Short Communication

Blackouts and hangover experiences among Hispanic and Non-Hispanic White college students

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ABSTRACT

Blackouts and hangovers may negatively impact college students’ health and productivity. However, few studies have considered the impact of cultural differences on students’ individual experiences with blackouts and hangovers. To address this issue, the current study explored the potential relationships of shame and resilience with Hispanic (n = 381) and non-Hispanic White (NHW, n = 332) students’ self-reported blackouts and hangover experiences. Students completed an online survey measuring shame, resilience, presence of lifetime blackout experiences preceding a hangover, and past-year hangover severity. Analyses included separate path models examining shame and resilience, and the interaction between shame and resilience with Hispanic ethnicity in relation to blackouts and hangover experiences. Significant pathways emerged between resilience, but not shame, and blackouts and hangover experiences. A subscale of resilience reflecting personal competence and tenacity was related to greater likelihood of reporting blackouts and greater hangover severity for Hispanics but not NHW students. Conversely, a dimension of resilience characterized by trusting one’s instincts and tolerance of negative affect was related to a lower likelihood of reporting a blackout preceding a hangover for Hispanics but not NHW students. Finally, a resilience subscale associated with spiritual influences was positively related to blackouts in the participant population as a whole. These results reinforce the notion that resilience is an important target for intervention and prevention of hazardous drinking, but reveal that it may have both positive and negative effects in college students, which may differ by ethnicity.

1. Introduction.

Hangovers involve headache, nausea, thirst, and fatigue (Rohsenow et al., 2006). However, hangover-inducing drinking may also increase the risk of blackouts, or amnesia for events during intoxication (Hartzel & Fromme, 2003). Among young adults, both blackouts and hangovers are widespread. White and colleagues (2002) found that 40% of college students reported a past-year blackout. Blackouts and hangovers adversely impact students’ productivity, physical health, and well-being (Hartzel & Fromme, 2003; Kowalewski et al., 1989; Piasceki et al., 2017). However, students may view these events as collective periods of shared suffering that strengthened their group identity within the collegiate drinking culture (Griffin et al., 2018). Understanding the contributors to students’ experiences of blackouts and hangovers could illuminate interventions for hazardous drinking.

1.1. Cultural influences

Few studies have considered how culture might impact students’ blackouts and hangover experiences. A literature gap exists for collegiate Hispanics, particularly Hispanic women. Hispanics represent a growing demographic, accounting for 19% of Americans in 2020 and comprising the second largest U.S. racial/ethnic group (Funk & Lopez, 2022). However, most research on collegiate blacks and hangovers has focused on Non-Hispanic Whites (NHWs). We expanded these boundaries by examining blackouts and hangovers in a largely female sample of collegiate Hispanics. This is important because collegiate alcohol misuse and its consequences can have lifelong effects (White & Hingson, 2013), especially for at-risk, late adolescent/emerging adult Hispanics (Jacobs et al., 2016). Differences in blackouts and hangovers in Hispanics versus NHWs could inform interventions.

Gloria and Peregoy (1996) note that many Hispanics are raised in environments where alcohol-related problems/consequences are
viewed as moral weaknesses, the public recognition of which may lead to shame. This may be exacerbated if they feel that they are not meeting personal, familial, or sociocultural expectations (Hernandez & Mendoza, 2011). Ultimately, this could lead to a cycle of shame and addictive behavior (Prosek et al., 2017). Thus, shame may be an important intervention target (Hernandez & Mendoza, 2011), though it’s role in collegiate blackouts and hangovers remains understudied. Understanding this relationship could help break the shame-addiction cycle, particularly for Hispanics.

Hispanic cultures also impart resilience and decrease addiction risk through religion and family values like parental involvement, ethnic identity development, community connectedness, and collectivism (Kupermic et al., 2009). Indeed, resilience predicts fewer overall alcohol-related problems among collegiate Hispanics (Sanchez et al., 2022). However, the literature remains sparse for relationships between resilience, blackouts, and hangovers. To our knowledge only one study has examined this, and failed to link resilience with hangover severity in Dutch college students (van de Loo et al., 2018). However, culture influences these effects (Sanchez et al., 2007). Perhaps resilience-increasing interventions could decrease hazardous drinking and consequences for Hispanics.

1.2. Hypotheses

We examined shame, resilience, and experiences of blackouts and hangovers in Hispanic and NHW collegiate drinkers. Based on previous research (Gloria & Perez, 1996; Prosek et al., 2017), we hypothesized a positive association between shame and blackouts and hangover severity, particularly for Hispanics. Extending Sanchez and colleagues’ research (2002), we hypothesized a negative association between resilience and blackouts and hangover severity, especially for Hispanics.

2. Materials and methods

2.1. Procedure and participants

Our Institutional Review Board approved this study, and research was performed in accordance with the ethical standards of the Declaration of Helsinki. Students gave informed consent prior to participation in the anonymous online survey. Undergraduates were recruited from Introduction to Psychology courses at a large Hispanic Serving Institution in Central Texas, United States. Participants were aged 18 – 37 years and reported previous alcohol use. They were compensated with class credit or extra credit. We used National Institutes of Health (2015) categories to group Hispanics of any race (n = 381) and NHWs (n = 332).

2.2. Questionnaires

Alcohol Use was measured with a six-month Quantity Frequency Index (QFI; Cahalan et al., 1969) reporting the average U.S. fluid ounces of absolute ethanol consumed per week. The QFI is a valid and reliable measure (O’Hare et al., 1997). Lifetime binge drinking was based on consumption ≥ four drinks (for women) or ≥ five drinks (for men) in a drinking episode (Crandall et al., 2008).

Blackouts (full or fragmentary) were recorded as lifetime presence (1) or absence (0) of memory problems after intoxication leading to a hangover.

Hangover Severity (past-year) was rated from 0 (not at all severe) to 100 (extremely severe), providing a global measure of hangover experience.

The Internalized Shame Scale (Cook, 1988) consists of 35 lifetime feelings/experiences rated (0) never to (4) almost always. Higher scores reflect greater shame. Subscales included inadequate/deficient, embarrassed/exposed, fragile/out of control, and empty/lonely. This scale has good internal consistency (0.95) and test–retest correlation (0.81) (Cook, 1988).

The Connor-Davidson Resilience Scale (Connor & Davidson, 2003) includes 25 past-month items rated (0) rarely true to (4) true nearly all of the time. Higher scores reflect greater resilience. Subscales included personal competence/high standards/tenacity, trust in one’s instincts/tolerance of negative affect/strengthening effects of stress, positive acceptance of change/secure relationships, control, and spiritual influences. Previous studies revealed good internal consistency (0.89) and test-retest reliability (0.87) (Connor & Davidson, 2003).

2.3. Data analyses

Participant characteristics were compared by ethnicity. Continuous variables were analyzed via Independent t-tests, and categorical comparisons used Chi-Square analyses. Two path models were analyzed using Mplus version 8 with robust maximum likelihood estimation and adjusted for QFI, gender (man, woman; 20 non-binary participants were omitted from statistics), college class, and body mass index. We assessed the relation between the shame subscales (first model)/resilience factors (second model) to both blackouts and hangover severity, and the moderating effect of ethnicity on these pathways. Pathways predicting blackouts and hangover severity were modeled with logistic and linear approaches, respectively. Continuous predictors in the interaction terms were centered. Significant effects were identified using an alpha criterion for B coefficients of p < .05 and 95% confidence intervals of the standardized estimates that did not contain 0. Significant interactions were probed with follow-up path analyses by ethnicity.

3. Results

3.1. Participant characteristics

See Table 1. There were no group differences in age or gender distribution. QFI did not differ between groups and equaled approximately seven drinks/week. Binge drinking differed between groups (χ²(1) = 13.78 (p = .001). The Connor-Davidson Resilience Scale (Connor & Davidson, 2003) includes 25 past-month items rated (0) rarely true to (4) true nearly all of the time. Higher scores reflect greater resilience. Subscales included personal competence/high standards/tenacity, trust in one’s instincts/tolerance of negative affect/strengthening effects of stress, positive acceptance of change/secure relationships, control, and spiritual influences. Previous studies revealed good internal consistency (0.89) and test-retest reliability (0.87) (Connor & Davidson, 2003).

Table 1

| Participant Characteristics | Hispanic (n = 381) | Non-Hispanic White (n = 332) | Significance |
|-----------------------------|-------------------|-----------------------------|--------------|
| Age (years)                 | 19.0 (1.8)        | 19.1 (2.1)                  | p = .65      |
| Gender (% female)           | 75 % (282)        | 79 % (257)                  | p = .25      |
| QFI (past six months)       | 0.54 (1.25)       | 0.65 (1.02)                 | p = .24      |
| Binge Drinking (% lifetime) | 64 % (242)        | 76 % (251)                  | p = .001     |
| Blackouts (% lifetime)      | 72 % (187)        | 68 % (186)                  | p = .49      |
| Hangover Severity (past year) | 30.10             | 32.09 (20.04)               | p = .34      |

| Shame (lifetime)            |                   |                            |              |
| Inadequate and Deficient    | 14.77 (10.67)     | 15.76 (9.80)               | p = .22      |
| Embarrassed and Exposed     | 9.60 (7.25)       | 10.03 (7.13)               | p = .45      |
| Fragile and Out of Control  | 7.05 (6.46)       | 7.05 (5.86)                | p = .99      |
| Empty and Lonely            | 7.13 (5.79)       | 7.01 (5.60)                | p = .79      |
| Resilience (past month)     | 22.23 (6.22)      | 21.86 (5.66)               | p = .44      |
| Factor 1: competence/high standards/tenacity | 17.16 (5.40) | 16.99 (4.83) | p = .67 |
| Factor 2: trust instincts/tolerate negative affect | 13.90 (3.83) | 13.78 (3.43) | p = .68 |
| Factor 3: accept change/secure relationships | 7.76 (2.84) | 7.60 (2.77) | p = .48 |
| Factor 4: control | 5.55 (2.05) | 5.30 (2.18) | p = .14 |
| Factor 5: spiritual influences | 2.24 (1.48) | 2.25 (1.50) | p = .89 |

Note. Continuous variables are shown as Means (Standard Deviations) and categorical variables are shown as % (n). The denominators for gender were 374 (Hispanic) and 325 (NHW), as analyses excluded non-binary participants. Denominators for blackouts were 261 (Hispanic) and 270 (NHW) due to missing data. QFI = Quantity Frequency Index of Alcohol Consumption, average ounces of absolute ethanol consumed per day.
11.49, \( p = .001 \) and suggested that some participants may have consumed their weekly drinks in one episode. Groups did not differ on blackouts or hangover severity and reported similar shame and resilience.

### 3.2. Path analyses

Table 2 shows standardized coefficients and 95% confidence intervals for the first and second path models.

**Shame.** There were no significant pathways from ethnicity, shame, or ethnicity\*shame in relation to blackouts or hangover severity.

**Resilience.** Spiritual influences was positively related to blackouts (\( B = 0.19, \ SE = 0.09, \ p = .034, \ OR = 1.20 \)). For blackouts, ethnicity interacted with competence/high standards/tenacity (\( B = 0.23, \ SE = 0.11, \ p = .025, \ OR = 1.26 \)), trust instincts/tolerate negative affect (\( B = -0.22, \ SE = 0.09, \ p = .010, \ OR = 0.80 \)), and spiritual influences (\( B = -0.19, \ SE = 0.09, \ p = .032, \ OR = 0.83 \)). For hangover severity, ethnicity interacted with competence/high standards/tenacity (\( B = 2.36, \ SE = 1.12, \ p = .034 \)).

Stratified analyses indicated that competence/high standards/tenacity (\( B = 0.20, \ SE = 0.09, \ p = .033, \ OR = 1.22 \)) and trust instincts/tolerate negative affect (\( B = -0.19, \ SE = 0.07, \ p = .005, \ OR = 0.83 \)) were related to higher (competence/high standards/tenacity) or lower (trust instincts/tolerate negative affect) odds of experiencing blackouts for Hispanics but not NHWs (competence/high standards/tenacity: \( B = -0.50, \ SE = 0.06, \ p = .368, \ OR = 0.95 \); trust instincts/tolerate negative affect: \( B = 0.04, \ SE = 0.06, \ p = .536, \ OR = 1.04 \)). Spiritual influences was unrelated to blackouts for both Hispanics (\( B = -0.00, \ SE = 0.03, \ p = .984, \ OR = 1.00 \)) and NHWs (\( B = 0.16, \ SE = 0.09, \ p = .082, \ OR = 1.17 \)), though the interaction from the initial path model suggests that these slopes are significantly different. For hangover severity, competence/high standards/tenacity was positively related to hangover severity for Hispanics (\( B = 2.52, \ SE = 0.91, \ p = .006 \)) but not NHWs (\( B = 0.22, \ SE = 0.64, \ p = .727 \)).

### 4. Discussion

This study is the first to explore the influences of shame and resilience on blackouts and hangovers in Hispanic and NHW collegiate drinkers. While our hypotheses were not consistently realized, ethnicity differentially impacted multiple resilience sub-scales, suggesting that culture should be considered in interventions.

#### 4.1. Shame

Shame is an important target for addiction interventions and might be more prevalent among individuals who feel that they are not meeting expectations (Hernandez & Mendoza, 2011). Surprisingly, we did not find significant relationships between shame and blackouts and hangovers. However, this aligns with college students’ views of negative alcohol-related consequences as periods of shared suffering (Griffin et al., 2018), which might allay their shame about blackouts and hangovers.

#### 4.2. Resilience

Resilience has been linked to decreased drinking (Johnson et al., 2011; Wong et al., 2006), however, our results were more nuanced. Resilience was a factor in blackouts and hangovers, however results varied by ethnicity and resilience sub-type. Hispanics (but not NHWs) who endorsed competence/high standards/tenacity, reported higher odds of blackouts and more severe hangovers. Thus, competence/high standards/tenacity may not be a beneficial trait for Hispanics during a night of collegiate drinking. During intentional, competitive drinking activities (e.g., chugging, keg stands; Zamboanga et al., 2013), competence/high standards/tenacity might predispose students to hazardous drinking leading to blackouts and hangovers. Students might also deemphasize the impact of impending blackouts and hangovers because they plan to tenaciously attend school despite the previous night’s activities. This could enable hazardous drinking and increase alcohol-related presenteeism (Lack et al., 2011), such as attending school while hungover, leading to a longer-term academic impact.

In contrast, trusting instincts/tolerating negative affect was protective against blackouts for Hispanics. For college students in general, drinking to cope and intolerance of negative affect lead to riskier drinking (Armeli et al., 2008), thus, it is logical that tolerance of negative affect would reduce blackouts. Finally, spiritual influences were positively related to blackouts in the whole sample. This may reflect a spiritually-oriented fatalism or God Locus of Control that is linked to health risk behaviors (Perrotte et al., 2021).

#### 4.3. Interventions and future research

The National Institute on Alcohol Abuse and Alcoholism (NIAAA, 2022) recommends individual and environmental level strategies for interventions targeting hazardous collegiate drinking. Although preliminary, our results could be incorporated into each. At the individual level, culturally-sensitive interventions for Hispanics could include nuanced information about the relationships between resilience and collegiate drinking. Rather than focusing on resilience as a single concept, clinicians and researchers might consider differential impacts.

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**Table 2**

| Predictors | Blackouts (Shame) | Hangover Severity (\( R^2 = 0.09 \)) |
|------------|-------------------|-------------------------------------|
| Ethnicity  | \( \beta \) | LLCI | ULCI | \( \beta \) | LLCI | ULCI |
| Inadequate and Deficient (ID) | 0.10 | -0.02 | 0.23 | -0.08 | -0.20 | 0.04 |
| Embarrassed and Exposed (EE) | 0.20 | -0.22 | 0.62 | 0.01 | -0.34 | 0.37 |
| Fragile and Out of Control (FOC) | -0.02 | -0.66 | 0.25 | -0.17 | -0.54 | 0.21 |

**Table 2**

| Predictors | Blackouts (Resilience) | Hangover Severity (\( R^2 = 0.20 \)) |
|------------|-----------------------|-------------------------------------|
| Ethnicity  | \( \beta \) | LLCI | ULCI | \( \beta \) | LLCI | ULCI |
| Factor 1 (competence/high standards/tenacity) | 0.04 | -0.06 | 0.15 | -0.05 | -0.18 | 0.09 |
| Factor 2 (trust instincts/tolerate negative affect) | -0.10 | -0.31 | 0.11 | 0.03 | -0.29 | 0.35 |
| Factor 3 (accept change/secure relationships) | 0.06 | -0.13 | 0.24 | 0.16 | -0.42 | 0.11 |
| Factor 4 (control) | -0.12 | -0.30 | 0.05 | -0.08 | -0.29 | 0.13 |
| Factor 5 (spiritual influences) | 0.50 | 0.24 | 0.76 | -0.26 | -0.83 | 0.30 |

**Note:** Analyses are adjusted for alcohol consumption, gender, college class, and BMI. LLI/ULCI are 95% Lower Limit/Upper Limit Confidence Intervals. All continuous predictors are centered. Significant effects are highlighted in bold. Follow-up tests for significant interactions are described in text. Variance accounted for (\( R^2 \)) presented for linear equations only.
of resilience sub-types on hazardous drinking and its consequences. Environmentally, colleges should raise awareness about the dangers of hazardous group drinking activities where tenacity might increase negative consequences. Further, clinicians and researchers should emphasize the harmful impact of alcohol-related presenteeism on academics. Finally, because trust of instincts/tolerance of negative affect were associated with decreased blackouts among Hispanics, these qualities should also be cultivated individually and environmentally.

4.4. Limitations

Several retrospective timeframes were used in this study. The precision of future studies could be improved by modifying the time periods covered by various standardized questionnaires in order to focus on a common time frame; thus, the current findings should be considered preliminary until validated in that manner. Further, given the ongoing discussion of hangover measurements (Verster et al., 2020), future researchers might expand hangover severity to include individual symptoms and their psychological impact.

5. Conclusion

Our findings reinforce the importance of resilience as an intervention target for hazardous collegiate drinking and its consequences among Hispanics. Researchers and clinicians should also consider the potentially differential impacts of resilience sub-types in diverse populations.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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