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Short Communication

Comparison of DWI offenders with non-DWI individuals on the MMPI-2 and the Michigan Alcoholism Screening Test

Alan A. Cavaiola[a,*], David B. Strohmetz[a], Jamie M. Wolf[a], Neil J. Lavender[b]

[a]*Psychology Department, Monmouth University, West Long Branch, NJ 07764, USA*
[b]*Ocean County Community College, Toms River, NJ, USA*

Abstract

Two groups of driving-while-intoxicated (DWI) offenders with either one DWI offense or with repeat offenses were compared to a group of nonoffenders using the Minnesota Multiphasic Personality Inventory (MMPI-2) and the Michigan Alcoholism Screening Test (MAST). Demographic information was also collected regarding their prior legal history, family history, and blood alcohol level at the time of the DWI arrest. The results indicated both DWI groups had scored significantly higher than the comparison group on the K, Psychopathic Deviate (Pd) Scale, Over-Controlled Hostility (O-H) Scale, and MacAndrews Alcoholism Scale—Revised (MAC-R). The first offenders and multiple offenders did not differ significantly from one another. On the MAST, both DWI offender groups scored significantly higher than the nonoffenders. This time, however, the multiple offenders scored significantly higher than the first-offender group. Unexpectedly, the first offenders and multiple offenders did not differ with regards to blood alcohol level at the time of arrest. There were no significant differences noted with regard to prior legal history or family history of alcoholism for all three groups. These results are discussed with regard to assessment implications.

Keywords: Alcohol; Driving while intoxicated

* Corresponding author. Tel.: +1-732-571-3447; fax: +1-732-263-5159.
E-mail address: acavaiol@monmouth.edu (A.A. Cavaiola).

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1. Introduction

Approximately every 32 min, someone in the United States is killed in an alcohol-related crash. In 1999, there were 15,786 alcohol-related fatalities comprising approximately 38% of all highway fatalities. Although there has been a downward trend in the percentage of alcohol-related fatalities since 1996, the core problem of drinking and driving remains a major public health concern (National Highway Traffic Safety Administration, 1997).

In response to this problem, several areas of research have emerged. One area of investigation has focused on identifying characteristics that differentiate driving-while-intoxicated (DWI) offenders from both nonoffenders and alcoholics (e.g., Donovan & Marlatt, 1983; McMillen, Pang, Wells-Parker, & Anderson, 1992; Murty & Roebuck, 1991; Nolan, Johnson, & Pincus, 1994). A second area has focused on the various assessment instruments that have been employed to either screen DWI offenders for alcoholism or to make treatment recommendation determinations (e.g., Lapham, Skipper, & Simpson, 1997; Sutker, Brantley, & Allain, 1980). The purpose of the present study was to explore differences that might exist between first-time DWI offenders and multiple-time DWI offenders (i.e., those with two or more DWI offenses). Both DWI groups were also compared to a group of nonoffenders in order to further explore differences.

One of the problems often encountered in screening DWI offenders is that they are often resistant to assessment procedures and are therefore unlikely to be forthright in their approach to standardized measures. For this reason, both the Minnesota Multiphasic Personality Inventory (MMPI-2) and the Michigan Alcoholism Screening Test (MAST) were employed in the present study. The MMPI-2 provides an indirect assessment of alcoholism potentiality via the MacAndrews Alcoholism Scale (MAC-R), while the MAST provides a more direct measure of drinking-related problems and symptoms of alcoholism.

2. Method

2.1. Participants

Participants were 209 individuals (157 males and 52 females), ranging in age from 17 to 68 years old ($M = 20.8$, S.D. = 2.4). The DWI offenders group was drawn from a population of convicted DWI offenders in New Jersey. There were 77 first offenders (those convicted of only one drinking-and-driving-related offense), and 71 multiple offenders (those convicted of two or more drinking-and-driving-related offenses). The nonoffender group ($n = 61$) represented a convenience sample of university undergraduates and graduate students as well as adult nonoffenders from the general population.

2.2. Measures and procedure

All participants were administered the MMPI-2 (Hathaway & McKinley, 1943) including the validity scales, clinical scales, and supplemental scales [MAC-R and the Over-Controlled

Hostility (O-H) Scale] and the MAST (Selzer, 1971). Participants were also asked to complete a demographic questionnaire which included information about their drinking and driving history, family history, legal history, and blood alcohol level at the time of their arrest (for the DWI groups). The DWI offenders were administered these measures as part of the routine screening procedures and they were assured that their responses would not influence treatment referral decisions.

3. Results and discussion

3.1. Demographics

To evaluate the comparability of the three groups, several demographic variables were examined. Not surprisingly, given the populations from which the samples were drawn, the three groups significantly differed with respect to age [$F(2,206) = 32.96$, $P < .0001$]. Post hoc comparisons using Tukey's HSD revealed that the nonoffender group ($M = 25.6$ years, S.D. = 7.6) was significantly younger than both the first-offender ($M = 29.6$ years, S.D. = 8.0, $P < .05$) and multiple-offender ($M = 38.1$ years, S.D. = 11.1, $P < .05$) groups. The first-offender group was significantly younger than the multiple-offender group ($P < .05$). This was not unexpected, given that the mean number of years between the first and second offense in the multiple-offender group was 7.58 years. Nevertheless, despite the differences in ages between the groups, it should be noted that MMPI and MAST scores do not appear to vary as a result of age per se (Blankfield & Maritz, 1990; Maisto, Conners, & Allen, 1995). In addition, the MMPI has been found to have good temporal reliability (Graham, 1990).

The three groups were comparable on other demographic variables, such as gender composition [$\chi^2(2, n = 209) = 0.24$, $P < .89$]. Surprisingly, given prior research (cf. Nochajski, Miller, Wieczorek, & Whitney, 1993; Weeber, 1981), the three comparison groups did not differ with respect to number of other legal offenses [$\chi^2(2, n = 209) = 4.36$, $P < .12$] nor incidence of familial alcoholism [$\chi^2(2, n = 209) = 1.53$, $P < .47$]. Finally, the first-offender and multiple-offender groups did not differ with regard to blood alcohol levels at the time of their most recent offense [M's = 0.169 vs. 0.176, $t(146) = 1.16$, $P < .25$ (two-tailed), effect size $r = .10$].

3.2. MMPI validity scales

Because DWI offenders are frequently resistant to mandated assessment procedures, three validity scales of the MMPI were examined (see Table 1). The nonoffender, first-offender, and multiple-offender groups did not differ with respect to their L Scale scores [$F(2,206) = 1.84$, $P = .16$]. There was a significant difference among the three groups, however, for the F Scale [$F(2,206) = 11.11$, $P < .0001$]. Lower scores on this scale reflect a "fake good" tendency (Graham, 1990). Two planned, orthogonal contrasts were used to specifically address the research questions of interest (Rosenthal, Rosnow, & Rubin, 2000). The two DWI groups scored significantly lower on the F Scale than the nonoffender group

Table 1
Means (and standard deviations) for each group on selected scales from the MAST and MMPI-2

	Nonoffenders[a]	First offenders[b]	Multiple offenders[c]
MAST	3.4 (3.88)	4.7 (5.57)	5.5 (5.37)
MAC-R (raw score)	20.0 (3.62)	24.1 (6.25)	22.5 (3.68)
L Lie Scale	49.6 (10.91)	53.0 (10.58)	52.7 (12.23)
F Lie Scale	54.6 (10.25)	46.8 (10.15)	49.7 (8.45)
K Lie Scale	43.4 (9.51)	55.7 (9.03)	55.0 (10.12)
D Scale	51.83 (10.5)	50.18 (7.5)	50.06 (8.5)
Pd Scale	53.8 (7.63)	57.5 (6.70)	56.3 (8.02)
Ma Scale	56.0 (9.95)	54.7 (8.94)	52.5 (7.90)
O-H Scale	51.2 (10.22)	55.3 (9.64)	56.8 (9.96)

[a] $n=61$.
[b] $n=71$.
[c] $n=77$.

[with contrast weights of $-2, +1, +1$, $F(1,206)=19.10$, $P<.0001$, effect size $r=.30$]. The nonoffender group was less likely to exhibit a "fake good" tendency. There was no difference between the two DWI groups with respect to this "fake good" tendency [with contrast weights of $0, -1, +2$, $F(1,206)=2.96$, $P=.09$, effect size $r=.11$].

There was also a significant difference for the MMPI's K Scale [$F(2,206)=33.81$, $P<.0001$]. Higher scores on this scale suggest a tendency for one to be more defensive while lower scores indicate a tendency for one to be more frank and self-critical (Graham, 1990). The first planned contrast found that the nonoffender group was significantly less defensive and more frank and self-critical than the two DWI groups [with contrast weights of $-2, +1, +1$, $F(1,206)=69.17$, $P<.0001$, effect size $r=.51$]. As with the F Scale, the two DWI groups did not differ from each other on the K Scale [with contrast weights of $0, -1, +1$, $F(1,206)=0.22$, $P=.64$, effect size $r=.03$].

These validity scale results are noteworthy from a clinical point of view, in that, while both DWI groups did not differ from the nonoffenders on the Lie Scale, they did differ from the nonoffender group on both the F and K Scales. This suggests that although the DWI offenders may not have been overtly trying to be deceptive on the MMPI, they may have attempted to present themselves in a more favorable light (i.e., "fake good"). These findings may also suggest a tendency by the offenders to either deny their potential psychological problems (such as a substance use disorder) or have a lack of insight into their behavior or motives. Despite possible tendencies towards non-self-disclosure, the MMPI-2 may still have utility as a screening instrument for DWI offenders (cf. Lapham et al., 1995).

3.3. Alcoholism potentiality

While the MAST is said to measure problematic behaviors related to alcohol consumption, the MAC-R is said to measure alcoholism potentiality. Alcoholism potentiality refers to an individual's likelihood of demonstrating alcohol-related problems in the future. Someone with a high MAC-R score may not presently demonstrate alcohol-related problems, but may

have an MMPI-2 profile similar to individuals with substance use disorders or alcohol-related problems, suggesting a potential for alcohol problems in the future.

We found a significant difference between the three groups with respect to their MAST scores [$F(2,206) = 3.10$, $P < .05$]. Planned contrasts revealed that while the two DWI groups did not differ from each other on the MAST [with contrast weights of 0, −1, +1, $F(1,206) = 0.86$, $P = .35$, effect size $r = .06$], the scores for the two DWI offender groups were significantly higher than the nonoffender group [with contrast weights of −2, +1, +1, $F(1,206) = 5.52$, $P = .02$, effect size $r = .17$]. According to Selzer (1971), MAST scores of 3 or less are not suggestive of alcoholism, while scores of 4 are suggestive of alcoholism and scores of 5 or higher are considered indicative of alcoholism. In our study, 20% of the first offenders had a MAST score of 6 or more (indicative of alcoholism) while 31% of those with two or more DWI offenses had a MAST score of 6 or more. A contrast in proportions (Rosenthal & Rosnow, 1991) suggests that a greater percentage of repeat offenders as compared to first offenders may be more likely to be alcoholics, $z = 1.54$, $P = .06$, $r = .13$.

The three groups also differed on the MAC-R [$F(2,206) = 12.38$, $P < .0001$]. The nonoffender group had a significantly lower score on the MAC-R compared to the two DWI groups [with contrast weights of −2, +1, +1, $F(1,206) = 21.04$, $P < .0001$, effect size $r = .31$]. In addition, the first-offender group scored somewhat lower than the multiple-offender group [with contrast weights of 0, −1, +1, $F(1,206) = 3.55$, $P = .06$, effect size $r = .12$]. This suggests that of the three groups, the responses of repeat offenders were most similar to the pattern of responses of self-admitted alcoholics on the MAC-R (MacAndrews, 1965, 1981). This finding is consistent with the finding that a larger percentage of the multiple-offender group scored in the alcoholic range on the MAST as compared to the first-offender group.

Finally, Pearson correlations were computed to assess the relationship between the MAC-R and MAST scores for each of the groups. The results indicated that there was a nonsignificant positive correlation for first offenders, $r = .19$, $P < .10$. For multiple offenders, there was a significant positive correlation, $r = .24$, $P < .05$. Similarly, there was a significant positive correlation for the nonoffenders, $r = .27$, $P < .05$. A comparison of these three correlations indicated that they were not significantly different from each other, $\chi^2(2) = 0.24$, $P = .89$, suggesting that the MAST and MAC-R do tend to positively correlate with one another. This further suggests that in the DWI groups, higher MAST scores were associated with higher MAC-R scores. This information may be clinically useful, as it is possible that while a DWI offender might overtly deny alcohol-related problems on the MAST, his or her elevated scores on the MAC-R might suggest the potential for alcohol-related problems.

3.4. Other measures of psychopathology

The three groups were also compared on a priori selected scales from the MMPI-2 that have been suggested to be related to alcoholism. For example, prior literature notes significant elevations for alcoholics on the Depression Scale, the Psychopathic Deviate (Pd) Scale, and the Mania (Ma) Scale (Graham, 1990). The three groups did not differ from each other on the Depression Scale (D) of the MMPI-2 [$F(2,206) = 0.53$, $P < .83$]. Likewise, the three groups did not significantly differ from each other on the Ma Clinical Scale [$F(2,206) = 2.70$, $P < .07$].

There was a significant difference, however, between the three groups on the Pd Scale [$F(2,206) = 4.19$, $P < .02$]. The nonoffender group was significantly lower on this scale compared to the two DWI groups [with contrast weights of $-2, +1, +1$, $F(1,206) = 7.75$, $P = .007$, effect size $r = .19$]. While the multiple offenders scored in a more pathological direction on the Pd Scale than the first offenders, the two DWI groups did not statistically differ from each other [with contrast weights of $0, -1, +1$, $F(1,206) = 0.91$, $P = .34$, effect size $r = .06$]. The Pd Scale is said to measure rebelliousness towards authority figures, a disregard for rules, egocentricity, impulsiveness, stormy marital/family relationships, and insensitivity to the needs of others (Graham, 1990). These characteristics are similar to the character traits of active alcoholics.

A similar pattern of differences was found between the three groups on the O-H Scale [$F(2,206) = 5.46$, $P < .005$]. The O-H Scale was included in these comparisons because prior research with DWI offenders has noted a tendency towards hostility and resentment among DWI offenders with respect to hostility and resentment (Donovan & Marlatt, 1983). High scores on the O-H Scale are indicative of individuals who are more chronically aggressive or hostile. Active alcoholism is usually associated with higher levels of aggressivity. The nonoffender group scored significantly lower on this scale as compared to the two DWI groups [with contrast weights of $-2, +1, +1$, $F(1,206) = 10.47$, $P = .001$, effect size $r = .22$], while the two DWI groups did not score significantly different from each other [with contrast weights of $0, -1, +1$, $F(1,206) = 0.77$, $P = .38$, effect size $r = .05$]. According to Graham (1990), the O-H Scale is used to identify individuals who can at times display extremely aggressive behavior while at the same time tend to view themselves as being the epitome of propriety and self-control. This coincides with the research of Donovan, Umlauf, Quiesser, and Salzberg (1986), McMillen et al. (1992), and Nochajski, Miller, and Parks (1994) who all found that DWI offenders were likely to manifest either overt or covert hostility.

The aforementioned results on personality variables and psychopathology suggest that DWI offenders may present with clinically significant differences to be aware of, which may be useful when assessing DWI offenders to determine the most appropriate level of treatment. Although the present study is limited by sample size and geographical constraints, it does have clinical relevance to those assessing DWI offenders.

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