the context of potential gender differences.

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