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Negative life events and incident alcohol use disorders among ethnic minorities

Karen B. Schmaling, Ph.D.[a], **Arthur W. Blume, Ph.D.**[a], **Monica C. Skewes, Ph.D.**[b]

Arthur W. Blume: art.blume@wsu.edu; Monica C. Skewes: monica.skewes@montana.edu

[a]Department of Psychology, Washington State University, 14204 NE Salmon Creek Avenue, Vancouver, WA 98686 USA

[b]Department of Psychology, Montana State University, Bozeman, MT 59717-3440 USA

Abstract

The association of negative life events (NLEs) to incident alcohol use disorders (AUDs) was examined among Blacks, Hispanics, and Whites in the second wave of the National Comorbidity Survey (NCS) among 3,679 participants without AUDs at the first wave. The number of past-year NLEs at NCS-2 was higher for Black than White participants, but the rates of incident AUDs did not differ by racial/ethnic group (14.2% among all participants). Past-year NLEs were associated with increased odds of incident AUDs for Whites and Hispanics but not Blacks. The implications of racial/ethnic differences in life events and AUDs are discussed.

Keywords

alcohol use disorders; ethnicity; incidence; life events

Diagnosis and Epidemiology of Alcohol Use Disorders (AUDS)

The diagnostic criteria for alcohol-related disorders have changed with the editions of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) (American Psychiatric Association [APA], 1980, 1994, 2013). Most recently, the DSM-5 (APA, 2013) contains one diagnosis, alcohol use disorder (AUD), integrating the diagnoses of alcohol abuse and dependence found in DSM-III-R (APA, 1980) and DSM-IV (APA, 1994). DSM-5 AUD requires two of 11 criteria; DSM-IV required one of four criteria for alcohol abuse, and three of seven criteria for alcohol dependence – all diagnoses required the symptoms to be present during the same year-long period (APA, 2013, 1994).

Several stratified, population-based epidemiology studies of AUDs provide estimates of the prevalence of these disorders in the US population. In the original National Comorbidity Survey (NCS), the 12-month and lifetime prevalence of DSM-III-R alcohol abuse (without dependence) was 2.5% and 9.4%, respectively; the 12-month and lifetime prevalence of alcohol dependence was 7.2% and 14.1%, respectively, with rates in Blacks being greater than Whites but not Hispanics, and Hispanics and Whites not differing from one another

corresponding author: karen.schmaling@wsu.edu.

(Kessler et al., 1994). In the National Comorbidity Survey Replication (NCS-R), the 12-month prevalence of DSM-IV alcohol abuse and dependence were 3.1% and 1.3%, respectively (Kessler et al., 2005). Among those who drank alcohol, Blacks had lower odds of alcohol abuse than Whites; no ethnic differences were found for alcohol dependence or between Hispanics and Whites (Kalaydjian et al., 2009). In the National Epidemiologic Survey of Alcohol and Related Conditions (NESARC), the 12-month and lifetime prevalence of AUDs was 8.5% and 30.3%, respectively, with rates in Whites being greater than Blacks or Hispanics, who did not differ from one another (Hasin & Grant, 2004; Hasin & Grant, 2015). Although studies vary in terms of the patterns of AUDs by ethnic subpopulation, overall Whites have greater rates than Blacks or Hispanics.

In terms of incidence of AUDs, large population-based studies have reported the one-year incidence of AUDs as 1.65% (Grant et al., 2009) and 1.79% (Eaton et al., 1989); and of alcohol dependence specifically as 0.46% (Crum et al., 2005). In the NESARC, over a three-year period, 11.67% of the sample newly met criteria for AUDs (Barry et al., 2013); another study found an incidence rate of 15.8% for AUDs over ten years (Asselmann et al., 2016). Few studies have reported differences in AUD incidence by ethnic group, but Blacks had lower one-year incidence rates than Whites, and Hispanics did not differ from Whites (Grant et al., 2009), and lifetime AUDs were more prevalent among Whites, followed by Hispanics, then Blacks among young adult participants (Wagner et al., 2002). Relatedly, in a large sample of adolescents, age of AUD onset was younger for European Americans than African Americans (17.1 versus 18.3 years, respectively) and more European Americans met criteria for AUD than African Americans (38.2% versus 26.0%, respectively) (Sartor et al., 2016).

Across the world, estimates of the proportion of years lost due to premature mortality and disability attributable to alcohol has ranged from 3.9-5.1% in the period from 2000 to 2013, which are higher for men than women (men: 5.4-7.6%; women: 1.3-2.3%) (Rehm & Imtiaz, 2016). For the United States in 2010, alcohol was the 7th leading risk factor for years lost to disability, and the 9th leading risk factor for death (US Burden of Disease Collaborators, 2013). Years lost and mortality due to alcohol consumption was higher for Blacks than Whites (e.g., 40 and 29 deaths per 100,000 people for Blacks and Whites, respectively, Shield et al., 2013).

Life Events and AUDs

Keyes et al. (2011) noted that “surprisingly few large-scale epidemiologic studies have examined the association of interpersonal, occupational, financial, and legal stressful life events with alcohol use and disorder” (p. 8). The hypothetical mechanisms through which life events are associated with AUDs may include tension-reduction, i.e., alcohol use is negatively reinforced by reducing distress associated with life events (Buchmann et al., 2010), and cumulative adversity, i.e., rising stress increases the risk of AUDs (Lloyd & Turner, 2008).

Studies of the association of NLEs and AUD prevalence are consistently positive. The odds of AUDs increased significantly with increasing quartiles of life events in the previous year; this effect was stronger for women than men (Boden et al., 2014). Keyes and colleagues

(2012) reported that among women in the NESARC sample, the prevalence of AUDs increased in a linear fashion with the addition of each past-year stressor: for example, those with no stressors had a 1.8% prevalence of AUDs, whereas those reporting ten or more stressors had a 40.8% prevalence of AUDs. For men, there was a similar linear increase in AUDs from zero (6.1% AUD prevalence) to six (35% AUD prevalence) stressors, but additional stressors were not clearly associated with further increases in the prevalence of AUDs. A small sample of 23 patients with alcohol dependence reported more severe life events in the year before AUD onset than did participants from the community (Gorman & Peters, 1990). NLEs were associated with past-year AUD in both men and women (ORs = 1.32, 1.23, respectively) among participants aged 60 years or more in the NESARC (Sacco et al., 2014).

Few studies have examined negative life events and incident AUD. The number of negative life events in the past year was a significant predictor of incident abuse (HR = 1.30, p = .006), but was a marginally predictor of incident dependence (HR = 1.20, p = .06) (Boschloo et al., 2013). But in a large cohort of young adults aged 14-24, Asselmann and colleagues (2016) found no association between the number of LEs in the five years prior to the index assessment and incident AUDs ten years later. These studies -- in which the age differences in the cohorts may have contributed to the disparate results -- were conducted in Western Europe and may have been ethnically homogenous, although they did not report the ethnic constitution of their cohorts.

Looking at specific NLEs, among NESARC participants who consumed any alcohol, McBride and colleagues (2009) reported that social NLEs (e.g., divorce) were associated with higher likelihood of alcohol dependence. A number of studies have considered the effects of job loss. A longitudinal study of over 1,000 young New Zealanders found that the duration of unemployment was associated with higher likelihoods of alcohol abuse or dependence (OR = 1.18) (Fergusson et al., 2014). Similarly, among 677 young Americans, the duration of unemployment was associated with higher levels of AUDs (Lee et al., 2017).

Life Events, AUDs, and Ethnicity

Few studies have examined the association between NLEs – total NLEs or specific NLEs -- and AUDs by ethnicity. NLEs were more numerous among Black as compared to Hispanic and White participants, and overall, NLEs were associated with the prevalence of alcohol dependence but not abuse (Lloyd & Turner, 2008). Two studies examined ethnic group differences in the 2010 National Alcohol Survey (Jones-Webb, Karriker-Jaffe, Zemore, & Mulia, 2016; Zemore, Mulia, Jones-Webb, Liu, & Schmidt, 2013). In the first study, job loss was significantly associated with AUD for Whites and Blacks, with the association being much stronger for Blacks than Whites (Jones-Webb et al., 2016). In the second study, severe economic losses (e.g., loss of job and housing) were more likely to be associated with alcohol dependence (OR = 6.08) among Blacks than Whites (Zemore et al., 2013). Neither job loss per se nor broader economic losses were associated with alcohol consumption among Hispanic participants. Given the dearth of studies examining the association of NLEs and AUDs noted by Keyes et al. (2011), nuanced analyses of specific NLEs within ethnic groups are especially rare. Taken together, the studies reviewed above suggest that that

greater numbers of life events are associated with AUDs, that AUDs are more prevalent among Whites than other ethnic groups, and that cross-sectionally among those with AUDs, certain life events are more associated with AUDs among Blacks than Whites. These potentially contradictory associations echo previous observations that while Blacks have lower rates of AUD than Whites, Blacks with AUDs face more stresses and worse outcomes than Whites: they are less likely to be employed or married, and more likely to have poor physical health (Brower & Carey, 2003).

Present Study

There do not appear to have been previous studies that examined the associations of numbers of life events, or of specific life events, with the onset of AUDs in specific ethnic groups. The investigation of AUD onset has potential methodological advantages and clinical utility: a focus on incidence avoids the potentially confounding reciprocity of NLEs preceding AUDs, and AUDs increasing the likelihood of consequent NLEs, as well as may identify potentially modifiable variables, e.g., life events attributable to participants' behavior. The purpose of this study was to examine the association of incident AUDs given a history of NLEs using the National Comorbidity Survey (NCS). Based on the results in the literature, it was predicted that more NLEs would be associated with higher odds of developing subsequent AUDs among Black and White but not Hispanic participants, after controlling for sociodemographic variables.

Methods

Sample Recruitment and Procedure

The NCS-1 sample involved 8098 participants aged 15-54 who comprised a stratified, probability sample of the noninstitutionalized US population (Kessler, 2015). As described in Kessler (2005), after informed consent was obtained (or parental consent and participant assent for those aged 15-17), subjects completed a structured interview that included questions about demographic characteristics, life events, and health and mental health symptoms. The first wave of NCS-1 data were collected from 1990-1992 (Kessler, 2008); respondents were re-interviewed 10 years later in 2001-2002 for NCS-2. The NCS-2 traced 5463 of the NCS-1 respondents: 166 were deceased, and 5001 were subsequently interviewed (Kessler, 2015). The de-identified NCS data were publicly available and as such did not involve human participants or human subjects review.

Variables

Case weight.—Cases were weighted to correct the sample for compositional biases (under- or over-representation in the sample compared to the population): the distribution of participants across demographic groups of the NCS was compared with the distribution in the National Health Interview Survey (NHIS) to determine the case weights for participants (Little et al., 1997).

Sociodemographic variables.—Respondents' age, gender, race/ethnicity (categories of White, Black, Hispanic, and other), and years of education at NCS-1 were retained for use in

analysis. Age and years of education were expressed as continuous variables; gender was coded as male = 1 and female = 0. Several race/ethnicity groups were collapsed together under an "other" category, making meaningful examinations of Asians, Pacific Islanders, American Indians, and Alaska Natives impossible.

Life events.—The NCS-1 and -2 interviews queried the occurrence of 11 life events in the prior 12 months. The events in the NCS-1 interview were: close relationship broke off; separation from loved one; robbed; driver's license suspended; sued someone; was sued; serious trouble with the police/law; significant conflicts with others; death(s) of close people/family; life crises among close people/family; and other major stressful life event(s). The events in the NCS-2 interview were: was robbed; mugged; driver's license suspended; was sued; trouble with the police/law; expected and important things didn't work out; and up to five other major life crises ideographically identified by the participants. Across the sample, NCS-1 and NCS-2 events were weakly correlated ($r = 0.21$, $p < .001$). Both total scores of NLEs and presence/absence of individual NCS-2 NLEs were used in analyses.

Evaluation of AUDs.—The NCS utilized a modified version of the Composite International Diagnostic Interview (CIDI) (Kessler & Üstün 2004), a structured psychiatric diagnostic interview, administered by trained interviewers (Kessler et al., 1994). Diagnoses resulting from the pattern of CIDI responses were evaluated according to criteria of the DSM-III-R (APA, 1980) and DSM-IV (APA, 1994), for the NCS-1 and NCS-2 interviews, respectively. For the purposes of this study, AUD diagnoses were based on the presence of either alcohol abuse or dependence. It should be noted that the integration of abuse and dependence diagnoses in this study does not completely align with the DSM-5 criteria for AUD (APA, 2013): the DSM-IV criterion of recurrent substance-related legal problems was excluded in the DSM-5, and the DSM-5 criterion of craving was not included in DSM-IV.

Data analysis

Variables from NCS-1 and NCS-2 were merged by the unique participant code. All analyses were performed by weighting the cases according to the NCS-2 case weighting variable described above.

Descriptive statistics were calculated to describe the sociodemographic characteristics of the total sample, and the prevalence of life events and of AUDs. Logistic regression analyses were calculated – for the entire sample and separately for White, Black, and Hispanic subpopulations -- to predict incident AUDs at NCS-2 by first entering sociodemographic variables in a block (age, gender, years of education), followed by total NLEs at NCS-1 and at NCS-2; a second set of logistic regression analyses were performed using the individual NLEs from NCS-2 as predictors of incident AUDs.

Results

Descriptive statistics

A total of 5001 participants completed both NCS-1 and NCS-2 evaluations. First, participants whose race/ethnicity was classified as Other were deleted from the sample

because the heterogeneity in this subsample would yield uninterpretable results. Next, the sample was limited to participants who had not met criteria for a lifetime diagnosis of AUD at NCS-1. The final sample of 3679 participants were 55.3% female, averaged 33.35 years of age (*SD* = 11.05, range = 15-58), and had 12.79 years of formal education (*SD* = 2.53, range = 0-17). The majority of respondents were White (75.8%), followed by smaller proportions of participants of Black and Hispanic race/ethnicity (14.0% and 10.2%, respectively). As shown in Table 1, there were significant differences among the groups by age: Whites were significantly older than both other groups, and Blacks were older than Hispanics; by years of education: Whites had significantly more education than both other groups, as Blacks also did compared with Hispanics; and by gender, which was attributable to a greater proportion of Black women as compared to Hispanic women.

Life events

The number of past-year NLEs was compared between racial/ethnic groups (see Table 1). At NCS-1, this comparison was not significant, whereas significant group differences were found at NCS-2, which was attributable to Black participants reporting significantly more NLEs than White participants. Hispanic participants did not differ from any group in the number of NLEs.

Incident AUDs and association with total past-year NLEs across and within groups

At NCS-2, 14.22% (n = 523) participants who did not meet criteria for AUD at NCS-1 had developed incident AUD. The proportions of those who had developed incident AUDs did not differ by racial/ethnic group ($\chi^2(1) = 2.18$, $p > .05$): 14.46% of Whites, 12.19% of Blacks, and 15.2% of Hispanics developed AUDs. Men were more likely to have incident AUD diagnoses than women (21.19% versus 8.59%, respectively, $\chi^2(1) = 118.27$, $p < .001$). In addition, those with incident AUDs were younger (27.94 versus 34.25 years) and had fewer years of education (12.12 versus 12.90 years) than those who did not develop an AUD between assessments ($t(733.07) = 12.93$, $p < .001$ and $t(722.61) = 6.81$, $p < .001$).

The results of the logistic regression analyses using total past-year life events as a predictor of incident AUDs, following the inclusion of sociodemographic variables in the equation (age, gender, and years of education), are shown in Table 2. These analyses were conducted for all participants, and separately by racial/ethnic subgroup, using remote life events from NCS-1 as well as recent life events from NCS-2. Younger age was associated with greater likelihood of incident AUD for the overall sample, Whites, and Hispanics. Male gender was associated with significantly greater odds of incident AUDs in all analyses. Fewer years of education was associated with incident AUDs for the total sample, and for the White subsample only. Remote NLEs were not associated with incident AUDs. More past-year NLEs were associated with greater incident AUDs for the overall sample, Whites, and Hispanics, but not Black participants.

Association of specific NLEs and incident AUDs across and within groups

The rates of specific past-year NLEs are shown in Table 3, as well as comparisons by group. Most events occurred infrequently, with the exception of an ‘important, expected thing that didn’t work out,’ which was more frequent among Blacks and Hispanics than Whites. Other

group differences were in being assaulted, being most common among Whites, and having suspended driver's licenses, being most common among Blacks.

The results of the logistic regression analysis of specific past-year NLEs as predictors of incident AUDs, following sociodemographic variables, are shown in Table 4. Only significant disappointments ('important expected thing that didn't work out') were associated with greater odds of incident AUDs for the full sample, Whites, and Hispanics.

As shown in Table 4, three events occurred infrequently among Hispanics. Fisher's exact tests were used to examine incident AUDs by the occurrence of these three events. Being assaulted and serious trouble with the police were not related to incident AUDs ($p = 0.39$ and $p = 0.28$, respectively), but suspended driver's licenses were more likely among those with incident AUDs ($p = 0.01$; 5.3% versus 0.3% of those with and without incident AUDs, respectively, had their driver's licenses suspended).

Discussion

Present results in the context of previous studies

This study found that the rate of incident AUDs was 14.22% at the 10-year follow-up, which aligns well with previous studies involving three and 10-year follow-ups (11.67% and 15.8%, in Barry et al., 2013, and Asselmann et al., 2016, respectively). Black participants' lower incidence rates did not achieve statistical significance compared to White or Hispanic participants as was found previously for one-year incidence (Grant et al., 2009). As expected, the number of recent past-year life events was associated with incident AUDs for Whites. However, inconsistent with expectations, past-year NLEs were associated with incident NLEs for Hispanic participants, but not for Black participants. In particular, significant disappointments – important, expected events that did not work out – were associated with incident AUDs for White and Hispanic participants. An exploratory analysis suggested that among Hispanics only, driver's license suspensions were more common among those with incident AUDs than those without. A previous study found that past-year NLEs attributable to participants' behavior were related to heavier alcohol consumption whereas other NLEs were not (Young-Wolff et al., 2012), which is arguably similar to our results regarding driver's license suspensions among Hispanics. The number of remote (~ a decade earlier) past-year life events was not associated with incident NLEs for any racial/ethnic group. Johnson and Pandina (2000) also found that remote events were unrelated to AUD prevalence.

Although Black participants experienced more life events than did White participants, life events were not associated with the development of AUDs among Black participants, consistent with past research (Lloyd & Turner, 2008; and in a sample of women: Werner et al., 2016). Past studies have found that NLEs related to job loss and economic downturns (Jones-Webb et al. 2016; Zemore et al., 2013) were particularly associated with AUDs among Black participants but the NLEs assessed in NCS-2 did not include these events. There is evidence that Blacks may initiate alcohol use at a later age than Whites and Hispanics, providing some protection from onset of AUDs (Malone et al., 2012; Sartor et al., 2016). Younger initiation of alcohol use and more NLEs interacted to predict greater alcohol

consumption in a racially homogenous sample of German youth (Blomeyer et al., 2011); these findings suggest that the later age of initiation among Blacks may protect them from the effects of NLEs.

These findings may also highlight the resilience of Black people and communities. Resilience has been defined as having a better outcome than expected after exposure to significant risk or adversity (Masten, 2001). In the current study, Black participants reported more NLEs than Whites, but total NLEs did not predict incident AUD among Blacks; however, the association between NLEs and incident AUD did hold for the total sample and for the White and Hispanic groups. Moreover, Blacks and Hispanics reported greater experiences of one particular stressor associated with incident AUD in the total sample: having an important, expected thing that didn't work out. But again, greater experiences with this stressor only predicted incident AUD among Whites and Hispanics. Although Blacks had greater exposure to this event and to overall risk from NLEs, they did not develop incident AUDs to the extent of other ethnic groups. One potential explanation for these results may be that Black participants had a different and more functional view of life events that was protective from the risks associated with life events. For example, those who expect negative events (i.e., have negative schemas) experience *less* distress in the face of NLEs (Blum, Silver, & Poulin, 2014; Schmidt & Joiner, 2004), perhaps decreasing the likelihood of negative outcomes such as AUDs when faced with stress. Stated alternatively, NLEs may be more normative to Blacks, who may habituate to their occurrence. Alternatively, Lloyd and Turner (2008) suggested that among African Americans, cumulative adversity may be reflected in physical health problems rather than AUDs. These hypotheses are speculative and would need to be tested in future research, which could moreover identify protective factors and strengths that buffer the impact of NLEs on AUD incidence among Black Americans.

The association of past-year NLEs and incident AUDs does not preclude the possibility that AUDs may have overlapped with or preceded some events (e.g., suspension of driver's license, serious trouble with the police), or more generally reflect a tendency to engage in high risk behaviors (Fetzner et al., 2011), which could lead to more LEs, in addition to more LEs leading to AUDs.

Limitations and implications

There were several limitations to the study, including in the measures of race/ethnicity, NLEs, and AUDs. The NCS coded race/ethnicity and gender into discrete and independent categories, which does not do justice to those with multicultural identities, gender nonconformity, nor to other dimensions of identity and its intersections. Limiting the assessment of life events to binary measures of presence or absence does not allow for the consideration of severity/chronicity of the stressor, nor context and meaning to the individual (Glass et al., 1995; Keyes et al., 2011). The NLEs assessed at NCS-2 were limited in number and type. Most other studies of NLEs have assessed more events, e.g., 53 items (Buchmann et al., 2010), 40 items (Asselmann et al., 2016), and 30 items (Boden et al., 2014). The NLEs assessed at NCS-1 and -2 were not the same: NCS-2 allowed participants to identify up to five idiographic NLEs, whereas NCS-1 queried specific events. In addition, there is

some risk of diagnostic assessment error without confirmation data from other measures of consumption and consequences. Assessing lifetime AUDs may be subject to measurement error such as false negatives (Haeny et al., 2014), and there is evidence that diagnostic assessments for AUDs may underestimate AUDs among Hispanics (Carle, 2009a & b), potentially due to cultural variation in the interpretation of diagnostic criteria (Caetano, 2011). Culturally biased assessment of ethnic minorities is of great concern and may contribute misdiagnoses and poor outcomes as a result (Snowden, 2003). Under-recognition of AUDs may contribute to under-utilization of treatment: both Blacks and Hispanics have been identified as groups that under-utilize treatment services in the US (Chartier & Caetano, 2011). However, despite these potential limitations, the results offer a novel and important examination of how NLEs may be associated with onset of AUDs among certain racial/ethnic groups. NLEs represent potential high-risk situations for the initiation of AUDs and could be targets for AUD prevention efforts, as high-risk situations have long been recognized to contribute to relapse among those with AUDs (Marlatt & Gordon, 1985).

Conclusions

This study found that past-year life events, in particular significant disappointments, were associated with greater odds of new onset AUDs among White and Hispanic participants. Although Black participants reported more recent life events than participants of other ethnic backgrounds, these events were not significantly related to new onset AUDs. These results among Black participants are suggestive of resilience and coping strategies that could be identified and used to inform prevention strategies.

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Table 1

Descriptive statistics on demographics and past-year life events

	White (*n* = 2778)	Black (*n* = 511)	Hispanic (*n* = 375)	Group Comparison
Age at NCS-1	34.14 (11.05)	32.10 (10.54)	29.26 (10.68)	$F(2,3675) = 26.74^{**}$
% Female	55.18%	59.57%	50.67%	$X^2(2) = 7.09^{*}$
Years of education	13.08 (2.45)	12.37 (2.23)	11.20 (2.83)	$F(2,3676) = 104.93^{**}$
NCS-1 NLEs	1.16 (1.22)	1.14 (1.17)	1.23 (1.35)	$F(2,3675) = 1.13$
NCS-2 NLEs	0.27 (0.60)	0.37 (0.66)	0.28 (0.60)	$F(2,3675) = 3.09^{*}$

Note: Standard deviations are in parentheses.

$^{*}p < .05$

$^{**}p < .001$.

Table 2

Predictors of incident AUD at NCS-2 across all participants, and by racial/ethnic group

	All Participants	White	Black	Hispanic
Age	0.95 * (0.94-0.96)	0.95 * (0.94-0.96)	0.98 (0.95-1.00)	0.96 * (0.92-0.99)
Gender	2.86 * (2.34-3.49)	2.65 * (2.11-3.33)	6.03 * (3.24-11.23)	2.70 * (1.43-5.11)
Education	0.94 * (0.91-0.98)	0.92 * (0.87-0.96)	1.00 (0.88-1.13)	1.00 (0.89-1.15)
NCS-1 NLEs	1.01 (0.93-1.09)	1.03 (0.94-1.12)	0.94 (0.72-1.23)	0.82 (0.63-1.07)
NCS-2 NLEs	1.26 * (1.11-1.44)	1.25 * (1.07-1.45)	0.92 (0.59-1.43)	2.06 * (1.37-3.10)

Note: 95% confidence intervals are in parentheses; age and education are continuous variables expressed in number of years; female gender is the reference category.

* $p < .05$

Table 3

Descriptive statistics on specific LEs and group comparisons

	White (*n* = 2778)	Black (*n* = 511)	Hispanic (*n* = 375)	Group main effect (χ^2)
Robbed	3.42%	3.52%	3.20%	0.07
Assaulted	3.24%	1.18%	0.80%	7.23*
DL suspended	1.30%	3.53%	1.07%	14.50*
Was sued	3.13%	4.12%	3.12%	1.32
Trouble w/police	0.90%	1.18%	0.53%	1.00
Important thing didn't work out	13.94%	18.24%	17.65%	8.73*

Note: DL = driver's license.

*$p < .05$

Table 4

Predictors of incident AUD at NCS-2 across all participants, and by racial/ethnic group

	All Participants	White	Black	Hispanic
Robbed	1.24 (0.75-2.05)	1.14 (0.62-2.10)	1.46 (0.39-5.39)	1.10 (0.23-5.19)
Assaulted	2.01 (0.72-5.60)	2.41 (0.59-9.89)	6.04 (0.76-47.87)	*a*
DL suspended	0.78 (0.40-1.54)	0.61 (0.25-1.51)	0.37 (0.07-1.80)	*a*
Was sued	1.05 (0.62-1.79)	1.12 (0.61-2.10)	0.78 (0.14-4.48)	1.25 (0.31-5.01)
Trouble w/police	1.39 (0.59-3.26)	1.89 (0.68-5.26)	0.84 (0.11-6.64)	*a*
Important thing didn't work out	1.44* (1.11-1.86)	1.42* (1.05-1.93)	0.59 (0.25-1.39)	3.77* (1.91-7.43)

Note: 95% confidence intervals are in parentheses; age, gender, and years of education were controlled in the analysis prior to the addition of life events.

*$p < .05$

[a]These events were not included in the analysis of the Hispanic subpopulation because of the infrequent occurrence (< 5).