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The Role of Sex-Related Alcohol Expectancies in Alcohol-Involved Consensual and Non-Consensual Sex among Women of Asian/Pacific Islander and Women of European Race/Ethnicity

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Abstract

Alcohol-involved sexual experiences, including incapacitated sexual assault and alcohol-involved sex, are major public health concerns among college women. Further, racial/ethnic diversity among college students is increasing, particularly with regard to increases in college students of Asian/Pacific Islander race/ethnicity. Of relevance, evidence suggests differences in sexual assault rates across ethnicities and cultures; however, no known study to date has examined differences by ethnicity and first language in expectancies and experiences specifically surrounding alcohol and sex. The current study sought to examine differences in incapacitated sexual assault, alcohol-involved sex, and heavy episodic drinking, as well as differences in sex-related alcohol expectancies among native English-speaking college women of European (EU) race/ethnicity, native English-speaking women of API race/ethnicity, and non-native English-speaking women of API race/ethnicity (NNES-API). EU reported higher frequency of heavy episodic drinking, alcohol-involved sex, and incapacitated sexual assault compared to API and NNES-API. Additionally, API reported more frequent alcohol-involved sex and incapacitated sexual assault compared to NNES-API, in part due to API's stronger endorsement of sexual disinhibition-related alcohol expectancies (indirect effects: $\beta = -.04$, $p = .04$ and $\beta = -.07$, $p = .04$, respectively). Findings highlight the important role of expectancies in acculturation and influence on actual alcohol-involved sex and sexual assault.

Keywords

incapacitated sexual assault; sexual risk-taking; sex-related alcohol expectancies alcohol; ethnicity; acculturation

Incapacitated sexual assault, defined as non-consensual sex that is perpetrated when the victim is too intoxicated to consent, is a major concern on college campuses. One in five college women experience sexual assault, and at least 50% of these assaults involve alcohol (Fisher, Daigle, Cullen, & Turner, 2003), likely because perpetrators target individuals who are intoxicated. Individuals with a sexual assault history are at increased risk for significant long-term psychological consequences (Lorenz & Ullman, 2016) and multiple health risk behaviors, including heavy episodic drinking, risky sexual behavior, sexual re-victimization, eating disorders, and drug abuse (Turchik & Hassija, 2014). Both increased alcohol use and alcohol-involved sex are associated with higher risk of revictimization among sexual assault victims (Testa, Hoffman, & Livingston, 2000), and are also prevalent among college students. At least 40% of college students reported heavy episodic drinking (consuming four or more drinks in two hours) in the past month (SAMHSA, 2015), and 60-80% of casual sexual encounters are alcohol-involved sex, or sexual encounters where alcohol is consumed by one or both partners prior to or during sex (Lewis et al., 2011). Thus, examining heavy episodic drinking, alcohol-involved sex, and incapacitated sexual assault together is important.

Focusing on college women could inform sexual assault prevention and intervention strategies among this particular population. Although men also experience sexual assault, rates of sexual assault reporting are higher among women (Fisher et al., 2003). Further, while women aged 18-25 are at high risk for sexual assault, college women are known to have particularly high risk. One in four women experience sexual assault while they are enrolled in college (Fisher et al., 2003), and moreover, there has been recent heightened political and public pressure to reduce sexual assault on college campuses (White House Council on Women and Girls, Office of the Vice President, 2014).

With regard to the population of college women, the ethnic make-up of college campuses is evolving, and there has been an increase in the Asian/Pacific Islander population on U.S. college campuses in recent years (Institute of International Education, 2014). Research on this population is warranted, considering U.S.-born Asian/Pacific Islander high school students have the highest college enrollment rate of any ethnic group aside from those of European race/ethnicity (U.S. Department of Education, National Center for Education Statistics, Institute of Education Sciences, 2013). There is evidence for differences in rates of alcohol use and sexual assault among women of Asian/Pacific Islander race/ethnicity and European race/ethnicity; however, to date, no study has examined how beliefs about the effects of alcohol on the sexual experience (i.e., sex-related alcohol expectancies) may differentially influence heavy episodic drinking and alcohol-involved sex and incapacitated sexual assault among these groups. It is possible that perpetrators target potential victims based on ethnicity and alcohol-involved factors. Thus, the study sought to examine the role of heavy episodic drinking and sex-related alcohol expectancies in the risk for incapacitated

sexual assault and alcohol-involved sex among European and Asian/Pacific Islander college women.

Due to a number of cultural factors, rates of endorsing sexual assault differ across racial/ethnic groups, particularly those of Asian/Pacific Islander race/ethnicity (Koo, Nguyen, Andrasik, & George, 2015). For example, while some studies have shown that those of European race/ethnicity (EU) and those of Asian/Pacific Islander race/ethnicity (API) report similar rates of sexual assault experiences *during* college (Crisanti et al., 2011; Gilmore, Granato, Wilson, & George, 2016), recent large scale studies show that API women report lower rates of pre-college sexual assault and college sexual assault compared to EU women (Cantor et al., 2015; Krebs, Lindquist, Warner, Fisher, & Martin, 2007). With respect to rates of *consensual* sex among API and EU, evidence is mixed. Among college students, there is evidence that Asian race/ethnicity is associated with later onset of sexual debut (Meston, Trapnell, & Gorzalka, 1996) and more conservative sexual attitudes (Ahrold & Meston, 2010); however, there is also evidence that European and Asian American college students report comparable rates of risky sexual behaviors, including unprotected sex and drug-involved sex (Dominicus, Wong, & LeDeon, 2005).

Therefore, while literature has highlighted differences across groups in consensual sex and sexual assault, less research has taken into account how alcohol use may explain some of the differences across groups. Alcohol use is particularly important to consider due to (1) the prevalence of drinking among college students; (2) the link between alcohol use and sex and sexual assault, particularly among the college population; and (3) differences in rates of drinking across API and EU. For the current study, we focus on heavy episodic drinking, defined as consuming 4 or more drinks within a two-hour period (NIAAA, 2004). Perpetrators may target API and EU similarly based on their alcohol use or they may target these populations differently due to global differences in alcohol use among these populations.

Alcohol, Incapacitated Sexual Assault, and Alcohol-Involved Sex

Alcohol use is a common factor linked to both sexual assault and sex among college students. Between 60-80% of college sexual encounters involve alcohol (Lewis et al., 2011), and alcohol use, particularly heavy episodic drinking, is one of the most robust predictors of sexual assault victimization (Lorenz & Ullman, 2016). Alcohol use increases risk of sexual assault victimization by decreasing perceptions of risk for assault (Testa et al., 2000); reducing threat perception (George et al., 2009); and narrowing the perceptual field, due to the detriment of higher-order cognitive processes such as judgment and future thinking (Cue, George, & Norris, 1996; Gidycz, McNamara, & Edwards, 2006). Perpetrators also may target individuals who are intoxicated due to reduced risk perception, threat perception, and ability to fight back. Additionally, incapacitated sexual assault generally has more harmful outcomes than sexual assault that does not involve alcohol, including victim injury, assault severity, and substance misuse following the assault (Abbey et al., 2002, 2003; Kilpatrick et al., 2007). Another important explanation for the link between alcohol use and alcohol-involved sex and sexual assault is sex-related alcohol expectancies.

Sex-Related Alcohol Expectancies

Alcohol use and alcohol-involved sex can also be facilitated by sex-related alcohol expectancies, or common myths, beliefs, or expectations regarding the effects of alcohol on the sexual experience (George & Gilmore, 2013), such as beliefs that alcohol lowers sexual inhibitions (e.g., more likely to have sex on a first date), increases sexual risk behaviors (e.g., more likely to have unprotected sex), and enhances the sexual experience (e.g., more likely to enjoy sex; Dermen & Cooper, 1994). Sex-related alcohol expectancies are associated with likelihood of engaging in alcohol-involved sex, such that those who endorse stronger sex-related alcohol expectancies are more likely to engage in sex on days that they are also drinking (Patrick, Maggs, & Lefkowitz, 2015). Experimental studies also show that participants who believe that they are drinking alcohol report greater sexual arousal if they also endorse stronger sex-related alcohol expectancies (George et al., 2000). Even further, sex-related alcohol expectancies are linked to sexual assault risk. Women who have experienced incapacitated sexual assault endorse stronger alcohol expectancies and report more frequent drinking compared to non-victims and victims of non-incapacitated sexual assault (Benson, Gohm, & Gross, 2007; Marx et al., 2000).

Alcohol Use Across Race/Ethnicity

There are also important differences in rates of alcohol use among API and EU that may contribute to differences in alcohol-involved sex and sexual assault. API engage in less heavy episodic drinking compared to EU (Cacciola & Nevid, 2014; Scholly, Katz, & Kehl, 2014), which could serve as a protective factor against sexual assault among API. Still, in the U.S., Asian Americans report higher rates of problem drinking compared to other racial/ethnic groups aside from Europeans and Native Americans (Grant et al., 2004), suggesting that alcohol-related risks are important to target with this population. One explanation for differences in alcohol use among EU and API is that some Asian ethnicities are at a higher risk of experiencing more negative physical effects from alcohol due to genetic variants affecting alcohol metabolism that are more common in some groups (Luczak, Glatt, & Wall, 2006). Another explanation is that cultural norms influence drinking patterns, and thus, unique cultural norms regarding alcohol use across race/ethnicity and culture also contribute to group differences in drinking rates (Cook, Bond, Karriker-Jaffe, & Zemore, 2013). To our knowledge, no studies have examined sex-related alcohol expectancies as a mechanism to understand the associations between alcohol use and alcohol-involved sex and incapacitated sexual assault among API and EU college women. Given differences in heavy episodic drinking across race/ethnicity, there may also be differences in sex-related alcohol expectancies, which in turn may influence differences in risk for incapacitated sexual assault and alcohol-involved sex across API and EU college women. Further, examining the influence of sex-related alcohol expectancies across race/ethnicity could inform prevention and intervention for incapacitated sexual assault and negative outcomes associated with alcohol-involved sex since expectancies are malleable constructs (Dunn, Lau, & Cruz, 2000).

Race/Ethnicity and Incapacitated Sexual Assault and Alcohol-involved Sex

There is some evidence for differences in incapacitated sexual assault among API and EU women. For example, one recent study found that EU college women experienced more severe sexual assault compared to API college women, in part because EU women engaged in more frequent heavy episodic drinking compared to API women (Gilmore et al., 2016); however, the study did not specifically examine incapacitated sexual assault and also did not examine sex-related alcohol expectancies or alcohol-involved sex. Another study showed that among college women who had *not* experienced incapacitated sexual assault, API women had fewer drinking problems than EU women; however, among those who *had* a history of incapacitated sexual assault, API women reported *more* drinking problems than EU women (Nguyen et al., 2010). This suggests that heavy episodic drinking may put API women at an even higher risk of experiencing incapacitated sexual assault and alcohol-involved sex, but these outcomes were not specifically examined. Taken together, while there is some evidence that lower rates of heavy episodic drinking among API may serve as a protective factor against sexual assault (Gilmore et al., 2016), heavy episodic drinking among API women in particular may increase their vulnerability to sexual assault. Thus, further research is needed to determine what may be protective factors among this group. The current study fills a gap in the literature by examining prospective associations between heavy episodic drinking and the risk for incapacitated sexual assault among API and EU college women.

There is even less known about differences in alcohol-involved sex among API and EU women. One study found that more college students who identified as White reported engaging in sex while intoxicated or high more in the last month compared to those who identified as Asian (Schwartz et al., 2011), but it is unclear whether these were consensual behaviors, and results did not differentiate between alcohol-related vs. other substance-related incidents, thus, further research is needed. Examination of both alcohol-involved sex and incapacitated sexual assault is important since more frequent heavy episodic drinking and alcohol-involved sex have been shown to increase risk for sexual assault among college women, and sexual assault victims engage in increased sex and heavy episodic drinking, putting them at risk for revictimization (Messman-Moore & Long, 2003).

Culture, Language, and Alcohol-Involved Sex and Incapacitated Sexual Assault

In order to examine explanatory variables that account for racial/ethnic differences in alcohol-involved sex and incapacitated sexual assault, language is also an important factor to consider. Many API immigrants and even U.S.-born API identify a language other than English as their first language (U.S. Census Bureau, 2013). First language is frequently an indicator of ethnic identity (Kang, 2006) and enculturation/acculturation among many Asian groups (Suinn et al., 1992). In fact, various language variables are often examined as proxies for acculturation, or an individual's identification with cultural norms (Lopez-Class, Castro & Ramirez, 2011). As others have noted, first language may be particularly salient as it represents an indicator of the culture in which an individual was immersed during childhood

(Collier, Brice, & Oades-Sese, 2007). While cultural values and identification may shift over the lifespan (i.e., acculturation), first language likely represents an important marker of a person's earliest cultural environment (i.e., enculturation). In a study of the relations between heavy episodic drinking, race, and U.S. nativity (another proxy for enculturation), first generation Asian immigrants reported lower rates of heavy episodic drinking compared with Whites, whereas second generation immigrants did not significantly differ from Whites, and this was explained by language use (Cook et al., 2013). More germane to the purposes of this study, use of a language other than English is associated with lower alcohol use among API and other racial/ethnic groups in the U.S. (Epstein, Botvin, & Diaz, 2001). Taken together, markers of acculturation/enculturation, specifically language, may also be associated with incapacitated sexual assault, alcohol-involved sex, sex-related alcohol expectancies, and heavy episodic drinking among college women. Although there is evidence for racial/ethnic group differences in sexual assault among API and EU, the majority of studies do not consider within-group differences when examining API, thus, this study attempts to consider some heterogeneity within API by taking into account first language while also considering broader racial/ethnic group differences.

In addition to evidence that first language is related to heavy episodic drinking in Asian Americans (Cook et al., 2013), preliminary evidence suggest first language may also account for differences in sexual assault among API women (Gilmore et al., 2016). Specifically, a recent study found that among API women, differences by first language (English or non-English) in college sexual assault severity were mediated by heavy episodic drinking, such that native English-speaking API women were at a higher risk of college sexual assault due to more frequent heavy episodic drinking compared to API women who learned English as a foreign language (Gilmore et al., 2016). There is also evidence for differences in alcohol-involved sex based on acculturation. One study found associations between unique aspects of acculturation and problem drinking and risky sexual behavior (i.e., unprotected sex, intoxicated sex) among East and South Asian college students (Schwartz et al., 2011); however, the association between language and alcohol-involved sex in particular was not assessed. In another sample, alcohol-involved sex was more prevalent among API who were more assimilated to U.S. culture (Dominicus et al., 2005); however, these findings were published over a decade ago, and considering the rise in API international students at U.S. colleges (Cook & Córdova, 2006), and even the increase in alcohol use among API (Le, Goebert, & Wallen, 2009), these results may not be accurate, and further research is warranted. Considering the relationship between acculturation and heavy episodic drinking and sex, it is likely that language is similarly related.

Current Study

The goals of the current study were to (1) examine differences in both incapacitated sexual assault and alcohol-involved sex among college women based on ethnicity and first language; and (2) examine mediators of this association, including heavy episodic drinking, sexual assault history, and sex-related alcohol expectancies. We hypothesized that EU women would report more frequent incapacitated sexual assault and alcohol-involved sex compared to API women. Further, we hypothesized that EU women would more strongly endorse sex-related alcohol expectancies compared to API women, and that native English-

speaking API women (API) would endorse stronger expectancies compared to non-native English speaking API women (NNES-API). Further, we hypothesized that there would be indirect effects of heavy episodic drinking, sex-related alcohol expectancies, and previous sexual assault history on the relationship between ethnicity and first language and incapacitated sexual assault and alcohol-involved sex.

Method

Participants

Participants were 524 college women aged 18-22 ($M = 18.79$, $SD = 0.86$) recruited through the university's psychology subject pool website and given course credit for participation. Potential participants were excluded if they did not identify as female, were not fluent in English, and were under age 18.

Measures

Race/Ethnicity and first language—Self-report measures of race/ethnicity were based on multiple choice items. For the current study, those who identified as “White/Caucasian” were classified as EU and those who identified as “Asian” or “Native Hawaiian/Pacific Islander” were classified as API. We compared API to EU as EU was the largest racial/ethnic group represented in the sample. We combined those who identified as Asian and Native Hawaiian/Pacific Islander due to previous literature suggesting similarity in groups with respect to alcohol-related and sexual-related variables measured (see Gilmore et al., 2016). Participants also indicated whether English was their first language (0 = *English was first language, API group* or 1 = *English was not first language, NNES-API group*).

Heavy episodic drinking—One item asked “How often did you have 4 or more drinks containing any kind of alcohol within a 2-hour period in the past month?” (NIAAA, 2004), with response options including 0 (*not in the past month*), 1 (*once in past month*), 2 (*2-3 times/month*), 3 (*once a week*), 4 (*twice a week*), 5 (*3-4 times/week*), 6 (*5-6 times/week*), and 7 (*everyday*).

Alcohol-involved sex—One item assessed for the frequency with which individuals had consumed alcohol prior to or during sexual activity (as used previously in Bird, Gilmore, George, & Lewis, 2016). Response options ranged on a 5-point scale (0 = *never*, 1 = *about a quarter of the time*, 2 = *about half the time*, 3 = *about three quarters of the time*, and 4 = *always*).

Incapacitated sexual assault during college—Incapacitated sexual assault was assessed through items on the Sexual Experiences Survey (Koss et al., 2007). Specifically, if participants reported experiencing attempted or completed sexual assault by means of incapacitation (due to alcohol) during college, incapacitated sexual assault was coded as “present.”

Adolescent/adult sexual assault severity before college—The Sexual Experiences Survey (Koss et al., 2007) was revised for this study to allow participants to endorse coerced

sexual experiences after their 14th birthday, but before entering college. Behaviorally-specific questions assessed sexual assault experiences (sexual contact, attempted penetration, and completed penetration) by perpetration tactic (verbal coercion, incapacitation, threats of physical force, and physical force). Participants indicated the number of times that each perpetration tactic was used for each sexual assault experience (0, 1, 2, or 3 or more times). Sexual assault incidence and level of rape completion were determined using a 63-point scale (Davis et al., 2014) for each time point to determine “sexual assault severity.” The scoring procedure takes into account both frequency and severity of experiences by multiplying the *frequency* of experiences (0, 1, 2, or 3) by the *victimization experience* (1 = *sexual contact by verbal coercion*, 2 = *sexual contact by incapacitation*, 3 = *sexual contact by force*, 4 = *attempted or completed rape by verbal coercion*, 5 = *attempted or completed rape by incapacitation*, 6 = *attempted or completed rape by force*) and summing the total number of experiences (possible range 0-63, with 0 indicating no sexual assault history). This severity score has adequate convergent validity as indicated by being significantly correlated with relationship abuse, relationship violence, somatization, depression, anxiety, and post-traumatic stress disorder (Davis et al., 2014).

Sex-Related Alcohol Expectancies Questionnaire (SRAEQ)—The SRAEQ (Dermen & Cooper, 1994) is a 13-item scale that assesses three domains of sex-related expectations linked to drinking alcohol: sexual disinhibition (4 items, $\alpha = .89$), sexual enhancement (5 items, $\alpha = .92$), and sexual risk-taking (4 items, $\alpha = .92$). Responses range from 1 (*strongly disagree*) to 6 (*strongly agree*), with higher mean scores indicating stronger endorsement of expectancies.

Analytic Approach

Multiple models were constructed in order to test potential mediators of racial/ethnic and first language differences across frequency of alcohol-involved sex and experiences of incapacitated sexual assault during college. First, a baseline model was constructed with attempted or completed incapacitated sexual assault since college and alcohol-involved sexual sex as outcome variables (Figure 1). Race/ethnicity and English as a first language were examined as predictors. Age was also included as a control covariate, given prior results suggest it significantly predicts sexual assault in college (Gilmore et al., 2016). Race/ethnicity was dichotomously coded with EU as the referent group compared with API. English as a first language was coded as the referent group compared with having non-English as a first language. Since only 22 EU women identified as non-native English speakers, they were omitted from analyses; thus, the first language variable tested differences among API participants only (0 = *API*, 1 = *NNES-API*). Following this model, mediators were added according to the time frame in which they occurred. First, sexual assault severity prior to college was added as a pre-college mediator between race/ethnicity, language, and the two sexual outcomes (Figure 2). Finally, four additional mediators were added as in-college mediators of alcohol-involved sex and incapacitated sexual assault (Figure 3): heavy episodic drinking, sexual disinhibition drinking expectancies, sexual enhancement drinking expectancies, and sexual risk drinking expectancies. No variable was missing more than 10% of responses. All models were analyzed using path analyses with theta parameterization and probit regression in order to conduct mediation analyses with the

dichotomous outcome of incapacitated sexual assault during college. As the baseline model was fully saturated and the mediation models were not, model fit statistics are only presented for mediational models. The following recommendations by Hu and Bentler (1998) were used as assessments of adequate model fit: CFI = .95, RMSEA = .06. Missing data were estimated using multiple imputation with imputation iterations and weighted least squares estimation, which has been demonstrated to optimally reduce bias associated with missing data in similar models (Schafer & Olsen, 1998). As such, pooled parameter and model fit estimates from the 5 imputed datasets are presented. All other analytic assumptions were met.

Results

Preliminary Results

Across the sample, 46.57% identified as EU ($n = 244$) and 53.43% ($n = 280$) identified as API. Among API, 20.8% were native English speakers (API; $n = 109$) and 32.53% were non-native English speakers (NNES-API; $n = 171$). The majority of women were heterosexual ($n = 500$, 95.4%), first-year ($n = 335$, 63.9%), and not in a sorority ($n = 416$, 79.4%).

Across the sample, 48 women (9.2%) reported experiencing incapacitated sexual assault during college and 83 (16%) women reported any lifetime history of incapacitated sexual assault; significantly more EU women ($n = 56$) reported incapacitated sexual assault than API women ($n = 24$; $\chi^2 = 20.22$, $p < .001$). There were no differences in lifetimes rates of incapacitated sexual assault across NNES-API ($n = 13$) and API ($n = 11$; $\chi^2 = 0.55$, $p = .46$). Significant differences were seen for frequency of alcohol-involved sex across all three groups, with EU women engaging in alcohol-involved sex most frequently (EU vs. API: $t = 7.51$, $p < .001$; API vs. NNES-API: $t = 2.97$, $p < .01$). EU women reported more frequent heavy episodic drinking compared to API and API-NNES women ($t = 9.87$, $p < .001$). Native English-speaking API women reported stronger sexual disinhibition and sexual risk alcohol expectancies compared to NNES-API women ($t = 2.60$, $p = .01$ and $t = 2.25$, $p = .03$, respectively; see Table 1).

Baseline Model

In the baseline model, age predicted both frequency of alcohol-involved sex ($\beta = .10$, $p = .004$) and incapacitated sexual assault during college ($\beta = .15$, $p = .01$). API reported a lower frequency of alcohol-involved sex ($\beta = -.20$, $p = .001$) and incapacitated sexual assault during college ($\beta = -.12$, $p = .04$) relative to EU. NNES-API reported lower frequency of alcohol-involved sex ($\beta = -.15$, $p = .003$) and reported less incapacitated sexual assault during college ($\beta = -.35$, $p = .03$) compared with API (see Figure 1 and Table 2).

Mediation Model 1: Pre-College Sexual Assault Severity

In the first mediational model, pre-college sexual assault severity was added as a mediator and indicators of model fit provided mixed support ($\chi^2_{\text{mean}(1)} = 5.82$, $p = .02$; $\text{CFI}_{\text{mean}} = .97$; $\text{RMSEA}_{\text{mean}} = .10$). Pre-college sexual assault severity positively predicted both frequency of alcohol-involved sex ($\beta = .22$, $p < .01$) and incapacitated sexual assault during

college ($\beta = .24, p < .01$). Additionally, API reported lower severity of pre-college sexual assault ($\beta = -.17, p = .03$) relative to EU, but did not significantly differ from NNES-API ($\beta < .01, p = .96$). In examining indirect effects, pre-college sexual assault appeared to explain a significant portion of differences in alcohol-involved sex (*Coefficient* = $-.04, p = .01$) and incapacitated sexual assault (*Coefficient* = $-.04, p = .004$) across EU and API. No indirect effects involving language differences were significant (*p*-values $> .05$). The direct effects involving race/ethnicity and language on incapacitated sexual assault during college and alcohol-involved sex remained significant (*p*-values $< .05$). See Figure 2 and Table 3 for results.

Mediational Model 2: During College Drinking Behavior and Expectancies

In the full model with heavy episodic drinking and the three sex-related alcohol expectancies added as in-college mediators, the model evidenced good fit ($\chi^2_{\text{mean}(4)} = 9.72, p = .05$; $\text{CFI}_{\text{mean}} = .99$; $\text{RMSEA}_{\text{mean}} = .05$). Heavy episodic drinking ($\beta = .45, p < .01$), sexual disinhibition expectancies ($\beta = .24, p = .01$) and sexual enhancement expectancies ($\beta = .14, p < .01$) positively predicted alcohol-involved sex. Sexual risk expectancies negatively predicted alcohol-involved sex ($\beta = -.14, p = .03$). Heavy episodic drinking ($\beta = .26, p < .01$) and sexual disinhibition expectancies ($\beta = .41, p < .01$) positively predicted incapacitated sexual assault during college. Sexual risk and sexual enhancement expectancies were not significantly related to incapacitated sexual assault during college (*p*-values $> .05$). API reported less heavy episodic drinking ($\beta = -.25, p < .01$) and higher sexual risk expectancies ($\beta = .17, p = .01$) compared with EU. EU and API did not differ significantly across the other two sex-related alcohol expectancies (*p*-values $> .05$). NNES-API reported lower sexual risk expectancies ($\beta = -.16, p = .01$) and lower sexual disinhibition expectancies ($\beta = -.17, p = .01$) compared with API. NNES-API and API did not significantly differ in heavy episodic drinking or sexual enhancement expectancies (*p*-values $> .05$). In testing indirect paths, several were significant. Sexual assault severity before college and heavy episodic drinking accounted for a significant portion of the differences in alcohol-involved sex across API and EU (*p*-values $< .05$). Heavy episodic drinking accounted for a significant portion of the differences in alcohol-involved sex across API and EU (*Coefficient* = $-.11, p < .01$). Heavy episodic drinking also accounted for a significant portion of the differences in incapacitated sexual assault across the same two groups (*Coefficient* = $-.06, p = .01$). Sexual disinhibition expectancies accounted for a significant portion of the differences in alcohol-involved sex and in incapacitated sexual assault (*Coefficient* = $-.07, p = .04$) across API and NNES-API. No other indirect path was significant. The differences in alcohol-involved sex across ethnicity and language were no longer significant. The difference in incapacitated sexual assault during college between API and NNES-API remained significant ($\beta = -.28, p = .03$). The difference between API and EU in incapacitated sexual assault during college was no longer significant ($\beta = -.01, p = .89$). See Table 4 and Figure 3 for results from the full model.

Discussion

The current study examined differences in rates of incapacitated sexual assault and alcohol-involved sex across race/ethnicity and language. The study also examined how three factors

may explain these associations: sex-related alcohol expectancies, heavy episodic drinking, and previous sexual assault history. Overall, these results both replicate previous findings and add novel findings, suggesting similar patterns across both incapacitated sexual assault and alcohol-involved sex. Taken together, these findings highlight the important role of expectancies in risk for incapacitated sexual assault and alcohol-involved sex, in particular, how differences in expectancies partly explain differences in alcohol-involved sex across not only those of API and EU, but also among those of API who are native and non-native English speakers. These findings highlight the important role that language, ethnicity, and potentially acculturation plays in the risk process.

When examining race/ethnicity and risk for incapacitated sexual assault and alcohol-involved sex, both of these outcomes were associated with heavy episodic drinking, as expected. Compared to EU women, API women reported less frequent incapacitated sexual assault and less severe pre-college sexual assault histories. Differences in pre-college sexual assault severity explained racial/ethnic differences in current endorsement of incapacitated sexual assault, which is consistent with previous findings (Gilmore et al., 2016; Koo et al., 2015; Nguyen et al., 2010). API women also reported less frequent alcohol-involved sex compared to EU women, which is a novel finding. According to the mediational model, differences in incapacitated sexual assault and alcohol-involved sex were in part due to API women reporting lower rates of heavy episodic drinking.

Regarding alcohol and sex risk among API women across language, differences were found for incapacitated sexual assault but not heavy episodic drinking. Despite similar levels of pre-college sexual assault and heavy episodic drinking, NNES-API reported less frequent incapacitated sexual assault and alcohol-involved sex compared to API women. This suggests that API women who are native English speakers are more likely to engage in sex while intoxicated compared to API who are not native English speakers. Our results explain this disparity through differences in sex-related alcohol expectancies. Specifically, API women more strongly endorsed beliefs that alcohol makes one more sexually disinhibited. This difference in expectancies explained the disparity across language in rates of incapacitated sexual assault and alcohol-involved sex. Thus, it appears that compared to NNES-API, native English-speaking API women are more likely to engage in sex while intoxicated due to beliefs regarding the sexually disinhibiting effects of alcohol on sex. We surmise that this is likely related to acculturation and adaptation of U.S. college cultural norms, which we discuss below.

First Language and Acculturation

Our findings highlight the important role that language (and by proxy acculturation) may play in heavy episodic drinking, alcohol-involved sex, and incapacitated sexual assault. Expectancies are learned beliefs about a behavior that are acquired through environmental influence and past experience. Although we cannot determine the development and acquisition of individuals' expectancies in the sample, it is possible that differences in endorsement of expectancies between API and NNES-API could be linked to acculturation/enculturation. As discussed in the introduction, language is an important proxy for enculturation/acculturation. Thus, differences in expectancies could be linked to two

important individual differences: (1) cultural identification and (2) acculturation and assimilation to dominant U.S. college culture. The process of acculturation includes both adapting to behaviors and practices of another culture (i.e., social norms), as well as adapting values and beliefs of another culture (Schwartz, Unger, Zamboanga, & Szapocznik, 2010). Therefore, stronger endorsement of sexual disinhibition expectancies among API compared to NNES-API could reflect more acculturation and adaptation of the social norms of U.S. college culture. This identification with U.S. college culture could partly explain why API may be more likely than NNES-API to have experiences that involve both alcohol use and sex, due to U.S. college culture social norms surrounding drinking and sex.

Our findings also relate to the ‘immigrant paradox.’ This term refers to the empirical observation that those who are more acculturated engage in more health hazardous behaviors compared to their less-aculturated counterparts (Alegría et al., 2008). There are two predominant explanations for the immigrant paradox: (1) the stress and challenge of adapting to a new culture increases risk-taking as a coping strategy, and (2) protective factors from one’s heritage culture weaken with acculturation and thus risk-taking increases (Allen et al., 2008). Previous findings among Asian college students appear to support the second explanation, since sexual risk-taking and hazardous alcohol use are highest among Asian college students whose identification with their heritage culture is low and identification with U.S. college culture is high (Chae et al., 2008). In our study, NNES-API women had higher sexual disinhibition expectancies than EU women. This is not consistent with the idea that expectancy endorsement is directly linked to acculturation; however, it may be the case that sexual disinhibition is considered more or less desirable depending on culture. If some API cultures consider sexual disinhibition to be undesirable or unappealing, then this may account for stronger sexual disinhibition beliefs coupled with lower rates of alcohol-involved sex among NNES-API.

As an alternative explanation, differences in sex-related alcohol expectancies and drinking behavior may not reflect cultural differences per se, but they may be a consequence of differing degrees of social connectedness that occur because of cultural differences. That is, API students who do not identify as strongly with U.S. college culture may not have as many opportunities to socialize with others more assimilated to U.S. college culture. In turn, they would be exposed less to social settings with heavy episodic drinking where individuals may be targeted for sexual assault.

Prevention Implications

These results suggest that it may be effective to target sex-related alcohol expectancies, as well as more global alcohol expectancies among API and potentially other international students in order to prevent incapacitated sexual assault and other negative outcomes associated with alcohol-involved sex. Alcohol risk reduction programs and alcohol misuse interventions are common on college campuses, and many target alcohol expectancies and norms (Dimeff, Baer, Kivlahan, & Marlatt, 1999). There is evidence that expectancy challenge techniques are not only effective in reducing problem drinking (Scott-Sheldon et al., 2012), but also in influencing sexual victimization risk. In one motivational interviewing and feedback-based intervention among college women, decreases in sexual victimization

were not directly linked to changes in alcohol use, but rather likely due to beliefs and expectancies regarding drinking (Clinton-Sherrod et al., 2011). Further research is needed to examine the utility of interventions targeting API and potentially other international students, such as culturally modifying existing web-based sexual assault and alcohol interventions (e.g., Gilmore, Lewis, & George, 2015) to target different cultural groups.

Results have several implications with regard to perpetration of sexual assault. Foremost, our results highlight two important realities for college women: (1) sexual assault is experienced both before and during college by a large portion of women across race/ethnicity, and (2) incapacitation increases risk for sexual assault regardless of race/ethnicity. These findings must be interpreted in light of the fact that perpetrators target individuals who are incapacitated (Abbey et al., 2014). Given documented sociocultural influences on sexual assault perpetration (Franklin, Bouffard, & Pratt, 2012), there may be elevated risk of sexual assault for native English-speaking API and EU college women, assuming they may have more opportunity to engage in typical U.S. college social settings where these influences are present. Moreover, given our documented association between sex-related alcohol expectancies and incapacitated sexual assault, it is important to underscore the relationship between sex-related alcohol expectancies and assault perpetration (Abbey et al., 2014). Although sex-related alcohol expectancies do not cause one to be assaulted, perpetrators may share these expectancies and/or target those with stronger expectancies. It is likely that risk for both sexual assault victimization and perpetration is increased by underlying cultural myths about alcohol's enhancing effects on sex. Further research is needed to understand how perpetrators may target individuals based on race/ethnicity, language, or acculturation, as well as the role of alcohol in targeting individuals.

Limitations

Despite the novelty of these findings, there are some limitations. For one, utilizing a sample of all women limits our understanding of differences in incapacitated sexual assault and alcohol-involved sex across ethnicity and first language in men, including differences in rape myths and attitudes (Bhanot & Senn, 2007). Additionally, although the rates of incapacitated sexual assault in the current sample were lower compared to other studies, findings were similar to more recent reports of incapacitated sexual assault specifically among API and EU college students (Nguyen et al., 2010). Given that sexual assault was determined via self-report, it is important to note that not all sexual assault victimization experiences are acknowledged in self-report forms (Fisher et al., 2003). Moreover, there are differences across ethnicity in reporting of sexual assault (Koo et al., 2015). The low overall endorsement rate of incapacitated sexual assault has implications for the reliability of study findings. Thus, findings regarding incapacitated sexual assault risk in particular should be interpreted with caution.

Another limitation is that the current study did not measure acculturation specifically, but rather considered first language as a proxy for acculturation based on previous use of language as a measure of acculturation (Kang, 2006); however, this measure neglects the multiple domains of acculturation that may influence the risk process, including cultural and ethnic identity and cultural values (Lopez-Class et al., 2011; Schwartz et al., 2011). Utilizing

a multidimensional acculturation measure would allow for a better understanding of which facets of acculturation influence incapacitated sexual assault and alcohol-involved sex, and which domains are more closely linked to the acquisition of sex-related alcohol and more global alcohol expectancies. Thus, further efforts are needed to synthesize existing operationalizations of acculturation to create a gold standard measure, in part in order to better understand the immigrant paradox (Allen et al., 2008; Schwartz et al., 2010). This study was also cross-sectional in nature, and therefore causation cannot be determined. Additionally, similar to previous studies, this research was conducted with a U.S.-based sample, and research with API samples outside of the U.S. is needed to fully examine cultural differences in alcohol expectancies and alcohol-involved sex and sexual assault. Finally, the study considered those who identify as EU and API broadly, and thus do not take into account cultural identity, as there are likely group differences (Schwartz et al., 2011).

Conclusion

In conclusion, EU women reported higher frequency of heavy episodic drinking, alcohol-involved sex, and incapacitated sexual assault compared to API and NNES-API. Additionally, API reported more frequent alcohol-involved sex and incapacitated sexual assault compared to NNES-API, in part due to API's stronger endorsement of sexual disinhibition-related alcohol expectancies. Findings highlight the important role of expectancies in acculturation and influence on actual alcohol-involved sex and sexual assault.

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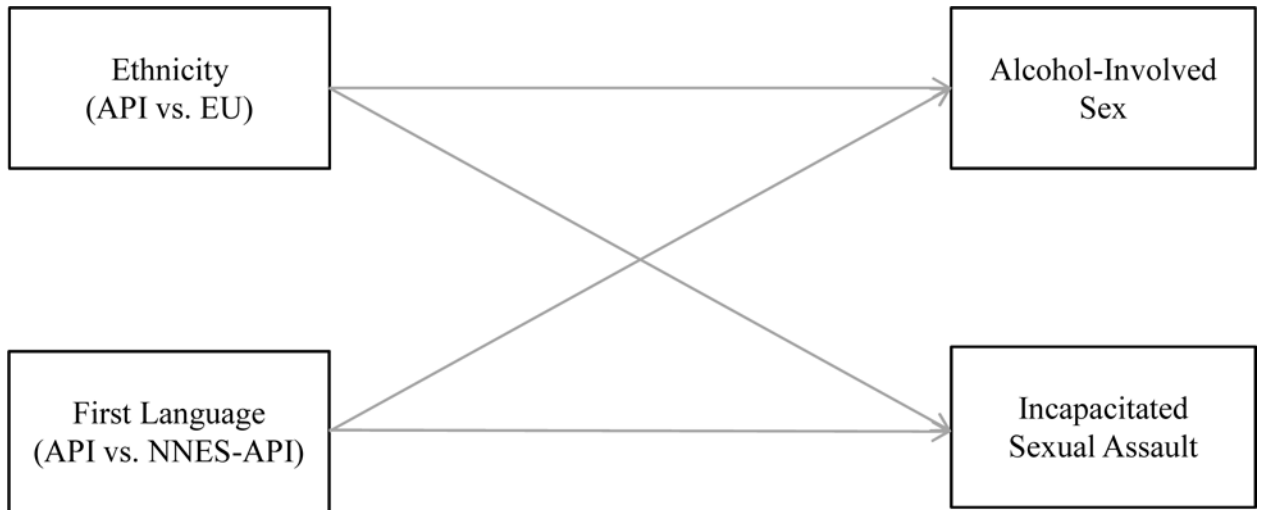


Figure 1. Baseline model with language and ethnicity predicting intoxicated consensual sex and incapacitated sexual assault during college. All shown paths are significant with *p-values* < .05. Gray lines represented negative relations between variables.

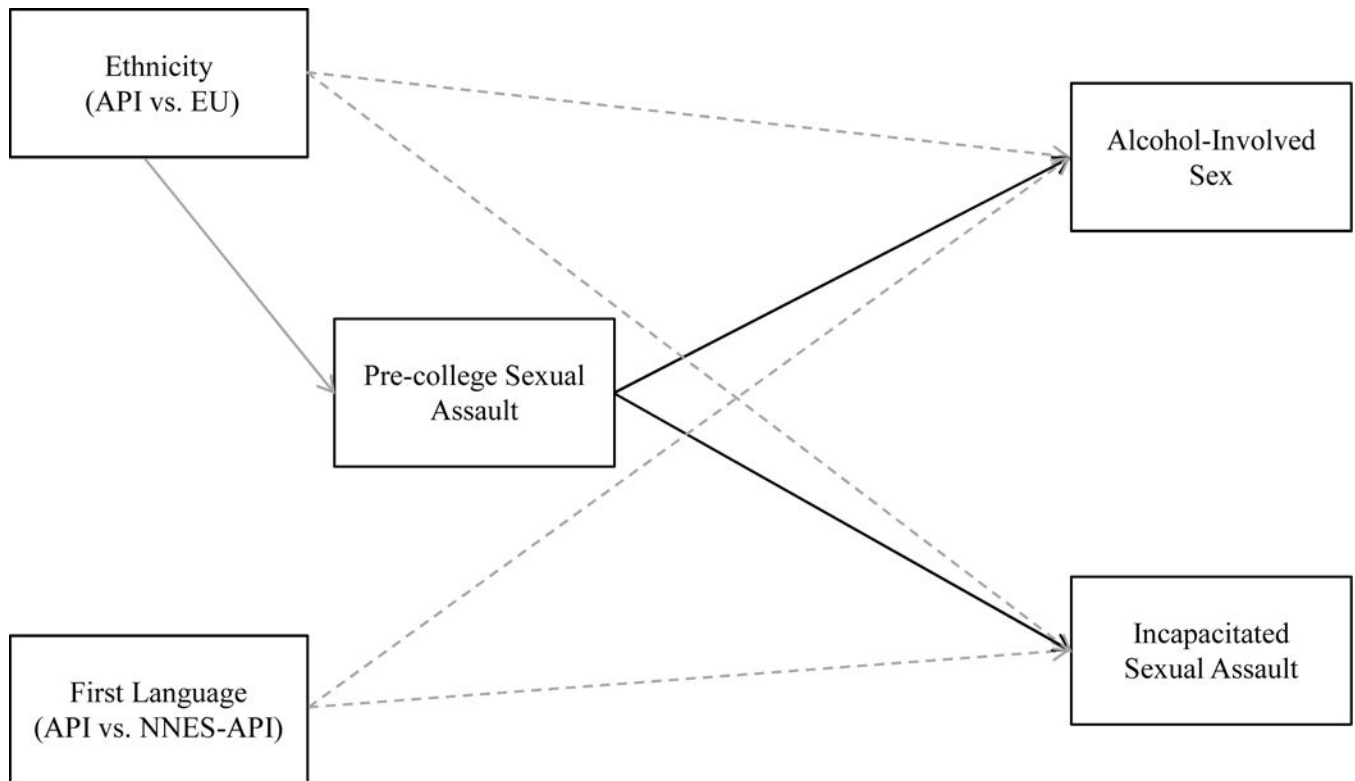


Figure 2. Mediation path with pre-college sexual assault severity as a mediator. All shown paths are significant with p -values $< .05$. Age is included as a covariate, but not shown for display purposes. Solid lines represent significant mediational paths and dashed lines represent significant paths that are not directly involved in the mediational path. Gray lines represented negative relations and black lines represent positive relations. $\chi^2_{\text{mean}}(1) = 5.82$, $p = .016$, $\text{CFI}_{\text{mean}} = .97$, $\text{RMSEA}_{\text{mean}} = .10$.

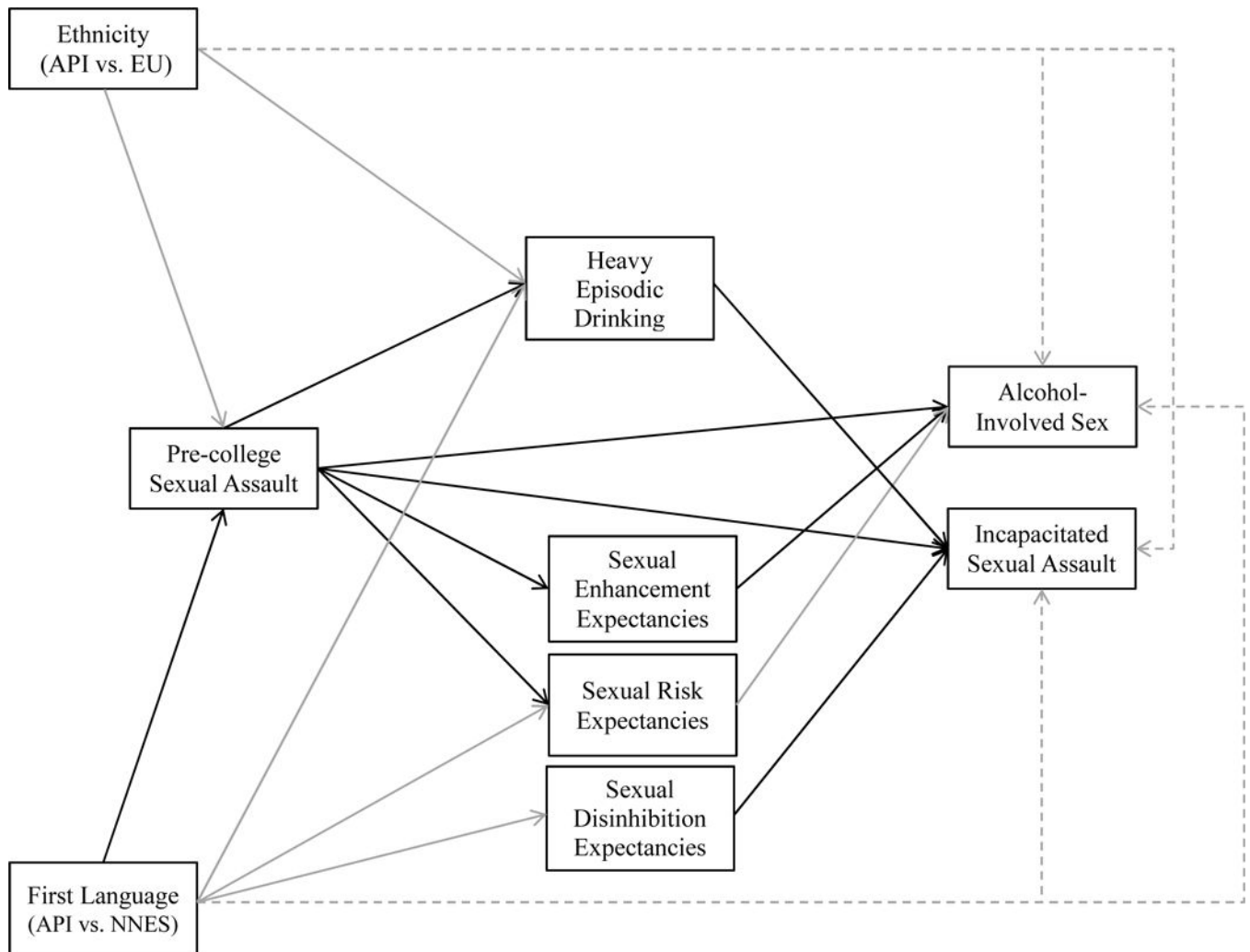


Figure 3.

The full mediational model with recent heavy episodic drinking and sex-related alcohol expectancies as in-college mediators. All shown paths are significant with p -values $< .05$. Age is included as a covariate but not shown for display purposes. Solid lines represent significant mediational paths and dashed lines represent significant paths that are not directly involved in the mediational path.

Table 1

Demographics and Study Variables

	European, native English (EU) n = 244	Asian/Pacific Islander, native English (API) n = 109	Asian/Pacific Islander, non- native English (NNES-API) n = 171
Age	18.65 (0.72)	18.82 (0.95)	18.98 (0.95)
Sexual orientation			
Bisexual	7 (2.9)	1 (10)	9 (5.3)
Lesbian	2 (1.0)	–	1 (10)
Questioning	2 (1.0)	1 (10)	3 (1.75)
Heterosexual	233 (95.5)	107 (98.2)	158 (92.4)
Relationship status			
Single	105 (43.03)	55 (50.46)	61 (34.36)
Dating (single)	55 (22.54)	23 (2.11)	49 (28.7)
In a relationship	83 (34.02)	30 (27.53)	61 (34.46)
Married	1 (0.4)	–	–
Pre-college sexual assault severity	5.21 (10.19) ^a	2.33 (5.84) ^b	2.50 (7.49) ^b
Incapacitated sexual assault	36 (14.34) ^a	9 (8.26) ^b	3 (1.75) ^c
Alcohol-involved sex	0.68 (0.95) ^a	0.30 (0.67) ^b	0.18 (0.51) ^c
Heavy episodic drinking	1.50 (1.67) ^a	0.78 (1.36) ^b	0.51 (1.12) ^b
Sex-related alcohol expectancies			
Sexual disinhibition	2.59 (1.23)	2.59 (1.32) ^b	2.62 (1.25)
Sexual risk	2.27 (1.45)	2.61 (1.58)	2.36 (1.44)
Sexual enhancement	2.59 (1.43)	2.67 (1.49)	2.39 (1.35)

Note. Values are M (SD) or n (%), Superscripts a,b,c denote values that are unique from other groups (e.g., significant differences in sexual disinhibition expectancies across all groups).

Table 2

Baseline Model showing Direct Effects on Incapacitated Sexual Assault and Alcohol-Involved Sex

Variable/Path	Alcohol-Involved Sex		Incapacitated Sexual Assault	
	β	SE	β	SE
Age	0.10**	0.15	0.15**	0.14
Race/Ethnicity	-0.20**	0.22	-0.12**	0.24
First language	-0.15**	0.55	-0.35*	0.37

Note.

*
 $p < .05$.**
 $p < .01$.

Race/Ethnicity (0 = EU, 1 = API). First language (0 = API, 1 = NNES-API).

Table 3

Direct Effects in Final Model with Heavy Episodic Drinking, Sex-Related Alcohol Expectancies, and Pre-College Sexual Assault Severity as Mediators on Alcohol-Involved Sex and Incapacitated Sexual Assault

Variable/Path	β	SE
<i>Predictors to Outcome</i>		
Ethnicity → Alcohol-involved sex	N/S	0.22
First Language → Alcohol-involved sex	N/S	0.55
Ethnicity → Incapacitated SA	-0.01	0.24
First Language → Incapacitated SA	-0.28*	0.37
<i>Predictors to Mediator</i>		
Ethnicity → HED	-0.25**	0.18
Ethnicity → Sexual Disinhibition Exps	0.07	0.16
Ethnicity → Sexual Enhancement Exps	0.01	0.16
Ethnicity → Sexual Risk Exps	0.17**	0.18
First language → HED	-0.13	0.22
First language → Sexual Disinhibition Exps	-0.17**	0.19
First language → Sexual Enhancement Exps	0.02	0.18
First language → Sexual Risk Exps	-0.16**	0.01
<i>Pre-college to In-college Mediators</i>		
Pre-college SA severity → HED	0.12**	0.01
Pre-college SA severity → Sexual Disinhibition Exps	0.13**	0.01
Pre-college SA severity → Sexual Enhancement Exps	0.20**	0.01
Pre-college SA severity → Sexual Risk Exps	0.19**	0.01
<i>Mediators to Outcome</i>		
HED → Alcohol-involved sex	0.45**	0.05
Sexual Disinhibition exps → Alcohol-involved sex	0.24**	0.14
Sexual Enhancement exps → Alcohol-involved sex	0.14**	0.08
Sexual Risk exps → Alcohol-involved sex	-0.14*	0.14
HED → Incapacitated SA	0.26**	0.06
Sexual Disinhibition exps → Incapacitated SA	0.41**	0.11
Sexual Enhancement exps → Incapacitated SA	N/S	0.08
Sexual Risk exps → Incapacitated SA	N/S	0.12

Note. Race/Ethnicity (0 = EU, 1 = API). First language (0 = API, 1 = NNES-API). HED = Heavy Episodic Drinking.

* $p < .05$.

** $p < .01$.

Model fit: $\chi^2_{\text{mean}}(4) = 9.72$, $p = .045$, $CFI_{\text{mean}} = .99$ and $RMSEA_{\text{mean}} = .05$.

Table 4

Indirect Effects of Pre-College Sexual Assault Severity, Heavy Episodic Drinking, and Sex-Related Alcohol Expectancies in Final Model predicting Alcohol-Involved Sex and Sexual Assault

	<u>Alcohol-Involved Sex</u>		<u>Incapacitated Sexual Assault</u>	
	β	SE	β	SE
<i>Mediator: Pre-College SA severity</i>				
First Language	<0.01	0.06	<0.01	0.03
Ethnicity	-0.12 *	0.06	-0.02	0.04
<i>Mediator: Heavy Episodic Drinking</i>				
First Language	-0.06	0.03	-0.03	0.06
Ethnicity	-0.11 **	0.15	-0.06 **	0.06
<i>Mediator: Sexual Disinhibition Exps</i>				
First Language	-0.04 *	0.11	-0.07 *	0.09
Ethnicity	0.02	0.08	0.03	0.07
<i>Mediator: Sexual Enhancement Exps</i>				
First Language	<0.01	0.05	0.01	0.02
Ethnicity	<0.01	0.05	<0.01	0.01
<i>Mediator: Sexual Risk Exps</i>				
First Language	0.02	0.08	0.08	0.06
Ethnicity	-0.02	0.08	-0.03	0.06

Note. Race/Ethnicity (0 = EU, 1 = API). First language (0 = API, 1 = NNES-API). HED = Heavy Episodic Drinking.

* $p < .05$.

** $p < .01$.

Model Fit: $\chi^2_{\text{mean}}(4) = 9.72$, $p = .045$, $\text{CFI}_{\text{mean}} = .99$ and $\text{RMSEA}_{\text{mean}} = .05$.