

A PROFILE OF ADOLESCENT ALCOHOL OFFENDERS IN TWO RURAL MIDWESTERN COUNTIES¹

JAMES R. NEVITT, JOEL LUNDAK, AND GREG GALARDI

Peru State College

Summary.—Screening tools specifically developed for use with adolescents may be more sensitive predictors of relapse or recidivism than self-report inventories typically used to screen adults. 70 adolescents in a program for drunk drivers in two counties in southeastern Nebraska were given both the CRAFFT and the Alcohol Use Disorder Identification Test questionnaires during routine alcohol-dependency evaluations. The Michigan Alcoholism Screening Test was also given to 28 subjects selected at random. 11 boys and 6 girls did not successfully complete the program. Significant correlations obtained for AUDIT scores for both the CRAFFT ($r_{69} = .65, p < .01$) and failure to complete diversion ($r_{69} = .23, p < .05$). Subjects were grouped by age (18 and younger and over 18 years) and by sex. A 2×2 analysis of variance for scores on the AUDIT indicated significant main effects for both age ($F_{1,66} = 4.86, p < .05$) and sex ($F_{1,66} = 5.96, p < .01$). MAST and CRAFFT scores showed no age or sex differences. The AUDIT might be included in drug and alcohol assessments with similar samples of adolescents.

Alcohol use is the third leading cause of preventable death in the United States (McGinnis & Foege, 1993). Alcohol abuse and alcoholism have been estimated to affect approximately 7% of the U.S. population (Grant, Harford, Dawson, Chou, DuFour, & Pickering, 1994). Alcohol abuse in young adults and adolescents is a common problem in both college and primary care settings (Fielin, Reid, & O'Connor, 2000). Often physicians and college professionals' recognition of alcohol dependence in this population is low (Kitchens, 1994) so many professional organizations recommend questioning clients about alcohol use (Steinbauer, Cantor, Holzer, & Volk, 1998).

While asking clients about the quantity and frequency of alcohol use is an essential component of assessing drinking problems, it is not sufficiently sensitive or specific for screening. In one study, drinking 12 or more drinks a week was insensitive for 50% of all patients meeting DSM-IV criteria (American Psychiatric Association, 1994) for an active drinking disorder (Buchsbaum, Welsh, & Buchanan, 1995). The reliability of patient self-report is highly variable and depends on the patient, the clinician, and individual circumstances (Maisto, Connors, & Allen, 1995). Heavy drinkers may underestimate the amount they drink if they deny, are forgetful, or fear the consequences of being diagnosed with a drinking problem.

¹Address correspondence to James R. Nevitt, Ph.D., P.O. Box 317, Peru, NE 68421 or e-mail (jnevitt@oakmail.peru.edu).

There is uncertainty regarding the usefulness of some types of client data received during drug and alcohol evaluations and screenings for predicting early success in treatment or later potential for relapse (Shakeshaft, Bowman, & Sanson-Fischer, 1999). Accurately assessing patients for drinking problems during the routine clinical encounter is difficult. The diagnostic standard for alcohol dependence or abuse, the DSM-IV, requires a detailed interview which often is not feasible in a routine screening.

During routine evaluations for alcohol dependency, the Michigan Alcohol Screening Test (MAST) has been widely used and accepted as useful in making diagnostic decisions about adult clients (Conigrave, Saunders, & Whitfield, 1995). However, method used (Williams, Aitken, & Malin, 1985) or context of questions (Schwartz, 1999) may influence self-reported answers. Selzer (1971) found the 25-question Michigan Alcoholism Screening Test is relatively sensitive and specific for DSM-diagnosed alcohol abuse or dependence but it is too lengthy for routine screening. Maiesto, *et al.* (1995) reviewed research involving direct contrasts of self-report screening measures for alcohol problems in a variety of settings. The conclusions indicated the MAST was less sensitive with elderly primary care patients. In comparing the Alcohol Use Disorder Identification Test (AUDIT), CAGE, and MAST, Clements (1998) reported better identification of current alcohol dependence by the AUDIT among undergraduate students.

Use of self-report inventories may also encourage professionals to ignore other useful types of data. Indeed, Jin, Rourke, Patterson, Taylor, and Grant (1998) stated that information such as previous citations for DWI were as strong a predictor of relapse in long-term abstinent alcoholics as an elevated Psychopathic deviancy score on the MMPI-2. Nevitt and Lundak (2005) found that self-report inventories such as the MAST and the Structured Clinical Interview for the DSM-IV were of limited use in predicting future DWIs with adult clients.

Such limitations may be related to the length of the inventory or to ethnic, sex, or age bias in a self-report screening test for alcohol use disorders (Steinbauer, *et al.*, 1998). Because younger people of both sexes, particularly college-age individuals, are at higher risk for problems such as "binge" drinking (Wechsler & Isaac, 1992; Engs & Hanson, 1994a) and episodes of violence (Engs & Hanson, 1994b), different screening tools may be more sensitive predictors of relapse or recidivism. The AUDIT questions address intake, dependence, and adverse consequences of drinking and emphasize drinking in the past year and were sensitive to sex or ethnicity (Volk, Steinbauer, Cantor, & Holzer, 1997). It was hypothesized that scores on the AUDIT and the CRAFFT, briefer inventories, would be more likely to correlate positively with attrition of adolescents from a diversion program than scores on the MAST. It was further hypothesized that the AUDIT might be

more sensitive to “differences in age alone” and, if so, perhaps this sensitivity could be exploited to benefit younger clients.

METHOD

Subjects

A study sample of 70 was randomly selected from 100 high school and college-age adolescents in county diversion programs, (one, designated by a judge in lieu of jail) for drunk driving offenders. All subjects had received either an MIP or a DWI offense and so were referred by the county to a professional evaluator between May 2004 and March 2005. The subjects were 45 males and 25 females living in or near two midwestern counties, Otoe, and Nemaha, in southeastern Nebraska. The sample was representative of adolescents already in local diversion programs, with 90% of the sample White and 10% Asian, Hispanic, and African American. The mean age was 17.8 yr. ($SD=1.5$). All subjects were attending either high school or college. The mean years of education was 12.1 ($SD=1.5$). All alcohol dependency evaluations were done by the same professional, who was naïve as to the purpose of the study.

Tests

The Michigan Alcohol Screening Test (MAST) measures multiple dimensions of an individual’s drinking behavior including amount consumed and the social legal consequences related to the pattern of consumption. The 25 questions on the MAST include “Have you ever been in a hospital because of your drinking?” and “Do friends or relatives think you are a normal drinker?”.

The Alcohol Use Disorders Identification Test (AUDIT) is a 10-item self-report screening test developed by the World Health Organization (WHO) to identify clients at risk for alcohol use disorders. The AUDIT incorporates questions about drinking quantity, frequency, and binge behavior along with questions about consequences of drinking. It uses both current, defined as “within the past month”, and lifetime time frames (Conigrave, *et al.*, 1995). Examples of questions include “How often during the last year have you had a feeling of guilt or remorse after drinking?” and “How often do you have six or more drinks on one occasion?”. AUDIT scores can vary from 0 to 40.

The CRAFFT is a 6-item self-report screening test designed to identify adolescents’ alcohol abuse (Knight, Sherritt, Schrier, Harris, & Chang, 2002). The acronym CRAFFT is a mnemonic designed to help primary care physicians remember screening questions they can ask adolescents in the course of a routine visit. Examples of questions on the CRAFFT include: “Do you ever FORGET things you did while using drugs or alcohol?” and

"Did you ever use alcohol or drugs while you were by yourself, ALONE?"". CRAFFT scores can vary from 0 to 6.

Procedure

Self-reported information gathered during a standard alcohol-dependency evaluation was compared to county records obtained with cooperation from the Nemaha and Otoe county Nebraska police and sheriff departments. Of particular interest were correlations between scores on the different self-report inventories and correlations between specific screening tests and whether clients successfully completed the diversion program. Additional relations between scores and demographic data such as age and sex were also examined.

For purposes of statistical analysis of age and sex differences, clients were grouped by age (over or under 18 yr.) and by sex (male and female). A 2 (age) \times 2 (sex) design (Bruning & Kintz, 1987) was used to assess MAST, CRAFFT, and AUDIT scores as well as the completion of diversion program data. It was hypothesized that the AUDIT and CRAFFT would be more sensitive tests to attrition from the diversion program than any associated age or sex differences.

RESULTS

In the present study 25% of all clients, 11 boys and 6 girls, did not complete their programs. Means and standard deviations for scores on the MAST, CRAFFT, and AUDIT by age and sex group are displayed in Table 1.

TABLE 1
MEAN SCORES AND STANDARD DEVIATIONS BY AGE AND SEX
GROUPS ON MAST, AUDIT, AND CRAFFT

Sex	Age					
	Under 18 Years			Over 18 Years		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Male						
MAST	11	2.3	1.9	6	3.8	2.6
AUDIT	28	9.7	5.5	17	14.6	6.2
CRAFFT	28	3.7	1.0	17	3.9	1.7
Female						
MAST	6	2.1	2.1	5	3.0	2.4
AUDIT	14	7.7	4.0	11	9.3	7.5
CRAFFT	14	3.1	1.0	11	3.1	1.9

Neither the Pearson correlation between scores on the MAST and AUDIT ($r_{28} = .26, p > .05$) nor those on MAST and CRAFFT ($r_{28} = .02, p > .05$) was significant. However, scores on the CRAFFT were positively and substantially correlated with AUDIT scores ($r_{70} = .65, p < .01$). The AUDIT was

the only self-report inventory that correlated significantly with failure to complete the program ($r_{70} = .23, p < .05$).

A 2×2 analysis of variance applied to AUDIT scores gave significant main effects for age ($F_{1,66} = 4.86, p < .05$) and sex ($F_{1,66} = 5.96, p < .01$) but not their interaction ($F_{1,66} = 1.29, p > .05$). Analysis of MAST scores for age ($F_{1,24} = 1.70, p > .05$), sex ($F_{1,24} = 0.30, p > .05$), and their interaction ($F_{1,24} = 0.10, p > .05$) indicated no such differences. An analysis of CRAFFT scores also yielded no significant differences for age ($F_{1,66} = 0.13, p > .05$), sex ($F_{1,66} = 3.16, p > .05$), or their interaction ($F_{1,66} = 0.06, p > .05$).

DISCUSSION

During routine evaluations for alcohol dependency, self-report inventories such as the MAST have been widely used and accepted as useful in making diagnostic decisions (Selzer, 1971). It may be advisable in light of the results of this and other studies (Kamerow, 1995; Knight, *et al.*, 2002) to restrict use of the MAST to adults, use the brief version of the MAST (Pokorny, Miller, & Kaplan, 1972) or use the MAST along with another brief screening tool. Research has suggested that a few key items alone might be used to detect clients "at risk" (Gordon, Maisto, McNeil, Kraemer, Conigliaro, Kelley, & Conigliaro, 2001).

With respect to the hypothesis, scores on the MAST scores were not as useful in providing information relating to later success or failure in the diversion program. The sensitivity of the AUDIT to client attrition may be related to the inclusion of both consumption-based indicators of alcohol problems and indicators of harmful use and dependence or its "current" and "lifetime" question frames (Conigrave, *et al.*, 1995). While the MAST may be of limited use in assessing drinking in young drivers, the CRAFFT and the AUDIT show some promise. Of the two, the AUDIT might be the better choice for inclusion in assessment of adolescent samples similar to the one tested in this study.

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