



HHS Public Access

Author manuscript

J Offender Rehabil. Author manuscript; available in PMC 2015 July 27.

Published in final edited form as:

J Offender Rehabil. 2013 ; 52(6): 421–437. doi:10.1080/10509674.2013.813616.

A Comparison of First Time and Repeat Rural DUI Offenders

Megan F. Dickson, Nesa E. Wasarhaley, and J. Matthew Webster

University of Kentucky, Center on Drug and Alcohol Research

Abstract

The purpose of the current study was to examine whether the differences found between first time and repeat rural DUI offenders were the same as those found previously in urban samples. A total of 118 rural DUI offenders were interviewed, approximately half (51.7%) of which were repeat offenders. Although demographic and mental health characteristics were similar across the two groups, repeat offenders reported more extensive substance use and criminal histories. Results suggest that the pattern of differences between rural first time and repeat DUI offenders may be different from the pattern found in prior urban-based studies. Treatment implications are discussed.

Keywords

DUI; rural; recidivism; substance use; mental health; crime

Introduction

Driving under the influence (DUI) is one of the most frequently committed offenses in the United States and accounts for approximately a third of substance-related arrests (Federal Bureau of Investigation, 2012). According to the 2011 National Survey of Drug Use and Health (NSDUH), approximately 28.6 million people ages 12 and older reported driving under the influence of alcohol at least once during the past year. During the same time period, 9.4 million people ages 12 and older reported driving under the influence of illicit substances (Substance Abuse and Mental Health Services Administration (SAMHSA), 2012a). While this rate is lower than previous years, DUI remains a major public health threat with alcohol-impaired driving accidents alone accounting for 32% of all traffic-related deaths in the United States in 2008 (National Highway Traffic Safety Administration (NHTSA), 2009). Although estimates for the total number of fatalities related to drug-impaired driving do not exist, a NHTSA (2010a) report shows that among fatally-injured drivers, 18% tested positive for at least one drug in 2009. Repeat DUI offenders raise additional public health concern since they are more likely to be involved in fatal motor-vehicle accidents (NHTSA, 2004).

Driving under the influence is more prevalent in certain populations; white, biracial, and Native American males, in particular, are more likely to self-report recent DUI behavior

Correspondence concerning this article should be addressed to Megan F. Dickson, University of Kentucky, Center on Drug and Alcohol Research, 643 Maxwelton Court, Lexington KY, 40506-0350, USA or via email to megan.dickson@uky.edu.

than those of other ethnic backgrounds (Caetano & McGrath, 2005; Royal, 2003). Age is also a DUI risk factor since individuals ages 21 to 25 are more likely to report driving under the influence of alcohol or drugs in the past year than any other age group (SAMHSA, 2012a). Geographically, rural communities have higher arrest rates for DUI than urban communities (643.7 per 100,000 vs. 332.2 per 100,000; FBI, 2012). Despite the high DUI rates in rural communities, there is limited empirical knowledge about rural DUI offenders – a notable gap in the literature given the recent studies pointing to increased substance use in rural regions and the barriers to treatment in these areas.

Rural Substance Use and DUI

Once identified as a protective factor for substance use, recent research indicates that rural residence is no longer associated with lower rates of substance use. Specifically, researchers have found that individuals living in rural areas use substances at similar rates to their urban counterparts (Van Gundy, 2006). The most recent NSDUH results show that current rates of illicit drug use are only marginally higher (<2%) in metropolitan counties than in nonmetropolitan (including rural) counties (SAMHSA, 2012a). Likewise, the NSDUH concluded that binge drinking rates and rates of underage drinking were similar across urban and rural areas (SAMHSA, 2012a).

Rural residence is also becoming increasingly associated with substance use problems. For example, research has found that it is common for rural community members to use certain types of drugs at higher rates than urban residents (Leukefeld et al., 2002; Mink et al., 2005), including prescription opiates (Tunnell, 2005), methamphetamine (Simons et al., 2005), and inhalants (Hutchison & Blakely, 2006). Borders and Booth (2007) also concluded that while abstinence from alcohol is still common in the rural South, there is evidence of increasing rates of heavy alcohol use and alcohol use disorders in rural communities overall. Furthermore, some studies have documented higher rates of alcohol use among younger rural populations than those in urban areas, specifically individuals under the age of 25 (National Center on Addiction and Substance Abuse, 2000; Van Gundy, 2006).

Despite the growing body of literature exploring substance use problems in rural areas, the studies examining rural DUI offenders remain limited and often are not the primary research focus. For instance, in a study investigating substance use patterns among rural youth (Lambert, Gale, & Hartley, 2008), a secondary finding was that rural youth were more likely than urban youth to drive under the influence of either alcohol or illicit drugs. Only a few studies have focused on differences between rural and urban DUI offenders. These studies have found that rural DUI offenders score significantly higher on drug abuse screening instruments and are more likely to 1) have multiple DUI offenses, 2) meet DSM-IV criteria for a substance use disorder, 3) be referred to substance abuse treatment rather than an education intervention, and 4) subsequently be noncompliant with treatment and education recommendations (Webster et al., 2009b; Webster et al., 2010). These findings suggest that problem severity may be greater among rural DUI offenders than urban offenders.

Repeat DUI Offenders

According to the NHTSA (2004), close to one-third of all drivers arrested for DUI have at least one previous DUI conviction. An analysis of crash data revealed that drivers with a blood alcohol concentration (BAC) of .01 or higher who were involved in a fatal crash were at least four times more likely to have a prior DUI conviction than drivers with no alcohol in their system (NHTSA, 2010b), and those with a BAC exceeding .08 were 8 times more likely to have a prior DUI conviction (NHTSA, 2010b). Because repeat DUI offenders pose a significant threat to themselves and the community, researchers have sought to gain a better understanding of the factors that contribute to DUI recidivism.

Numerous studies have compared first time and repeat DUI offenders with the goal of identifying the characteristics of offenders at risk for reoffending. Results have shown that repeat DUI offenders are distinct from first time DUI offenders in terms of their demographic characteristics as well as their criminal histories, substance use, and mental health histories. Specifically, repeat offenders are more likely to be male, white and unmarried (Hunter et al., 2006; Nochajski & Stasiewicz, 2006; Wiczorek & Nochajski, 2005). In addition, first time offenders younger than 30 are more likely to commit additional DUI offenses than older offenders (C' de Baca et al., 2001). Repeat offenders are also more criminally-involved (Royal, 2000; Webster et al., 2009a), report heavier alcohol and drug use (Hedlund & McCartt, 2002), and are more likely to report psychological problems such as depression (Freeman, Maxwell, & Davey, 2011; McMillen et al., 1992; Royal, 2000; Shaffer et al., 2007).

The Current Study

Although differences between first time and repeat DUI offenders have been documented, most of these studies have utilized larger urban samples rather than rural samples. This gap in the literature is noteworthy because research has indicated increasing substance use and substance use problems, including DUI offenses, in rural communities. It remains unclear whether differences between first and repeat DUI offenders in rural areas mirror those found in urban settings, which could have implications for prevention programs as well as the clinical assessment and treatment of this group of offenders.

The current study was conducted to examine whether differences between first time and repeat DUI offenders in a rural setting were consistent with those documented in prior urban-based studies. Specifically, this study compares first time and repeat rural DUI offenders on demographic information, substance use, mental health and criminal histories. Consistent with previous research, it was expected that repeat DUI offenders would be more likely to be male and would report greater current and past substance use (Nochajski & Stasiewicz, 2006). Rural repeat DUI offenders were specifically expected to report greater illicit prescription drug and methamphetamine use since several recent studies have highlighted notable increases of these substances in rural communities (Leukefeld et al., 2002; Simons et al., 2005; Tunnell, 2005). It was also expected that repeat offenders would exhibit greater mental health problems and would report significantly more criminal activity.

Method

Sample and Procedure

As part of a NIH-funded study examining the patterns, behaviors, and characteristics of DUI offenders in rural Appalachia, a purposive sample of 118 individuals convicted of driving under the influence was recruited from one of three rural Appalachian Kentucky district courts and interviewed between February 2009 and April 2011. Study eligibility was based only on three criteria: participants must have (a) been 18 years of age or older; (b) been convicted of a DUI within the past 12 months in one of the three targeted counties; and (c) resided in the same county in which they were convicted. The sample was 70.9% male and the majority (51.7%) had been convicted of DUI two or more times. Participants' average age was 35.1. Participants were mostly White (96.6%), which is consistent with the demographic characteristics of the area.

Participants were recruited using two methods. In most cases (90%), research staff identified potential recruits from the court dockets and attended court proceedings. If convicted, research staff immediately approached the offender outside the courtroom, extending an invitation to participate in this IRB-approved study. If the DUI offender was interested in participating and met all three eligibility criteria, research staff either facilitated the interview the same day or scheduled a later appointment. Approximately 27% of approached, eligible offenders refused to participate. Primary reasons for refusal included not having time or being accompanied by family/friends. The remaining participants (10%) were recruited through flyers placed in various locations around the community. For those eligible, interviews were scheduled with the participants at their earliest convenience. After participants provided their informed consent, subjects completed a one-time confidential research interview with a trained interviewer. The interview lasted approximately 90 minutes, and subjects received \$25 for their participation.

Measures

Demographics—Demographic information was collected from participants during the interview and included age, gender, race/ethnicity, level of education, and marital status. These measures were used primarily to describe the sample.

Mental Health History—Participants' mental health histories were collected using components of the Addiction Severity Index (McLellan et al., 1992). Specifically, participants' self-reported lifetime and past year incidence of depression, tension and anxiety, and any trouble remembering or concentrating were recorded. Participants also provided information about whether they had ever received mental health treatment.

Substance Use History—Substance use histories were also collected using sections of the Addiction Severity Index (McLellan et al., 1992). Participants were asked to report on their current and past substance use patterns, including their use of alcohol, marijuana, powder and crack cocaine, methamphetamine, heroin, amphetamines, sedatives/tranquilizers, methadone, OxyContin®, and other opiates/analgesics (only illicit use was recorded). Specifically, participants were asked to identify if they had ever used a substance,

the age of first use, any use during the past year, and the number of years the substance was regularly used.

Criminal History—Participants were asked to report their past criminal behaviors. Specifically, participants reported whether they had ever committed shoplifting, burglary, auto theft, forgery, other theft/larceny, drug trafficking, drug possession, vandalism, robbery, assault, illegal weapon possession, or sold/traded/received stolen goods (regardless of arrest). Participants also self-reported the age they first committed each crime and how many times they had been arrested for each crime. Using this self-report information, three additional variables were created: 1) number of lifetime arrests, 2) age first committed a crime (regardless of arrest), and 3) a dichotomous variable for whether or not participants had ever committed a non-DUI crime. Incarceration histories were also recorded.

Data Analysis

Participants were separated into two groups, first time DUI offenders ($n = 56$) and repeat DUI offenders ($n = 61$) based on their self-reported number of lifetime DUI convictions. One participant was unable to be categorized due to missing DUI history information, resulting in a final sample of 117. After verifying that recruitment method was unrelated to any key variables, first time and repeat DUI offenders were compared using a series of chi-square tests and t -tests to examine the differences in mental health, substance use, and criminal histories. Group differences were considered significant at $p < 0.05$. Analyses were conducted using PASW v.18 (SPSS Inc., Chicago, IL).

Results

The demographic characteristics of first time and repeat DUI offenders were similar. Although repeat DUI offenders were slightly older (36.2 vs. 33.8) and more likely to be male (77% vs. 64.3%) and married (34.4% vs. 28.6%), none of the differences were statistically significant.

First time and repeat DUI offenders also reported similar mental health histories. While not statistically significant, more first time DUI offenders self-reported having received mental health treatment in their lifetime than repeat DUI offenders (44.6% vs. 41.0%) and a higher percentage of repeat DUI offenders self-reported a lifetime incidence of depression (68.3% vs. 61.8%), anxiety (76.7% vs. 67.3%), and trouble concentrating (45.0% vs. 33.3%) than first time DUI offenders. A greater number of repeat DUI offenders also reported past year incidences of these mental health problems, although these differences were not statistically significant.

An examination of substance use histories, however, did reveal differences between first time and repeat DUI offenders. Repeat DUI offenders were significantly more likely to report having ever used illicit drugs during their lifetime ($\chi^2(117) = 10.28, p = .001$), with significant differences for marijuana ($\chi^2(117) = 5.70, p = .017$), powder cocaine ($\chi^2(117) = 9.30, p = .002$), crack cocaine ($\chi^2(117) = 6.24, p = .012$), hallucinogens ($\chi^2(117) = 6.85, p = .009$), heroin ($\chi^2(117) = 6.84, p = .009$), amphetamines ($\chi^2(117) = 9.25, p = .002$), methadone ($\chi^2(117) = 10.29, p = .001$), OxyContin® ($\chi^2(117) = 7.07, p = .008$), and other

opiates and analgesics ($\chi^2(116) = 6.71, p = .01$). Repeat offenders were also significantly more likely to report past year illicit drug use ($\chi^2(117) = 5.60, p = .018$) and reported significantly more years of regular drug use ($t(115) = -3.23, p = .002$). Repeat DUI offenders also reported first using alcohol at a significantly earlier age ($t(113) = 3.57, p = .001$). Age of first use did not vary for any other substances.

Several differences also emerged for criminal behavior and incarceration histories. Repeat DUI offenders were significantly more likely than first time offenders to have ever committed a non-DUI crime (regardless of arrest; $\chi^2(115) = 9.38, p = .002$) and to have been incarcerated after a conviction as an adult ($\chi^2(117) = 14.49, p = .000$). In addition, repeat offenders spent significantly more time incarcerated ($t(110) = -2.80, p = .006$), first engaged in criminal behavior at an earlier age ($t(112) = 3.17, p = .002$), and reported more non-DUI arrests ($t(113) = -3.56, p = .001$).

Discussion

The purpose of the present study was to examine characteristics of first time and repeat DUI offenders in a rural setting and to determine if differences were consistent with those documented for urban DUI offenders. Results suggest that, although rural first time DUI offenders are different from rural repeat offenders, these differences are not as extensive as those found in urban and national samples (Cavaiola, Strohmetz, Wolf, & Lavender, 2003; C'de Baca et al., 2001; Hunter et al., 2006; Royal, 2000). Because the sample was drawn from a rural region of Kentucky where residents are primarily White, undereducated, and impoverished, it was expected that few demographic differences would be found, despite earlier urban studies indicating significant demographic differences between first time and repeat DUI offenders (Cavaiola et al., 2003; C'de Baca et al., 2001; Hunter et al., 2006; Nochajski & Stasiewicz, 2006; Wiczorek & Nochajski, 2005). Although demographic similarities were anticipated, the lack of age or gender differences between the two groups of offenders was surprising considering the body of research showing that repeat DUI offenders are more likely to be male (82% vs. 76%; C'de Baca et al., 2001) and significantly older than first time DUI offenders (38.1 vs. 29.6; Cavaiola et al., 2003). The similarity in ages between these two groups of offenders in this study may suggest that there was a short time span between first and second DUI offenses. This lack of variation could also be attributed to the fact that many of these cases were not traditional alcohol-related DUI offenses; the majority (60%) were for drug-involved DUI offenses.

Another noteworthy finding was that offenders did not vary in their mental health histories. For both groups, self-reported rates of lifetime and past year depression and anxiety (>60% lifetime and >45% past year) were appreciably higher than rates found in other DUI samples (2–31% lifetime and 6–23% past year; Freeman, Maxwell, & Davey, 2011; Lapham et al., 2001; Lapham, C'de Baca, McMillan, & Lapidus, 2006; Shaffer et al., 2007). These high rates could be a function of the rural sample, which was drawn from counties with high rates of poverty as well as income and educational attainment below the national average (U.S. Census Bureau, 2011). Past research has indicated that persons with a lower socioeconomic status report higher rates of mental health problems (Muntaner et al., 2004; Sturm & Gresenz, 2002) and are the most likely to have their mental health treatment needs go unmet

(Gamm et al., 2003). The additional barriers to obtaining treatment faced by rural residents could further amplify this unmet treatment need.

The main difference between first time and repeat rural DUI offenders in this sample was substance use patterns. Although alcohol was the most commonly used substance among the sample, results highlight the increasing variety of illicit drugs that rural residents use. It was expected that repeat offenders would be more likely to use methamphetamine and illicit prescription drugs; however, the data only partially supported this hypothesis. Repeat offenders were more likely to have used a variety of prescription drugs, including amphetamines, OxyContin®, and other prescription opiates. They also reported significantly more years of regular use for sedatives, OxyContin®, and other prescription opiates. There were no differences, however, between first time offenders and repeat offenders in regard to methamphetamine use. The overall high prevalence of illicit prescription drug use may be a result of drawing the sample from rural Appalachia, which has been identified in the literature as an area where illicit prescription drug use is rife (Hays, 2004; Inciardi & Goode, 2002). Aside from prescription drugs, repeat offenders indicated longer periods of regular use for alcohol, marijuana, and illegal drugs overall. These findings are consistent with the limited rural DUI offender literature (Webster et al., 2010). Results also indicate that, similar to urban and national samples of repeat DUI offenders (Hedlund & McCart, 2002; Wieczorek & Nochajski, 2005), rural repeat DUI offenders have more extensive substance use histories than first time offenders.

Although rural repeat offenders, as expected, had more extensive drug use histories than first time offenders, both groups of rural DUI offenders had high rates alcohol use and had higher rates of illicit drug use than existing urban and national samples of DUI offenders. In this rural sample, the rate of lifetime and past year illicit drug use was considerably higher (>80% lifetime and 62% past year) than existing studies have found among non-rural DUI offenders (50% to 75% lifetime; Lapham, C'de Baca, Chang, Hunt, & Berger, 2002; Maruschak, 1999). As previously mentioned, these high rates of drug use among rural DUI offenders is indicative of the increasing rates of illicit drug use among rural populations (Hutchison & Blakely, 2006; Leukefeld et al., 2002; Mink et al., 2005; Simons et al., 2005; Tunnell, 2005).

In addition to substance use findings, results indicate variation in rural DUI offenders' past criminal behaviors. The hypothesis that repeat DUI offenders would report higher rates of criminal behavior received some support. Repeat offenders began committing crimes at an earlier age and came into contact with the criminal justice system more frequently than first time offenders, reporting a greater number of lifetime non-DUI arrests and significantly more time incarcerated. Repeat offenders also committed more non-DUI crimes (regardless of arrest) than first time offenders. Although repeat DUI offenders had more extensive criminal backgrounds, they were more likely to report having committed non-violent, drug and property-type crimes. Specifically, repeat DUI offenders had higher rates of forgery and drug possession than first time offenders. This finding supports previous research that has identified DUI offenders to be largely non-violent (LaBrie et al., 2007). Results are also consistent with past studies that have found repeat DUI offender status to be associated with more extensive criminal histories (McMillen et al., 1992; Wieczorek & Nochajski, 2005).

Implications

Results from the current study have a number of implications for both treatment providers and the criminal justice system. First, the high rates of illegal drug and alcohol use in both groups of rural DUI offenders indicate a potentially greater need for substance use treatment in rural DUI populations than urban DUI populations. However, compared to first time offenders, repeat rural DUI offenders appear to have even more extensive drug use histories, which may be indicative of more severe substance use problems among repeat offenders. If left untreated, continued impaired driving by both first time and repeat rural DUI offenders will likely persist. This raises concern since existing studies have found that individuals experiencing substance abuse problems in rural areas often remain untreated because of the limited access to treatment in rural communities (Booth et al., 2000; Fortney et al., 1995; Fortney & Booth, 2001; Sexton et al., 2008) coupled with a distrust of formal agencies (Sexton et al., 2008). It is important for treatment providers in rural communities to consider the barriers that rural residents face when seeking treatment, such as transportation and poor economic conditions.

Furthermore, results also suggest that both groups of rural DUI offenders exhibit a range of mental health problems and, compared to their urban counterparts, have overall higher rates of mental health problems. However, less than half (<45%) have ever received any type of formal treatment. Rural offenders should be assessed for mental health problems in addition to substance abuse problems. Rural treatment providers should tailor treatment programs to address all underlying problems, both substance- and non-substance-related.

Finally, a recent report issued by SAMHSA (2012b) showed that rural substance abuse treatment referrals are significantly more likely to come from the criminal justice system than urban treatment referrals. In rural areas where treatment is often limited or absent, the criminal justice system offers a unique window of opportunity for addressing rural offenders' treatment needs. Previous studies have drawn similar conclusions, arguing that the integration of treatment into the criminal justice system makes treatment accessible to individuals who might not otherwise receive it (Knight & Farabee, 2004) and that intervening while offenders are involved in the criminal justice system can also result in fewer problems with treatment compliance (Leukefeld, Staton, Webster, & Smiley McDonald, 2005). Although past research has questioned the effectiveness of court-mandated treatment (Kownacki & Shadish, 1999; Peck et al., 1985; Wells-Parker, 1989), studies have argued that identifying and treating offenders' substance abuse and other underlying problems early in the criminal justice system process, including the use of court-mandated treatment, can potentially reduce recidivism rates (Robertson, Gardner, Xu, & Costello, 2009; Taxman, Cropsey, Young, & Wexler, 2007; Webster et al., 2009a). In this study, evidence of repeat offenders' increased involvement in the criminal justice system underscores the importance of addressing offenders' substance use and mental health treatment needs while under court supervision, particularly in rural areas where treatment options are often limited or absent.

Limitations

Although several significant differences between the two groups of rural DUI offenders were identified, a number of study limitations should be considered. First, the groups were defined by the number of lifetime DUI convictions rather than number of lifetime impaired-driving events. Although this is a limitation, using arrest and/or conviction data is common practice among researchers in this field of study (e.g. Hunter et al., 2006). Second, findings are based on self-report data and while participants were assured confidentiality and consented to participate in this study, it is unknown how truthful they were when discussing their current and past behaviors. Self-report data is also subject to recall bias. However, other studies have indicated that self-report data from drug users and criminal offenders can be reliable and valid (Johnson et al., 2000; Solbergdottir et al., 2004; Thornberry & Krohn, 2000).

Characteristics of the sample provide additional limitations. Participants were recruited from 3 counties in rural Kentucky, which potentially limits the generalizability of study results. Furthermore, the relatively small sample size also may have led significant relationships between first time and repeat DUI offenders to go undetected. There were also missing data, but these data were missing at random. In cases of missing data, pairwise deletion was used to maximize the power of the relatively small sample. In addition, several statistical comparisons were conducted, which could increase the chance of a Type 1 error. These limitations should be considered when interpreting the results of this study.

Despite these limitations, the present study fills an important gap in the literature, drawing attention to rural DUI offenders. Study findings provide new information about the differences between first time and repeat DUI offenders in a rural setting, while also highlighting the increasing substance use rates in rural populations. The high rates of illicit drug use among repeat DUI offenders in this sample suggest that having multiple DUI arrests and/or convictions may be indicative of more serious underlying substance use problems and may signal higher levels of criminal behavior in rural DUI offenders. Finally, although this study offers insight into repeat DUI offenders in rural areas, this increasingly common public health issue remains largely unexplored. Future research should continue to examine rural DUI offenders in order to develop a better understanding of this group and strategies to prevent further impaired driving.

Acknowledgments

This study was supported by Grant R03AA015964 from the National Institute on Alcohol Abuse and Alcoholism; J. Matthew Webster, Principal Investigator; and by the staff and resources of the Center on Drug and Alcohol Research at the University of Kentucky. Opinions expressed are those of the authors and do not represent the position of the NIAAA.

References

Booth BM, Kirchner J, Fortney J, Ross R, Rost K. Rural at-risk drinkers: correlates and one-year use of alcoholism treatment services. *Journal of Studies on Alcohol*. 2000; 61(2):267–277. [PubMed: 10757138]

- Borders TF, Booth BM. Rural, suburban, and urban variations in alcohol consumption in the United States: Findings from the National Epidemiologic Survey on Alcohol and Related Conditions. *The Journal of Rural Health*. 2007; 23(4):314–321. [PubMed: 17868238]
- Caetano R, McGrath C. Driving under the influence among U.S. ethnic groups. *Accident Analysis and Prevention*. 2005; 37:217–224. [PubMed: 15667807]
- Cavaiola AA, Strohmetz DB, Wolf JM, Lavender NJ. Comparison of DWI offenders with non-DWI individuals on the MMPI-2 and the Michigan Alcoholism Screening Test. *Addictive Behaviors*. 2003; 28:971–977. [PubMed: 12788269]
- C’de Baca J, Miller WR, Lapham S. A multiple risk factor approach for predicting DWI recidivism. *Journal of Substance Abuse Treatment*. 2001; 21:207–215. [PubMed: 11777670]
- Federal Bureau of Investigation. [Accessed January 30, 2013] Crime in the United States, 2011. 2012. Available from <http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2011/crime-in-the-u.s.-2011>.
- Fortney JC, Booth BM. Access to substance abuse services in rural areas. *Alcoholism*. 2001; 15(2): 177–197.
- Fortney JC, Booth BM, Blow FC, Bunn JY, Loveland Cook CA. The effects of travel barriers and age on the utilization of alcoholism treatment aftercare. *American Journal of Drug and Alcohol Abuse*. 1995; 21(3):391–406. [PubMed: 7484987]
- Freeman, James E.; Maxwell, Jane C.; Davey, Jeremy D. Unraveling the complexity of driving while intoxicated: a study into the prevalence of psychiatric and substance abuse comorbidity. *Accident Analysis and Prevention*. 2011; 43(1):34–39. [PubMed: 21094294]
- Gamm, L.; Stone, S.; Pittman, S. Rural Healthy People 2010: A Companion Document to Healthy People 2010. Vol. 1. College Station, TX: The Texas A&M University System Health Science Center, School of Rural Public Health, Southwest Rural Health Research Center; 2003. Mental health and mental disorders—A rural challenge; p. 165-185.
- Hays LR. A profile of OxyContin addiction. *The Journal of Addictive Diseases*. 2004; 23:1–9. [PubMed: 15339710]
- Hedlund, JH.; McCart, AT. Drunk driving: Seeking additional solutions. Trumbull, CT: Preusser Research Group; 2002.
- Hunter SB, Wong E, Beighley CM, Morral AR. Acculturation and driving under the influence: A study of repeat offenders. *Journal of Studies on Alcohol*. 2006; 67:458–464. [PubMed: 16608157]
- Hutchison, L.; Blakely, C. Rural Healthy People 2010: A Companion Document to Healthy People 2010. Vol. 2. College Station, TX: The Texas A&M University System Health Science Center, School of Rural Public Health, Southwest Rural Health Research Center; 2003. Substance abuse—Trends in rural areas: A literature review; p. 145-154.
- Inciardi JA, Goode JL. Miracle medicine or problem drug? OxyContin and prescription drug abuse. *Consumers’ Research*. 2003 Jul 17–21.
- Johnson M, Fisher D, Montoya I, Booth R, Rhodes F, Andersen M, Zhangqing Z, Williams M. Reliability and validity of not-in-treatment drug users’ follow-up self-reports. *AIDS & Behavior*. 2000; 4(4):373–380.
- Knight, K.; Farabee, D., editors. Treating Addicted Offenders: A Continuum of Effective Practices. Kingston, NJ: Civic Research Institute; 2004.
- Kownacki RJ, Shadish WR. Does Alcoholics Anonymous work? The results from a meta-analysis of controlled experiments. *Substance Use & Misuse*. 1999; 34:1897–1916. [PubMed: 10540977]
- LaBrie RA, Kidman RC, Albanese M, Peller AJ, Shaffer HJ. Criminality and continued DUI offense: Criminal typologies and recidivism among repeat offenders. *Behavioral Sciences & the Law*. 2007; 25(4):603–314. [PubMed: 17620272]
- Lambert D, Gale JA, Hartley D. Substance abuse by youth and young adults in rural America. *The Journal of Rural Health*. 2008; 24(3):221–228. [PubMed: 18643798]
- Lapham SC, C’de Baca J, Chang I, Hunt WC, Berger LR. Are drunk-driving offenders referred for screening accurately reporting their drug use? *Drug and Alcohol Dependency*. 2002; 66:243–253.
- Lapham SC, C’de Baca J, McMillan GP, Lapidus J. Psychiatric disorders in a sample of repeat impaired-driving offenders. *Journal of Studies on Alcohol*. 2006; 67(5):707–713. [PubMed: 16847539]

- Lapham SC, Smith E, C' de Baca J, Chang I, Skipper BJ, Baum G, Hunt WC. Prevalence of psychiatric disorders among persons convicted of driving while impaired. *Archives of General Psychiatry*. 2001; 58(10):943–949. [PubMed: 11576032]
- Leukefeld C, Narevic E, Hiller M, Staton M, Logan T, Gillespie W, Webster JM, Garrity TF, Purvis R. Alcohol and drug use among rural and urban incarcerated substance abusers. *International Journal of Offender Therapy and Comparative Criminology*. 2002; 46(6):715–728. [PubMed: 12491847]
- Leukefeld, C.; Staton, M.; Webster, JM.; Smiley McDonald, H. Treatment of patients under legal restrictions. In: Strain, EC.; Stitzer, ML., editors. *The treatment of opioid dependence*. Baltimore, MD: Johns Hopkins University Press; 2005. p. 485-496.
- Maruschak, LM. Bureau of Justice Statistics Special Report. U.S. Department of Justice, Office of Justice Program, Bureau of Justice Statistics; 1999. *DWI Offenders under Correctional Supervision*. NCJ 172212.
- McLellan AT, Kushner H, Metzger D, Peters F, Smith I, Grissom G, Pettinati H, Argeriou M. The fifth edition of the Addiction Severity Index. *Journal of Substance Abuse Treatment*. 1992; 9:199–213. [PubMed: 1334156]
- McMillen DL, Adams MS, Wells-Parker E, Pang MG, Anderson BJ. Personality traits and behaviors of alcohol-impaired drivers: A comparison of first and multiple offenders. *Addictive Behaviors*. 1992; 17:407–414. [PubMed: 1442235]
- Mink, M.; Moore, C.; Johnson, A.; Probst, J.; Martin, A. *Violence and rural teens*. Rockville, MD: South Carolina Rural Health Research Center; 2005.
- Muntaner C, Eaton WW, Miech R, O'Campo P. Socioeconomic position and major mental health disorders. *Epidemiologic Reviews*. 2004; 26(1):53–62. [PubMed: 15234947]
- National Center on Addiction and Substance Abuse (CASA) at Columbia University. *No place to hide: Substance abuse in mid-size cities and rural America*. New York: Columbia University; 2000.
- National Highway Traffic Safety Administration. [Retrieved January 7, 2011] *Traffic safety facts: Repeat intoxicated driver laws*. 2004. from <http://www.nhtsa.gov/people/injury/new-fact-sheet03/RepeatIntoxicated.pdf>.
- National Highway Traffic Safety Administration. [Retrieved January 3, 2011] *Traffic safety facts: 2008 traffic safety annual assessment highlights*. 2009. from <http://www-nrd.nhtsa.dot.gov/pubs/811172.pdf>.
- National Highway Traffic Safety Administration. [Retrieved March 25, 2011] *Traffic Safety Facts: Drug Involvement of Fatally Injured Drivers*. 2010a. from <http://www-nrd.nhtsa.dot.gov/Pubs/811415.pdf>
- National Highway Traffic Safety Administration. [Retrieved March 2, 2011] *Traffic safety facts: Alcohol-impaired driving 2009*. 2010b. from <http://www-nrd.nhtsa.dot.gov/Pubs/811385.pdf>.
- Nochajski TH, Stasiewicz PR. Relapse to driving under the influence (DUI): A review. *Clinical Psychology Review*. 2006; 26:179–195. [PubMed: 16364523]
- Peck RC, Sadler DD, Perrine MW. The comparative effectiveness of alcohol rehabilitation and licensing control actions for drunk driving offenders: A review of the literature. *Alcohol, Drugs, and Driving*. 1985; 1:15–39.
- Robertson AA, Gardner S, Xu XH, Costello H. The impact of remedial intervention on 3-year recidivism among first-time DUI offenders in Mississippi. *Accident Analysis and Prevention*. 2009; 41(5):1080–1086. [PubMed: 19664449]
- Royal, D. *Racial and ethnic group comparisons: National surveys of drinking and driving: Attitudes and behaviors—1993, 1995, and 1997*. Vol. 1. Washington, D.C.: National Highway Traffic Safety Administration; 2000.
- Royal, D. *Summary report: National survey of drinking and driving attitudes and behavior*. Vol. 1. Washington, D.C.: National Highway Traffic Safety Administration; 2003.
- Sexton RL, Carlson RG, Leukefeld CG, Booth BM. Barriers to formal drug abuse treatment in the rural south: A preliminary ethnographic assessment. *Journal of Psychoactive Drugs*. 2008; 40(2): 121–129. [PubMed: 18720660]
- Shaffer HJ, Nelson SE, LaPlante DA, LaBrie RA, Albanese M. The epidemiology of psychiatric disorders among repeat DUI offenders accepting a treatment-sentencing option. *Journal of Consulting and Clinical Psychology*. 2007; 75(5):795–804. [PubMed: 17907861]

- Simons JS, Oliver MNI, Gaher RM, Ebel G, Brummels P. Methamphetamine and alcohol abuse and dependence symptoms: Associations with affect liability and impulsivity in a rural treatment population. *Addictive Behaviors*. 2005; 30(7):1370–1381. [PubMed: 16022933]
- Solbergdottir E, Bjornsson G, Gudmundsson L, Tyrfinngsson T, Kristinnsson J. Validity of self-reports and drug use among young people seeking treatment for substance abuse or dependence. *Journal of Addictive Diseases*. 2004; 23(1):29–38. [PubMed: 15077838]
- Sturm R, Gresenz CR. Relations of income inequality and family income to chronic medical conditions and mental health disorders: National survey in USA. *British Medical Journal*. 2002; 324:20–24. [PubMed: 11777799]
- Substance Abuse and Mental Health Services Administration. [Accessed December 18, 2012] Results from the 2011 National Survey on Drug Use and Health: National findings. 2012a. Available from <http://www.samhsa.gov/data/NSDUH/2k11Results/NSDUHresults2011.htm>.
- Substance Abuse and Mental Health Services Administration. A comparison of rural and urban substance abuse treatment admissions. 2012b. Available from http://www.samhsa.gov/data/2k12/TEDS_043/TEDSShortReport043UrbanRuralAdmissions2012.pdf.
- Taxman FS, Cropsey KL, Young DW, Wexler H. Screening, assessment, and referral practices in correctional settings: a national perspective. *Criminal Justice and Behavior*. 2007; 34(9):1216–1234. [PubMed: 18458758]
- Thornberry, TP.; Krohn, MD. The self-report method for measuring delinquency and crime. In: Dufee, David, editor. *Measurement and analysis of crime and justice: Criminal justice 2000*. Vol. 4. Washington, DC: U.S. Department of Justice; 2000. p. 33-84.
- Tunnell KD. The OxyContin epidemic and crime panic in rural Kentucky. *Contemporary Drug Problems*. 2005; 32(2):225–258.
- U.S. Census Bureau. [Retrieved January 25, 2011] State & county quickfacts: Floyd, Johnson, and Pike County, Kentucky. 2011. from <http://quickfacts.census.gov>.
- Van Gundy, K. *Reports on Rural America*. Vol. 1. Durham, NH: The Carsey Institute, University of New Hampshire; 2006. Substance Abuse in Rural and Small Town America.
- Webster JM, Dickson MF, Duvall JL, Clark DB. Rural and urban differences in Kentucky DUI offenders. *Journal of Addiction Medicine*. 2010; 4(3):186–190. [PubMed: 21769034]
- Webster JM, Oser CB, Mateyoke-Scriver A, Cline VD, Havens JR, Leukefeld CG. Drug use and criminal activity among rural probationers with DUI histories. *International Journal of Offender Therapy and Comparative Criminology*. 2009a; 53(6):717–730. [PubMed: 18940930]
- Webster JM, Pimental JH, Harp KLH, Clark DB, Staton-Tindall M. Substance abuse problem severity among rural and urban female DUI offenders. *The American Journal of Drug and Alcohol Abuse*. 2009b; 35(1):24–27. [PubMed: 19152202]
- Wells-Parker E, Anderson BJ, McMillen DL, Landrum JW. Interactions among DUI offender characteristics and traditional intervention modalities: A long-term recidivism follow-up. *British Journal of Addiction*. 1989; 84:381–390. [PubMed: 2720190]
- Wieczorek, WF.; Nochajski, TH. Characteristics of persistent drinking drivers: Comparisons of first, second, and multiple offenders. In: Hennessey, DA.; Wiesenthal, DL., editors. *Contemporary Issues in Road User Behavior and Traffic Safety*. Hauppauge, NY: Nova Science; 2005. p. 153-166.

TABLE 1

Substance Use History by Offender Type ($N = 117$)

	First Time DUI Offenders ($n = 56$)	Repeat DUI Offenders ($n = 61$)
Alcohol		
% ever used	96.4	100.0
Age of first use ^{***}	16.1	13.4
% used in the past year	69.6	85.2
Years used regularly ^{***}	4.9	11.1
Marijuana		
% ever used [*]	73.2	90.2
Age of first use	15.6	14.8
% used in the past year	35.7	52.5
Years used regularly [*]	5.2	9.2
Powder Cocaine		
% ever used ^{**}	35.7	63.9
Age of first use	19.9	21.7
% used in the past year	7.1	11.5
Years used regularly	0.3	0.5
Crack Cocaine		
% ever used [*]	19.6	41.0
Age of first use	21.8	24.0
% used in the past year	3.6	8.2
Years used regularly	0.2	0.4
Inhalants		
% ever used	5.4	13.1
Age of first use	15.3	11.9
% used in the past year	1.8	1.6
Years used regularly	0.0	0.1
Hallucinogens		
% ever used ^{**}	21.4	44.3
Age of first use	18.8	18.3
% used in the past year	3.6	0.0
Years used regularly	0.3	0.3
Methamphetamine		
% ever used	10.7	23.0
Age of first use	21.5	25.2
% used in the past year	1.8	4.9
Years used regularly	0.0	0.4
Amphetamines		
% ever used ^{**}	10.7	34.4

	First Time DUI Offenders (n = 56)	Repeat DUI Offenders (n = 61)
Age of first use	16.0	19.5
% used in the past year *	1.8	13.1
Years used regularly	0.2	0.9
Sedatives, Tranquilizers, Barbiturates		
% ever used	53.6	65.6
Age of first use	25.0	21.6
% used in the past year	50.0	50.8
Years used regularly *	1.5	3.4
Methadone		
% ever used ***	25.0	54.1
Age of first use	23.1	26.9
% used in the past year	12.5	25.0
Years used regularly	0.2	0.9
OxyContin®		
% ever used **	26.8	50.8
Age of first use	24.6	25.2
% used in the past year	16.1	29.5
Years used regularly **	0.4	1.8
Other Non-prescribed Opiates/Analgesics		
% ever used **	39.3	62.3
Age of first use	21.2	23.1
% used in the past year *	25.0	45.0
Years used regularly ***	0.9	3.0
Any Drug		
% ever used ***	80.4	98.4
Age of first drug use	16.5	15.6
% used any drugs in the past year *	62.5	82.0
Years used illegal drugs regularly **	5.8	11.0

* p .05;

** p .01;

*** p .001

TABLE 2

Criminal History by Offender Type ($N = 117$)

	First Time DUI Offenders ($n = 56$)	Repeat DUI Offenders ($n = 61$)
% ever committed a non-DUI crime**	83.9	98.4
Shoplifting	32.7	47.5
Burglary*	3.6	14.8
Auto Theft	3.6	9.8
Forgery**	1.8	16.4
Theft/larceny	1.8	4.9
Drug trafficking	17.9	32.8
Drug possession***	75.0	96.7
Stolen goods	5.4	14.8
Vandalism	12.5	11.5
Robbery	1.8	4.9
Assault	30.4	36.1
Weapon possession	3.86	8.2
Age first committed a crime (regardless of arrest)**	17.3	13.3
# of lifetime arrests (non-DUI)***	0.9	5.1
% incarcerated as a juvenile (after conviction)	12.5	18.0
% incarcerated as an adult (after conviction)***	30.4	65.6
Total months served after a conviction as an adult**	0.6	7.8

*
 $p < .05$;**
 $p < .01$;***
 $p < .001$