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COMPARISON OF CHARACTERISTICS OF FEMALE DRIVERS WITH SINGLE AND MULTIPLE DUI CONVICTIONS

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Abstract

BACKGROUND—Women are increasingly involved in drunk driving and fatal crashes, yet except for the screening done in criminal justice settings, little is known about their life context, psychiatric histories, and family backgrounds. The current study describes a sample of women with histories of arrest for driving under the influence of alcohol (DUI) who were interviewed outside a criminal justice setting and contrasts women with single versus multiple DUI convictions.

METHODS—Women with recent documented histories of DUI participated in a study of women's health behaviors. Thirty-six women with one DUI and 64 with two or more DUIs participated in a diagnostic telephone interview which assessed demographics, alcohol use and problems, psychiatric problems, treatment, and partner violence.

RESULTS—The sample overall had high rates of co-occurring psychiatric problems, parental alcohol problems, early sexual and physical abuse, and head injuries. Alcohol use severity and the prevalence of head injuries and partner alcohol problems were significantly higher among women with multiple DUIs than women with a single DUI. Measures reflecting life context, such as marital status, number of children, and childhood trauma, were not associated with number of DUIs.

CONCLUSIONS—Findings suggest that DUI recidivism in women is accounted for primarily by AUD severity and is not influenced by previous life events such as partner violence, psychiatric problems, and family context such as divorce/separation or number of children. Multiple DUIs in women may mark an alcohol severity threshold beyond which few factors account for additional risk.

Keywords

DUI; Alcohol Use Disorder; Drunk Driving; Women

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Introduction

Women born since the early 1950s are more likely to develop alcohol problems (Grucza et al., 2008; Keyes et al., 2011) and to be arrested for drunk driving and crash involvement than women from previous generations. Indeed, between 1996 and 2007, young women were increasingly involved in fatal crashes, nullifying long-standing sex differences in fatal crash involvement (Tsai, 2010; Voas, 2012). Because research about drunk driving is conducted in predominantly male samples, reflecting the composition of DUI samples ascertained from state driving records, criminal justice and court-referred treatment settings, little is known about the characteristics of women arrested for drunk driving, and treatment is based primarily on knowledge of male offenders (Liang and Long, 2013). Examining the characteristics of female DUI offenders, particularly those with multiple offenses, can contribute to improved treatment of female offenders, which, in turn, may help to improve family health and public safety.

The few studies that document the characteristics of female DUI offenders show that they have a higher prevalence of alcohol use disorder (AUD) and more severe AUDs as compared to women from the general population (Lapham et al., 2001), as well as women without DUIs from families at high risk for AUDs (McCutcheon et al., 2009). Women with DUIs also have high rates of co-occurring psychiatric problems and drug use and disorder (Lapham, C'de Baca, et al., 2006; Lapham et al., 2001; Laplante et al., 2008). In a study of first-time DUI offenders interviewed five years after court referral to a screening program for alcohol problems, 85% of women met lifetime criteria for an AUD; of these, 37% met criteria for drug abuse or dependence, and 50% met criteria for a psychiatric disorder (Lapham, et al., 2001). Repeat DUI offenders have even higher rates of AUDs, drug, and psychiatric disorders than women with just one DUI. In a sample of repeat DUI offenders who took part in a treatment program to reduce recidivism, 100% of women met criteria for lifetime alcohol abuse or dependence, 80% met lifetime criteria for a psychiatric disorder, and 69% had abused or been dependent on at least one drug (Lapham, et al., 2006).

Few, albeit notable, studies have examined the life context of women with DUIs. One such study examined the predictors of re-arrest within 5 years after DUI offenders were referred by the courts to a program for evaluation of alcohol and drug problems (Lapham et al., 2000). Factors associated with re-arrest in bivariate models included not being married, having a parent or spouse with an alcohol problem, and hitting or throwing things at a spouse or partner. Physical and sexual abuse before age 18 were not associated with re-arrest. In a multivariable model that included blood alcohol level at time of arrest and prior DUI, only spousal/partner alcohol problems remained significant (Lapham, et al., 2000). Another study in a sample of 1,248 DUI offenders in a court-mandated treatment program found that almost 20% of female offenders reported having experienced lifetime sexual assault and over 30% reported physical assault (Hohman, Barker & Woodruff, 2017). Beyond these studies, little is known about female DUI offenders.

In the current study, we endeavor to fill this gap in knowledge about women arrested for DUI by examining the characteristics of women with one and two or more DUIs who were enrolled in the study based on driving record, rather than using screening or treatment

referral as our ascertainment strategy. This innovative approach allowed us to contrast women with just one DUI, who may not yet have been referred to treatment or a court-mandated program, with women with multiple DUIs who are likely to have more severe drinking histories (McCutcheon, et al., 2009) and who are more likely to have been in treatment. In addition to information about alcohol and drug use and psychiatric disorders, we assessed lifetime traumatic experiences, childbirth and medical history, early home environment, social support, marital history, and partner violence. The study aim was to document the characteristics of the sample overall and to compare characteristics of women with one versus those with two or more DUIs.

Materials and Methods

Sample

Women with documented DUI convictions were identified using publicly available court records posted on the Internet and driver's license records, which are made available for research with relevance to the public safety, as required under state law. For our target enrollment of 100 subjects, we identified 400 women with DUI convictions, an intentional oversampling to ensure that we could reach our target in this difficult-to-locate population (Kleschinsky et al., 2009; Lapham et al., 2000). Because we wanted to compare subjects with one DUI versus two or more, women with DUI convictions within the previous three years who were between the ages of 25 and 50 were targeted, since women in this age group are most likely to commit a repeat DUI offense (Jones and Lacey, 2000). Once potential subjects were identified, current contact information was obtained using standard public and commercial databases. Of the 400 potential participants, 146 women were located and screened, and 133 agreed to participate. Participants were enrolled by phone and scheduled for a telephone interview after providing informed consent, following a protocol approved by the Washington University human subjects committee. Interviews were completed with 100 women. After this target was reached, we did not expend further effort to reschedule interviews with the remaining 33 women who had missed interviews.

Consistent with the evidence that this is a difficult population to locate (Kleschinsky et al., 2009; Lapham et al., 2000), nearly 2500 telephone calls were made and 977 letters sent to obtain the sample. The number of DUI convictions for each participant was derived from self-report and from official sources (i.e., state database and/or Casenet), with the larger of these used to denote the number of convictions for each woman in the study. Data from both sources were available for 89 participants; in 50.6% of these cases, self-report and official reports agreed. Self-reported number of DUIs was higher than official records in 42.7% of cases, which may reflect recent convictions not shown on official records, old convictions that were expunged, or offenses while living in another state. In 6.7% of cases, official records were higher than self-report. Seven women reported no DUIs and official records were used as the source for number of DUIs (n=4 with one DUI, n=5 with two or more DUIs). Two of the women who reported no DUIs during the interview but had one DUI on record were excluded from analysis because they also reported no history of alcohol problems, diverging greatly from the rest of the sample and rendering the rest of their reports

suspect. Of the remaining 98 women interviewed for the study, 36 had one DUI and 62 had two or more.

Assessments

Participants were interviewed via telephone using a modified version of the Semi-Structured Assessment for the Genetics of Alcoholism (Bucholz et al., 1994; Bucholz et al., 1995; Hesselbrock et al., 1999), which included sections on demographics, medical history (including head injury), tobacco, alcohol, and marijuana use and dependence, illicit drug use, depression, antisocial personality and conduct disorder, post-traumatic stress disorder (PTSD), panic disorder, and early home environment. Additions to the interview included a separate trauma screen to assess lifetime traumatic events (not just those associated with PTSD), and participant report on alcohol problems in parents and significant other. We attempted to re-contact the 36 participants who reported head injuries to obtain data on the number and year of injuries, and successfully contacted 26 of these women. Respondents also completed two questionnaires, one to assess social support (Norbeck, 1984) and one to assess intimate partner violence (Straus et al., 1996). For the social support questionnaire, respondents listed up to 24 individuals who are important to them, their length of acquaintance and frequency of contact. Social support measures used in the current study were the number of individuals in network, total network support (sum of number in network, duration of acquaintance and frequency of contact), and functional network support (sum of emotional support [e.g., “How much does this person make you feel liked or loved?”], and tangible support [e.g., “If you were confined to bed for several weeks, how much could this person help you?”]). Regarding intimate partner violence, scores for psychological aggression (e.g., “My partner insulted or swore at me, called me ugly, yelled at me, threatened to hit or throw something at me”), physical assault (e.g., “My partner threw something at me, twisted my arm or hair, threw something at me, used a knife or gun on me, slammed me against a wall”), injury (e.g., sprain, bruise, cut, broken bone because of fight with partner), and sexual coercion (e.g., “My partner made me have sex without a condom, used threats to make me have sex”) during the previous 12 months were calculated for the partner’s behavior toward the subject and vice-versa. Because the median for all measures except psychological aggression was zero, we created categorical variables representing occurrence of any psychological aggression, physical assault, injury and sexual coercion during the previous 12 months. Interview times ranged from 1 to 4.5 hours, and compensation ranged from \$16 to \$117 based on the length of their interview plus bonuses for keeping scheduled appointments and returning questionnaires. The average length of interview was 2.5 hours, with payments of \$40 to \$85.

As a proxy for DSM-5, alcohol use disorder was coded as presence of two or more DSM-IV alcohol dependence or abuse symptoms co-occurring in the same 12-month period. Due to tautology with DUI history, the hazardous use criterion excluded driving while drunk and car accident, but included using alcohol with medications and accidental injury.

Statistical analysis

Participants were categorized into two groups based on number of DUIs (one and two or more). Sample characteristics were calculated and tabulated for the sample as a whole and

by DUI category. Chi-square tests (for categorical variables) and t-tests (for continuous variables) were estimated to assess for significant differences between the one and two or more DUI groups. For the post-hoc analysis of data related to head injury, we determined which head injuries had occurred before first DUI. We then used survival analysis to estimate Kaplan-Meier failure curves representing time to first head injury as a function of DUI category for the 26 women from whom we had data on timing of head injuries, and time to first DUI as a function of head injury that occurred prior to first DUI, relative to timing of first DUI among women with no head injury.

Results

Demographic characteristics

The sample was primarily White (92.9%) and ranged in age from 21 to 52. A majority of women had children (77.6%) and were separated or divorced (58.2%). Household incomes were low overall, with 48% of the sample living on less than \$20,000 per year. Women with two or more DUIs were older on average than women with one DUI, and were less likely to be employed (Table 1)¹.

Alcohol and drug use

Table 2 shows the individual and environmental characteristics of women with one compared to those with multiple DUI convictions. Women with multiple DUIs had more severe alcohol use histories than those with one only, as reflected in larger proportions with lifetime and current AUD, a larger mean number of lifetime AUD symptoms, and a longer duration of AUD. Rates of lifetime nicotine dependence and cannabis were uniformly high in all groups. Lifetime illicit drug use was more common among women with multiple DUIs.

Psychiatric disorders and treatment

The lifetime prevalence of PTSD and depression was above 30% percent in both groups.

The number of lifetime conduct disorder and antisocial personality disorder symptoms was significantly higher among women with multiple DUIs than those with one only.

Nearly three-fourths of the sample had accessed professional treatment for alcohol problems, 63.3% had attended self-help groups, and more than half (55.1%) of women had also sought professional treatment for psychiatric problems. Women with two or more DUIs were significantly more likely to have undergone professional alcohol and drug treatment as well as self-help attendance.

Early environmental risk

Over 60% of the sample reported alcohol problems in one or both parents. Nearly 40% of the sample reported sexual assault and 25.5% reported physical abuse before age 13. Rates of reported parental alcohol problems in one parent were higher among women with two or

¹Refer to Table 3 in the Appendix for complete demographic, individual, and environmental characteristics examined in this sample.

more DUIs. Women with multiple DUIs had higher rates of childhood abuse, though not statistically different from women with one DUI only. Eight percent of women with one DUI reported having been accused of child abuse themselves, in contrast to 19.3% of those with two or more DUIs.

Physical health

Self-perceived health was generally very good or good for the majority of women. However, head injuries were common, with 36.7% of the sample reporting a head injury; rates were significantly higher among women with multiple DUIs. Cancer was also significantly more common among women with multiple DUIs, as was the lifetime use of prescription medications for anxiety, sleep, and depression.

Social environment

Significant others—More than half of the sample reported their current spouse or partner had problems with alcohol, and women with multiple DUIs reported partner alcohol problems at significantly higher rates than women with one DUI (67.7% versus the one DUI group at 36.1%). Despite the high levels of alcohol use in these couples, rates of self-reported partner violence were not significantly different across groups. More than half the sample (60.9%) reported their partner had used psychological aggression in the past 12 months, by far the most commonly reported form of partner conflict. Less than 20% of the sample reported any physical assault or injury by their partner over the last 12 months, and 27.2% reported sexual coercion by their partner; these rates did not differ across DUI categories. However, women with multiple DUIs reported significantly higher rates of physical assault against their partner in the previous 12 months (37.9%) than those with one DUI (14.7%).

Social network—The number of people nominated to the social network was 11.5 on average. Women with multiple DUIs reported significantly lower levels of functional network support than did women with one DUI only and also reported lower levels of total network support than did women with only one DUI, (although these differences were not statistically significant). Over half the sample reported having relatives who had quit or cut down on their own alcohol consumption, and one-third reported that friends or family had sought help for alcohol problems. Women with multiple DUIs reported having significantly more friends who had sought treatment for alcohol problems than those in the 1 DUI group.

Post hoc analysis: Head injuries

The high prevalence of head injuries was an unanticipated finding. As the interview did not include specifics about the origin of head injuries, we re-contacted 26 of the 36 women who reported head injuries to query how and when their injuries happened. Of those we could not re-contact, two were deceased, one was in jail and not available for interview, and seven were not locatable (e.g., no phone, changed address). Of the women we contacted, 10 reported one injury and 16 reported two or more head injuries; the total number of head injuries reported was 62. A majority of women (63%) reported that their first head injury predated their first DUI. Reasons given for head injuries were falls (n=26), a car or motorcycle accident (n=17), domestic violence (n=14, e.g., ex-husband slammed head into a

countertop, kicked her in head), and other (n=5, e.g., riding a horse). Subjects were asked whether alcohol or drugs were involved in their injuries. Of the 25 falls reported, 12 happened before age 12 and did not involve alcohol and 10 women reported their own alcohol use caused their falls. Of the 17 accidents reported, 10 involved the subject's alcohol use. Of the domestic violence incidents, 3 women reported their own alcohol use was involved and 12 reported their partner's alcohol or drug use was involved. Of the other incidents, 1 involved the subject's alcohol use. Figure 1 shows the cumulative incidence of all head injuries in women with one and two or more DUIs (injuries could occur before or after first DUI). Women with two or more DUIs had a significantly higher incidence of head injury than women with one DUI. Figure 2 shows the cumulative incidence of first DUI as a function of head injuries that predated first DUI. Although the difference between women with head injuries that predated their first DUI and women without head injuries was not significant, it is nonetheless apparent that the cumulative incidence of DUI was higher at a younger age among women with head injuries.

Discussion

This study characterized a sample of predominantly White women convicted of one or more DUIs. Overall, the sample had high rates of psychiatric disorders and severe AUDs, consistent with findings in previous studies of women with DUIs. In our study as well as that undertaken by Lapham and colleagues (2001) in New Mexico, our sample was characterized by women living at the lower end of the socioeconomic spectrum with similar degrees of educational attainment--27% high school only and 48% more than high school [Lapham et al., 2001], compared to our sample of 30% with a high school diploma and 54% with education past high school. Compared with Laplante and colleagues' (2008) study of women mandated to treatment in Massachusetts, our study was demographically similar (majority White and low-income with a similar median age); however, in that study, women had lower rates of education (55% had not graduated from high school) and had high rates of co-occurring disorders, especially PTSD (24% qualified for the disorder in the past year; in our study, 30.6% of women with more than one DUI qualified for a lifetime diagnosis of PTSD).

Our study contributes the finding that sexual and physical assault at a young age is common in these women, that head injuries are also common, especially among women with multiple DUIs, and that network support is lower among women with multiple DUIs compared to the support of women with just one DUI. Measures reflecting family and life context, such as marital status and number of children, were not associated with recurrent DUIs. By contrast, findings from population-based samples suggest that childbirth and child rearing are life events typically accompanied by reductions in drinking (Dawson et al., 2006; Russell et al., 2001). Similarly, given evidence that early childhood abuse is associated with increased risk for AUDs in adults (Anda et al., 2002; Felitti et al., 1998; Green et al., 2010; La Flair et al., 2013), in our sample childhood abuse had no association with DUI recidivism, a behavior associated with severe alcohol problems (McCutcheon et al., 2011; McCutcheon, et al., 2009). This finding is even more notable given the high rates of early sexual and physical abuse reported by women in this study. Nonetheless, the lack of association is consistent with data from DUI offenders (49% female) referred by the courts to an alcohol screening program (Lapham, et al., 2000). In that study, 13% of the sample overall, and 20% of

recidivists, reported having experienced physical or sexual abuse before age 18, in contrast to nearly 40% of the current sample reporting sexual abuse and 26% reporting physical abuse before age 13. It is possible that the universally high rates of early abuse in this sample restricted the variance, and therefore the power, to detect an association of abuse with recidivism. It is also possible that DUI behavior marks a severity threshold beyond which few factors account for additional risk.

Heavy alcohol use is a frequent correlate of abuse or neglect of one's children (Widom & Hiller-Sturmhofel, 2001) and women in this sample were no exception. Over 15% stated they had been accused of child maltreatment at some point during their lifetime. The child abuse and family violence literature abounds with evidence of an alcohol-child maltreatment link (Gilbert, Widom, Browne, Fergusson, Webb & Janson, 2008). Smaller studies have found that mothers who abuse alcohol or drugs are more hostile and punitive toward their children (Miller, Smyth & Mudar, 1999) and alcohol or drug use is one of the primary reasons parents are reported to the authorities for child maltreatment (Burrus, Mackin, & Finigan, 2011), prompting many family courts to mandate alcohol or drug treatment as a condition of reunification (Dakof, Judge & Duarte, 2009).

The low prevalence of partner violence overall belied the comparatively high numbers of women with partners who had alcohol problems. Alcohol involvement is one of the most consistently reported risks for intimate partner violence (IPV; Foran & O'Leary, 2008; Stith, Smith, Penn, Ward & Tritt, 2004), especially male-to-female violence perpetration (Schumacher, Feldbau-Kohn, Slep & Heyman, 2004). This observation has also held true, albeit with smaller effect sizes, in studies measuring mutual violence or female-perpetrated abuse (Foran & O'Leary, 2008). Caetano and colleagues have found that female-perpetrated IPV is higher than male-perpetrated IPV in a study of 1,440 couples, and between 4–24% of the female partners had been drinking at the time of the incident (Caetano, Cunradi, Schafer & Clark, 2000). The interrelationships between violence and drinking are complex. However, a 2000 study of 1,615 married couples found that it was primarily discordant drinking patterns between couples that predicted IPV (Leadley, Clark & Caetano, 2000); that is, couples whose alcohol involvement or drinking behaviors were roughly similar did not experience as much conflict as those whose drinking habits differed from one another. In a systematic review of couples' alcohol involvement and partner violence, Marshal (2003) found strong evidence that alcohol use was typically a maladaptive coping strategy associated with increased partner violence, but did acknowledge a small subset of studies showing that some drinking patterns—such as those involving partners who used alcohol in similar ways or in similar quantities—was indicative of positive marital functioning. It is possible that many women in this sample represented one-half of a relationship subtype characterized by similarly matched heavy or risky drinking patterns for both partners.

Previous studies have suggested that the importance of social context in understanding women's alcohol use and DUI offending. In one study of 161 DUI offenders, 86% reported they had been drinking with a friend immediately before the accident (Beck, Ahmed & Farkas, 2011). Heavy drinkers tend to cluster in groups (Buller, Cooper & Russell, 2001; Rosenquist, Murabito, Fowler & Christakis, 2010), although the peer influence on drinking is not as strong as the individuals' selection of a social network with similar drinking

patterns (Bullers, Cooper & Russell, 2001). Less well established is whether a link between social network alcohol remission or a reduction in use is associated with an individual's decision to cut back on drinking. Our study findings appeared to suggest this, with at least a third of DUI offenders reporting that they had friends or family who had sought help for alcohol problems or reduced their alcohol consumption. Coupled with this finding is the observation that women with multiple DUIs reported significantly less functional support and less network support overall. This may point to the heavier alcohol use patterns and diminished social support over time, an association that has been observed in previous studies of heavy drinkers (Peirce, Frone, Russell, Cooper & Mudar, 2000).

One anticipated finding was the prevalence of lifetime depression among women in this sample, with steadily increasing rates for those with multiple DUI convictions. Depression is one of the most commonly reported psychiatric disorders co-occurring with heavy alcohol involvement (Hasin, Goodwin, Stinson & Grant, 2005) as well as those who drive while impaired (Lapham, Smith, C'de Baca, Baum & Hunt, 2001). In this sample, women reported lifetime depression at rates nearly three times higher than population averages for their age cohort (Centers for Disease Control & Prevention, 2012). The high rates of reported depression are concurrent with high rates of illicit drug use (52.0%) and PTSD (36.7%) compared to population averages, emphasizing the severity of the multiple-DUI alcohol phenotype in this sample. Unsurprisingly, psychiatric treatment was reported by over half the women in this sample and was equally common among women with a single and multiple DUIs..

By contrast, professional alcohol treatment and self-help attendance were more common among women with multiple DUIs. In longitudinal data on 175 female repeat offenders referred for alcohol screening by the court, previous substance abuse treatment and having been referred to a victim impact panel ([VIP] a sanction for DUI offenders which exposes DUI offenders to individuals whose lives were affected by drunk drivers) were associated with increased recidivism risk up to eight years later (C'de Baca et al., 2001). Another study which compared a novel treatment program for DUI offenders which included intensive probation services, mandated alcohol treatment, Alcoholics Anonymous attendance, and VIP attendance with a traditional court-referred program found participants who chose the novel program had 50% reduced risk of recidivism (Lapham, Kapitula, et al., 2006). Because specific treatment information was unavailable for the current study, meaningful comparisons with these studies are not possible. However, the finding that more than a third of women accessed professional treatment and 16% attended a self-help group before their first DUI suggests awareness of their own alcohol problems and attempts to reduce drinking before their first DUI arrest.

Although the high prevalence of head injuries in this population was an unanticipated finding, it was not surprising, given DUI offenders' disproportionate exposure to risk for car crashes and associated head injuries (Bazarian et al., 2005; Cunningham et al., 2002). The causal agents in head injuries, such as falls, vehicle accidents, domestic violence, are themselves associated with excessive alcohol use (Rehm, Mathers, Popova, Thavorncharoensap, Teerawattananon & Patra, 2009), making it difficult to disentangle their contribution to DUI risk. Nonetheless, head injuries are an important consideration for

interventions focused on DUI offenders, as they can inhibit the ability to benefit from treatment (Graham & Cardon, 2008), and cognitive deficits associated with head injury have been identified in DUI offenders (Glass et al., 2000).

Limitations

The results of this study must be interpreted cautiously due to its limitations. The sample was small relative to other studies of DUI offenders, and the data were cross-sectional, with retrospective reporting of the ages at occurrence of events. It is also possible that the women we were able to locate and contact differed in significant ways from those we could not locate, and that those who agreed to be interviewed differed from those who declined to be interviewed; we lack the data to test these possibilities. We also lacked information regarding whether treatment was mandated, which is likely particularly among women with multiple DUIs. However, the factors associated with recidivism were broadly consistent with findings from larger, longitudinal studies. Another limitation is the lack of variance inherent in this sample selected on a behavior, DUI offense and conviction, that itself marks a more severe end of the AUD continuum. The ability to detect statistical significance in such a sample is reduced. Within this limitation, however, we did obtain results similar to previous studies.

Conclusions

Findings from this descriptive study of 98 women suggest that multiple DUIs are a marker of severe alcohol problems which are not subject to the influence of life events. The fact that women in this study were identified through state driving records and not through treatment centers or the court system, as is usually the case with studies of DUI offenders, further underscores the high-risk nature of this sample. Future studies are needed to replicate this work in larger and more diverse samples of women. In addition, research examining predictors of DUI recidivism and alcohol remission among women using prospective or longitudinal data would greatly contribute to our understanding of this severe phenotype. Our findings suggest that including assessments of head injury, social network support, and early family life context may glean further insights about female DUI offenders and may have implications for prevention of DUI recidivism and alcohol treatment generally.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Figure 1.
Cumulative Incidence of Head Injury By Number of DUIs

Figure 2.
Cumulative Incidence First DUI By Head Injury

Table 1

Demographic information of women with one and two or more DUI convictions.

	Total Sample (n=98)	1 DUI (n= 36)	2 or more DUIs (n=62)	χ^2 (df) or t-test (df)	p-value
	% or M(SD)	% or M(SD)	% or M(SD)		
Age	40.4 (7.8)	37.0 (8.3)	42.4 (6.7)	-3.5 (96)	.0007
Age first DUI	29.4 (9.0)	30.9 (7.9)	28.6 (8.3)	1.4 (96)	.1779
Race					
European American	92.9	91.7	93.5	0.3 (2)	.849
African American	3.0	2.7	3.2		
Other	4.1	5.6	3.2		
Education					
Less than high school	16.3	11.1	19.3	5.4 (2)	.067
High school only	29.6	19.4	35.5		
Some post-high school	54.1	69.4	45.2		
Marital status					
Married	17.3	22.2	14.4	2.8 (2)	.246
Separated or divorced	58.2	47.2	64.5		
Never married	24.5	30.6	21.0		
Currently employed	62.2	75.0	54.8	3.9 (1)	.047
Biological children					
0	22.4	27.8	19.3	0.9 (2)	.619
1-2	42.9	38.9	45.2		
3 or more	34.7	33.3	35.5		
Household income					
\$0-19,999	48.0	44.4	50.0	3.8 (2)	.149
\$20,000-39,999	31.6	25.0	35.5		
\$40,000 and up	20.4	30.6	14.5		

Table 2
Comparison of women with one and two or more DUI convictions, individual and environmental characteristics.

	Total Sample (n=98)	1 DUI (n= 36)	2 or more DUIs (n=62)	χ^2 (df)	p-value
Alcohol Use					
DSM-5 AUD, lifetime	75.5	55.6	87.1	12.2 (1)	<.001
DSM-5 AUD, current	52.0	36.1	61.3	5.8 (1)	.016
DSM-5 AUD lifetime symptoms	5.8 (3.3)	3.8 (3.3)	6.9 (2.8)	-5.00 (96)	<.001
Duration AUD, conditional on AUD)	16.1 (9.1)	10.0 (9.3)	18.4 (8.0)	-3.80 (72)	<.001
Max drinks in 24 hours, lifetime	24.9 (20.4)	18.6 (12.3)	28.7 (3.0)	-2.4 (95)	.0171
Drug use					
Illicit Drug use, lifetime	52.0	30.6	64.5	10.5 (1)	.001
Psychiatric disorders					
CD symptoms, M (SD) ^a	1.09 (1.12)	0.6 (0.8)	1.4 (1.2)	-3.6 (96)	.0005
ASPD symptoms, M (SD) ^b	2.35 (1.49)	1.9 (1.2)	2.6 (1.6)	-2.4 (96)	.0199
Treatment					
Professional alcohol treatment	72.4	52.8	83.9	11.0 (1)	.001
Self-help attendance, alcohol	63.3	44.4	74.2	8.7 (1)	.003
Professional drug treatment	28.6	13.9	37.1	6.0 (1)	.014
Early Environmental Risk					
Parental alcohol problems					
One parent only	42.3	30.6	49.2	6.9 (2)	.031
Both parents	21.6	16.7	24.6		
Health / Medical history					
Head injury or concussion	36.7	19.4	46.8	7.3 (1)	.007
Cancer	15.3	5.6	21.0	4.2 (1)	.041
Medications taken for at least 2 weeks, lifetime					
Anti-anxiety	44.9	27.8	54.8	6.7 (1)	.009
Sleep aid	31.6	16.7	40.3	5.9 (1)	.015
Anti-depressant	53.1	36.1	62.9	6.6 (1)	.010

	Total Sample (n=98)	1 DUI (n=36)	2 or more DUIs (n=62)	χ^2 (df) or t-test (df)	p-value
Partner, network variables					
Partner alcohol problems	56.1	36.1	67.7	9.2 (1)	.002
Subject-to-partner behavior, past 12 months					
Physical assault, any	29.3	14.7	37.9	5.57 (1)	.018
Network, network help-seeking					
Number in network	11.5 (5.6)	13.0 (6.3)	10.7 (5.1)	1.90 (91)	.0601
Total network support	108.1 (51.1)	122.7 (57.0)	100.4 (46.4)	2.02 (91)	.0455
Functional network support	188.6 (100.8)	229.1 (116.0)	167.3 (85.4)	2.92 (91)	.0044
Has friend(s) who sought help for alcohol problems	32.6	13.9	43.5	9.11 (1)	.003

^a CD symptoms were categorized into 1 symptom only or 2–4. Although the possible range was 0–15 symptoms, the actual range was only 0–4.

^b ASP symptom range is 0–7.