Rural and Urban Differences in Kentucky DUI Offenders
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Introduction
Recent national data suggests that the prevalence of driver under the influence (DUI) is higher in rural areas than in more urbanized areas of the United States (Federal Bureau of Investigation, 2006). Despite these higher DUI arrest rates, few studies have examined DUI offenders in rural areas (Chou et al., 2006). This is a significant gap in the DUI literature in that rural areas have been shown to be increasingly less protected from alcohol and drug problems (Schoeneberger, Leukefeld, Hiller, & Godlaski, 2006).

Because rurality has been seen as a protective factor against substance abuse problems, the majority of past research has focused on the urban substance-abusing populations, but a growing body of literature has examined the alcohol consumption patterns in rural areas and in relation to drinking patterns in urban areas of the United States. Booth, Ross, and Rost (1999) found that residents in rural areas were less likely to drink alcohol than those in more populated areas; however, few differences have been found between rural and urban drinkers (Booth et al, 2000). Leukefeld and colleagues (2002) also found few differences in rural and urban alcohol drinking patterns among a sample of prisoners. These findings are consistent with recent national epidemiologic data. For example, the 2005 National Survey on Drug Use and Health (NSDUH) found similar prevalence of binge drinking (22.3% vs. 22.1%) and similar rates of heavy alcohol use (6.1 vs. 6.7) when comparing large metropolitan areas to non-metropolitan areas of the United States (Office of Applied Studies, 2006).

Several studies have also examined rural and urban differences in drug use. Although drug abuse has been considered largely an urban problem, drug use rates have been shown to be comparable in rural and urban areas (Donnermeyer, 1992; Leukefeld, Clayton, Myers, 1992). For example, the 2005 NSDUH found only slightly higher rates of current drug use in large metropolitan areas (8.4%) as compared to non-metropolitan areas (6.9%) (Office of Applied Studies, 2006). Although rates of overall use are similar, rural/urban differences in drugs of choice have been established (Cronk & Sarvela, 1997; Leukefeld et al., 2002) and the consequences of alcohol and drug use in non-metropolitan areas may be more severe because substance abuse treatment services are not readily available (Hutchinson & Blakely, 2003).

Given these emerging similarities between rural and urban substance abusers, the present study was conducted to examine whether rural and urban DUI offenders are also similar. Consistent with the reviewed literature, it was predicted that few differences would be found between rural and urban DUI offenders.

Method
The present study examined a total of 21,025 substance abuse assessment records for persons convicted of DUI in Kentucky and who concluded substance abuse education or treatment in 2005. Kentucky law requires drivers licensed in Kentucky who are convicted of DUI to receive an assessment within 10 days by a state certified DUI assessor in a state licensed and certified DUI assessment program. The purpose of the assessment is to determine the extent of a person’s problems with drug and alcohol and then to determine the appropriate level of care needed to
address these problems. If treatment need is determined, a person can be referred to one or more of the following modalities: outpatient, intensive outpatient, or residential treatment. Referral may also include an education intervention or an education intervention coupled with treatment. DUI assessment records provide demographic information about the DUI offender, results of the assessment, and substance abuse education/treatment information. Demographic information available for analysis includes age, gender, DUI conviction history, blood alcohol concentration, and county of DUI conviction. In addition, records include three assessment instruments: the Alcohol Use Disorders Identification Test (Babor, De La Fuente, Saunders et al., 2001), the Drug Abuse Screening Test (Skinner, 1982), and the DSM-IV-TR (American Psychiatric Association, 2000) checklist.

The Alcohol Use Disorders Identification Test (AUDIT) was developed by the World Health Organization as a screening method for excessive drinking. The test consists of 10 questions scored from 0 to 4. A combined score of 8 or more is considered as positive (i.e., the individual has a drinking problem). The Drug Abuse Screening Test (DAST) was developed to assess the presence of a drug problem. The test consists of 28 true/false questions with a score of 1 or 0. A combined score of 5 or more is considered as positive (i.e., the individual has a drug problem). The Diagnostic and Statistical Manual, Fourth Edition, Text Revision (DSM-IV-TR) was developed by the American Psychiatric Association as a standard for psychiatric diagnoses. For purposes of the present research, a person who met at least three of the seven dependence criteria within their lifetime was considered to be substance dependent, and a person who met at least one of the four abuse criteria within their lifetime was considered to meet criteria for substance abuse.

Finally, information about the substance abuse education and/or treatment referral is noted. This includes the education and/or level(s) of treatment to which the person is referred, as well as whether the DUI offender successfully completed their recommended education and/or treatment.

The average age of the DUI offenders in the sample was 34.0 years and the majority of assessment records were for males (80.9%). Almost one-fourth of the records were for persons with multiple DUI convictions in the previous five years (23.1%). The average AUDIT score was 7.4, the average DAST score was 5.0, and the average blood alcohol concentration for those who reported one was 0.14 g/dL. Fifty-three percent of the assessment records included a substance abuse treatment referral. Thirty-two percent of the assessment records were for persons who met DSM-IV-TR substance abuse criteria in their lifetime and 15% of the records were for those who met DSM-IV-TR substance dependence criteria.

Analytic Plan

Four groups based on Rural-Urban Continuum Codes, commonly referred to as Beale Codes, were created to examine differences in DUI offender characteristics across levels of rural and urban. Beale Codes range from 1 to 9 and are assigned to counties based on their population and proximity to metropolitan areas (United States Department of Agriculture Economic Research Service, 2004). A larger Beale Code indicates a higher degree of rurality. Beale Codes were determined for all assessment records based on the county in which the offender was convicted of DUI. Then, the nine codes were collapsed into four groups for purposes of the present study. Beale Codes 1 through 3 were combined to form a metropolitan county category (n = 10,625 assessment records); Beale Codes 4 and 5 were combined to represent urban counties with populations greater than 20,000 (n = 1,335 assessment records); Beale Codes 6 and 7 were
combined to represent urban counties with populations less than 20,000 (n = 5,313 assessment records); and Beale Codes 8 and 9 were combined to form a rural category for counties with a population of less than 2,500 (n = 1,823 assessment records).

Data were analyzed using SPSS v15 statistical software. Analysis of variance and chi-square tests analyses were used to examine the relation between rurality and DUI offender characteristics including age; gender; blood alcohol concentration; AUDIT and DAST screening instrument results; DSM-IV-TR substance use disorder criteria; and the percentage of multiple DUI offenders, offenders referred to substance abuse treatment, and of offenders compliant with their substance abuse education or treatment referral. Given the large sample size, a more conservative level of statistical significance was used (p < .001).

Results

Analyses revealed both similarities and differences in DUI demographic characteristics across the four groups. While age and blood alcohol concentration were similar across the four groups, significant differences were found for the percentage of male DUI offenders and multiple offenders. Specifically, as shown in Table 1, the percentage of male DUI offenders increased as the county type went from a large population (metropolitan) to a small population (rural). This general pattern was also noted for the percentage of assessments that were conducted for persons with previous DUI convictions.

Significant differences were also found for the screening instruments. AUDIT scores were highest among the metropolitan and rural groups but significantly lower in the two urban groups. DAST scores, on the other hand, increased across categories from a low of 4.4 in metropolitan counties to 6.4 in rural counties. Similarly, the percentage of positive AUDIT scores (8+) was largest in the metropolitan and rural counties, whereas the percentage of positive DAST scores (5+) was lowest in the metropolitan counties and highest in the rural counties. While rural DUI offenders had slightly higher rates of DSM-IV-TR substance abuse compared to the other groups, the differences were more pronounced for DSM-IV-TR substance dependence. The two less populated county types had twice the percentage of DUI offenders who met substance dependence in their lifetime than did the two more populated county types.

The differences in the screening instruments were reflected in the types of referrals DUI offenders received. Whereas only half of DUI offenders convicted in metropolitan counties were referred to some type of treatment intervention, two-thirds of rural DUI offenders received a
treatment referral rather than a referral to only a substance abuse education program. Finally, rural DUI offenders were found to have significantly lower compliance rates than those in the two more populated county types.

**Discussion**

It was expected that few differences would be found between rural and urban DUI offenders. However, results from this study suggest that problem severity among DUI offenders may be greater in rural areas. Analysis of DUI offender characteristics revealed a general pattern such that problem severity increased as the population of the county type decreased. The majority of rural DUI offenders are referred to some type of treatment as a result of their DUI assessment, yet the availability of substance abuse treatment is scarce in many rural areas. Perhaps this, coupled with problem severity, helps explain why there are higher rates of multiple offenders and lower compliance rates in the less populated areas of Kentucky. Study findings also suggest that drug problems may be more prevalent among DUI offenders in rural areas which highlights the need for careful, thorough assessment of both drug and alcohol problems for DUI offenders. Although alcohol use may have led to the DUI arrest, treating only alcohol problems in clients who enter treatment as a result of DUI may miss an important, and in some cases the primary, component of their substance abuse problem. Failing to appropriately address problems with illicit drugs in DUI offenders could put clients at greater risk for continued impaired driving.

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**References**


