



## Are depressed drinking/driving offenders more receptive to brief intervention?

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### Abstract

The relationship between depressed mood and interest in additional counseling was examined in three samples of adjudicated first DUI (drinking/driving) offenders who were participating in a court-mandated program. Based on prior research suggesting a relationship between depressed mood, higher motivation to change drinking and driving, and greater effectiveness of additional supportive brief intervention during the program, it was hypothesized that offenders expressing a depressed mood would be more receptive and less resistant to counseling than would offenders not expressing a depressed mood. In three sub-studies using several different measures of depressed mood, depressed mood was related to higher receptivity/lower resistance to counseling. Resistance rates were lowest for counseling that would occur within the program at no additional cost and highest when counseling required extra sessions or extra cost. Overall, Caucasian males were more resistant to counseling than were females or African-American males, although a differential relationship between depression and counseling resistance was not confirmed in comparisons of gender by ethnic groups.

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The identification of personal characteristics that facilitate behavioral change processes and that also may mediate the effectiveness of intervention for alcohol problems and for harm reduction associated with alcohol has been a major research theme (Project MATCH Research Group, 1997). Motivation for behavioral change, personal efficacy to make changes, and, in the context of service delivery, motivation

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for treatment have long been recognized as important factors that may mediate general compliance and responsiveness to intervention (Rollnick, Heather, Gold, & Hill, 1992) and also facilitate positive outcomes. For example drinking/driving offenders (DUI offenders) with high scores on scales denoting both active attempts to change drinking and drinking/driving behaviors, and confidence in their ability to change those behaviors (high self-efficacy) had lower short-term recidivism rates (Wells-Parker, Kenne, Spratke, & Williams, 2000).

Wells-Parker and Williams (2002) found that DUI first offenders with a depressed mood who received a brief motivational intervention in addition to a standard DUI first offender program benefited with a 35% reduction in recidivism rates. Offenders not screened as having depressed mood did not show differences in recidivism rates with the addition of a brief supportive intervention. A possible explanation for this interaction was that depressed offenders were more motivated to change behavior and more receptive to an intervention that would be consistent with enhanced motivation than were offenders who were not depressed. In the above study, offenders with a depressed mood scored higher on both contemplation and action scales of a Readiness to Change measure of drinking (Rollnick et al., 1992) and of drinking and driving (Wells-Parker, Williams, Dill, & Kenne, 1998) than did non-depressed offenders, suggesting more awareness of the need to change and also more attempts to change. However, depressed offenders scored lower on an efficacy measure to change drinking/driving behaviors. Other researchers have noted higher motivation, better recognition of drinking problems, and a trend toward lower self-efficacy among depressed alcohol abusers (Blume, Schmalings, & Marlatt, 2001). Lower self-efficacy to change problem behavior, such as drinking and driving, could account for elevated risk for alcohol problems and negative outcomes sometimes associated with depression among problem drinkers, but the motivational differences could account for the paradoxical finding that depression is associated with better outcomes in some intervention programs (Crum, Brown, Liang, & Eaton, 2001; Kranzler, Del Boca, & Rounsaville, 1996; Salloum et al., 1998). Blume et al. (2001) suggested that depressed mood may facilitate early changes in drinking and associated harmful behaviors.

If depressed mood is a marker for enhanced motivation and receptivity to intervention, then it would be expected that DUI offenders with a depressed mood (as compared to those not depressed) would be more interested in additional intervention to address personal problems than would offenders who were not experiencing depression. However, regardless of inherent interest, perceived monetary and time costs of additional intervention may be a barrier to interest in additional intervention participation. Thus, it would be important to derive a measure of additional intervention interest net possible effects of time and monetary considerations. Furthermore, it would be expected that the relationship between depressed mood and intervention receptivity should be found regardless of the instruments used to measure depressed mood and should persist over at least short periods of time. If it is the case that depression is a marker for intervention receptivity, and some evidence suggests that even brief additional supportive interventions may have a significant and lasting effect on harmful behavior (specifically recidivism), then confirming a link between depression and counseling receptivity could have practical as well as theoretical implications. In the context of DUI programs, if offenders (i.e., depressed offenders) who are likely to benefit most from additional supportive intervention are also likely to volunteer to participate in optional counseling sessions, then low-cost and voluntary options could enhance overall program effectiveness. Using data from a study that was conducted in a DUI first offender program, the hypothesis that offenders who indicate a depressed mood on assessment instruments would also be more receptive and less resistant to additional counseling was examined.

## 1. Method

A series of questionnaires was administered in addition to usual intake instruments during the course of a 4-week, 12-h court mandated intervention for adjudicated first offenders in the Mississippi Alcohol Safety Education Program (MASEP). The program, which retains the term “education” in the title, is in fact not limited to didactic education, but is a multiple technique, group intervention program incorporating assessment with feedback, activities, and homework assignments, all of which incorporate cognitive, behavioral, and motivational change strategies (Wells-Parker & Williams, 2002). The program operates at over 40 sites in the state of Mississippi. Intake information during the first session includes a measure of alcohol problems developed for DUI offenders, the Mortimer Filkins questionnaire (MF; Anderson, Snow, & Wells-Parker, 2000; Mortimer et al., 1971; Wells-Parker & Williams, 2002), and demographic information, as well as court recorded blood alcohol content (BAC). The validity of the Mortimer Filkins questionnaire for risk prediction among DUI offenders has recently been extensively reexamined and compared to other instruments with published validity information: based on this reexamination the MF was found to be as good as or superior to other instruments used for risk prediction among DUI offenders (Anderson et al., 2000). During the third session an extensively validated instrument for assessing alcohol problems, the Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993), is administered during the class session.

Additional questionnaires containing other measures were administered in three rounds from November, 2003 to November, 2004. Data for the study consisted of intake data, data from assessments conducted throughout the program and questionnaire data from offenders who consented to use of their data for research purposes. The additional questionnaires were administered both for research purposes and for program planning for adding instruments to the intake assessment and for exploring alternatives for incorporating brief counseling sessions targeting offenders most likely to benefit from brief intervention.

### 1.1. Round 1

Questionnaires were administered as a class activity during the third session at sites operating during November, 2003. There were 547 offenders in the sample; 19% of the sample was female, and 35% was minority. All but 25 of the minority group were African-American (161). Mean age was 34.9, S.D.=12.71. 64% had 12 years or less of education (29% 11 years or less); 34% had 13–16 years of schooling; 2% had more than 16 years of schooling.

Measures included in Round 1 were two depression measures and two alcohol problems measures. The usual intake during the first session contained the first alcohol problems measure, the Mortimer Filkins (MF), and the first depression measure, a sadness/depression sub-scale of the MF (hereafter referenced as the MF SD). The MF SD is a five item scale that includes items expressing frequent feelings of depression, sadness, being “down in the dumps”, self-pity, and wishing to be as happy as others (Landrum, Ashley, & Snow, 1993; Wells-Parker & Williams, 2002). A cut score of  $\geq 2$ , which was used in a previous study to identify offenders with a depressed mood who benefited from additional brief counseling (Wells-Parker & Williams, 2002), was used in the current study. The second depression measure was given as part of the in-class activity questionnaire at the end of the third session. The questionnaire consisted of a 10-item version of the Center for Epidemiological Studies Depression Scale

(CES-D) with dichotomous yes or no response options (Irwin, Artin, & Oxman, 1999; Kohout, Berkman, Evans, & Cornoni-Huntley, 1993). Unlike the MF SD, which queries frequent feelings of depression or sadness without giving a specific time period, the CES-D queries sadness and depression only over a period of the past week.

Also included in the questionnaire given during the third session were three questions relating to counseling receptivity. The first question asked about interest in counseling if counseling was provided during the regular MASEP sessions and required no additional time or cost on the part of the offender (in-session interest); a second question queried interest if counseling was brief, but was provided outside of the regular sessions at no additional cost (extra-session interest, no cost). A third question queried receptivity to counseling provided outside of the regular sessions, but at an additional cost (extra-session interest, added cost). The questions were answered on a five point Likert-type scale ranging from definitely not interested to definitely interested. In the analysis, in-session counseling receptivity was defined as expressing either a neutral attitude or probable or definite interest in counseling during the program and at no extra cost. This question has the advantage of measuring interest in counseling without cost or time concerns. A measure of counseling resistance that used all three counseling items was also defined as expressing either probable or definite disinterest to all three counseling items; those who expressed either neutrality, or probable or definite interest on any of the three items were classified as not resistant. In order to triangulate results using a slightly different method of calculating counseling interest, a continuous measure of resistance/receptivity, with higher scores indicating higher receptivity, was calculated by assigning scores of 0 for disinterest, 1 for neutrality, and 2 for interest for responses to each item and summing across items.

## *1.2. Round 2*

A second round of questionnaires was administered immediately following intake during the first session at MASEP sites operating during June 2004. There were 521 subjects in the sample, and 19% of the sample was female; 27% was minority. All but 19 of the minority group were African-American (117). Mean age was 34.85, S.D.=13.27, and 60% had 12 years or less of education (28% 11 years or less); 38% had 13–16 years of schooling; 2% had more than 16 years of schooling.

The additional questionnaire contained the General Health Questionnaire (GHQ), a well-validated measure of distress (Goldberg et al., 1997; Goldberg, Rickels, Downing, & Hesbacher, 1976) that has a strong component of depression (Campbell, Walker, & Farrell, 2003). The GHQ measures recent symptoms of psychological distress and feelings of well-being relative to usual levels (i.e., no more or no less than usual). A factor analysis was conducted to identify a 6-item depression factor, which is labeled as the GHQ SD.

The questionnaire also contained two counseling interest questions, which were the same as the first two counseling interest questions from Round 1. These questions were answered on a four point Likert type scale ranging from definitely not interested to definitely interested. (The neutral response category used in Round 1 was omitted in Round 2.) Counseling resistance was scored by combining the two items: if a subject indicated probable or definite interest on either item the subject was scored as not resistant. If the subject indicated that they would probably or definitely not be interested in both options they were classified as resistant. As in Round 1, a continuous measure of resistance/receptivity, ranging from 0 to 6, with higher scores indicating receptivity was calculated. For this measure, a score of 0 was

assigned to the definitely not interested response, and a score of 3 was assigned to the definitely interested response.

### 1.3. Round 3

Questionnaires for Round 3 were administered during the first session and after intake to participants at MASEP sites operating during November, 2004. There were 517 in the sample, and 24% of the sample was female; 26.5% was minority. All but 12 of the minority group were African-American (121). Mean age was 33.73, S.D.=12.56, and 61% had 12 years or less of education (26% 11 years or less); 37% had 13–16 years of schooling; 2% had more than 16 years of schooling.

A well-validated version of the CES-D (Andresen, Malmgren, Carter, & Patrick, 1994), which contains 10 items (as did the Round 1 CES-D), but, rather than being answered with a yes or no, is answered using a Likert-type scale with four response categories (ranging from rarely to most of the time) was used as an additional measure of depression in Round 3. As with the CES-D used in the first round, the CES-D used in Round 3 asked about depression and other indicators during the prior week. As in the first two rounds, the MF SD from intake was used in analysis. The two counseling interest items from Round 2 were included in Round 3. Using procedures from Round 2, a dichotomous resistance measure and a continuous receptivity measure were computed.

## 2. Results

### 2.1. Depressed mood

In Round 1, depressed mood was measured at two points in time, during the first session using the MF SD and during the third session using the CES-D, which measures depressed mood only during the prior week. Table 1 shows descriptive statistics and internal consistency estimates for depression scales used in the study.

Although given 2 weeks apart the depressed mood measures showed adequate convergent and discriminant validity (Table 2).

Among offenders with measures at both time points, 24% (120/493) were classified as having a depressed mood at intake (MF SD  $\geq 2$ ). After the third session, using a cut score of  $>3$  on the CES-D to identify depressed mood, a cut score that identified approximately 22% of the sample as reporting a

Table 1  
Descriptive statistics: Round 1 (R1), Round 2 (R2) and Round 3 (R3)

Scale	Mean	S.D.	Range	Cronbach's alpha
MF SD (R1)	1.05	1.49	0–5	.813
MF SD (R2)	1.08	1.56		.834
MF SD (R3)	1.17	1.58		.821
CES-D (R1)	1.71	2.08	0–10	.764
CES-D (R3)	7.01	5.50	0–29	.747
GHQ (R2)	9.93	5.31	0–34	.858
GHQ SD (R2)	4.34	3.71	0–18	.867

Table 2  
Correlations between alcohol problems and depression scales, Round 1

	AUDIT (T2)	MF (T1)	MF SD (T1)	CES-D (T2)
AUDIT		.458**	.253**	.304**
MF			.378**	.262**
MF SD				.438**

Note. T1 indicates Time 1, which is first session intake. T2 indicates Session 3.

\*\*  $p < .001$ .

depressed mood; 86% (324/373) of offenders who had depression scores available at both time periods and who were not depressed during the first session ( $MF\ SD < 2$ ) also were not depressed at the third session ( $CES-D < 3$ ). Indeed 92% of those who scored 0 on the MF SD at entry were not depressed at the third session ( $CES-D < 3$ ). However, 51% (61/120) of those who were classified as depressed at intake ( $MF\ SD \geq 2$ ) did not report experiencing a depressed mood during the prior week ( $CES-D < 3$ ) when queried during the third session. Use of a lower cut score ( $< 2$ ) on the CES-D, which identified 37% of the sample as having experienced depression during the prior week, increased slightly the correspondence between reports of depression at both times, with 62% of those reporting depression at intake ( $MF\ SD \geq 2$ ) reporting a depressed mood ( $CES-D \geq 2$ ) during Session 3; however, 29% of those not classified as depressed at intake ( $MF\ SD < 2$ ) were classified as having experienced a depressed mood at the third session ( $CES-D \geq 2$ ).

In Round 2, both the MF SD and the GHQ SD were used to measure depression during the first session. The GHQ SD represents the primary factor of the GHQ. This primary factor was confirmed in two factor analyses. A factor analysis (principal component with varimax rotation) of the GHQ in this study identified two factors (eigenvalues  $> 1$ ), with the primary Factor 1 identified as a depressive/anxiety factor. Items with highest loadings on the primary factor denoted recent feelings of depression/unhappiness, sleep loss over worry, loss of self-confidence, feelings of worthlessness, and feelings of not being able to overcome difficulties. To determine if this factor was stable across populations we conducted a factor analysis of the GHQ based on general Canadian population data from the 2001–2003 CAMH Monitor, a repeated cross-sectional telephone survey (monthly sample sizes 125–275, response rates 54%–62%) of Ontario adults (18 years or older) conducted by the Centre for Addiction and Mental Health, Toronto (see Ialomiteanu & Adlaf, 2004 for details). The items in the Canadian Factor 1 were found to have virtually identical loadings to those found in the current sample. When derived Factor 1 loadings from the current study and Factor 1 loadings from the Canadian sample were applied to Round 2 data, the correlation between the two derived factor scales was unity. When the six highest loaded items on Factor 1 were assigned unit weights to derive a depression sub-scale score of the GHQ (i.e., the GHQ SD), the correlation with the total Factor 1 score was .99, and correlation between the total GHQ and the GHQ SD was .910.

As in Round 1, the MF SD from intake was used in analysis and was highly correlated with both GHQ measures. The correlation between the MF SD total score and the GHQ total score was .612; between the MF SD total score and the GHQ depression subscale the correlation was .651. Descriptive statistics for scales used in Round 2 are shown in Table 1.

Among offenders having scores on both depression instruments, the MF SD ( $\geq 2$ ) classified 25% (115/465) as being depressed. The second depression measure in Round 2 was the GHQ SD. Using a cut-point of  $> 4$  for the GHQ SD, 40% were classified as depressed, and using a cut-point of  $> 5$ , 31%

were classified as depressed. Correspondence between the MF SD ( $\geq 2$ ) classification and GHQ SD classification was relatively high. Using the  $>4$  cut point, 85% of those classified as depressed by MF SD were so classified by GHQ SD (95/112), and 75% (258/346) classified by MF SD as not depressed were similarly classified by GHQ SD. Using the GHQ SD higher cut point of  $>5$ , 69% (77/112) of MF SD depressed offenders were so classified by the GHQ SD, and 86% (298/346) of non-depressed MF SD offenders were so classified by GHQ SD.

In Round 3 during Session 1, the CES-D that used a four point Likert-type response scale was used as a measure of depression in addition to the MF SD. The MF SD scale total score and the CES-D total score were highly correlated,  $r = .702$  ( $p < .001$ ), and the MF SD scale total score was correlated .712 with a single item from the CES-D that asked how often the participant had felt depressed during the past week. These correlations approached the magnitude of the Cronbach's alpha (.747) for the CES-D. Descriptive statistics for depression measures analyzed in Round 3 are shown in [Table 1](#).

The MF SD ( $\geq 2$ ) classified 29% (135/468) as depressed. Several cut scores were examined for the CES-D. Using the approximate median cut-score ( $>6$ ), 44% were classified as depressed, and using a more conventional cut-score ( $>10$ ), 23% were classified as depressed. 87% of those classified as depressed by the MF SD scored above 6 on the CES-D, and 67% of depressed offenders on the MF SD scored above 10 on the CES-D.

Of those classified as depressed by the MF SD, 81% responded feeling sad or depressed during the past week on the CES-D item that directly queried feelings of sadness and depression, with 54% reporting experiencing at least moderate or frequent depression during the past week.

## 2.2. *Counseling receptivity/resistance*

In Round 1, counseling receptivity and resistance were measured during the third session. Using a dichotomous measure of counseling resistance, 45% expressed probable or definite disinterest in counseling on all three counseling interest items (i.e., they never expressed either neutrality or interest in counseling) and were classified as resistant. In subsequent rounds, modified measures of counseling interest were used in that a neutral response was eliminated from response options, and only the in-session and extra-session, no additional cost items were used. In Round 2, using the modified items to compute a dichotomous counseling resistance measure, 60% were resistant to counseling (i.e., expressing definite or probable disinterest on both items), and in Round 3, 58% were so classified.

In all three rounds, more offenders expressed interest in in-session, no additional cost counseling than in any extra-session option. In Round 1, when counseling interest was queried during the third session, 46% indicated that they were probably disinterested in in-session counseling, 21% were unsure and 33% were probably or definitely interested. Fewer offenders were interested in extra-session, no cost counseling: 62% expressed disinterest, and 22% expressed interest. Regarding extra-session, additional cost counseling, 64% expressed disinterest, and 21% expressed interest. In Rounds 2 and 3, when interest was queried during the first session, 64% (Round 2) and 61% (Round 3) expressed disinterest in in-session counseling; 36% (Round 2) and 39% (Round 3) expressed interest. Fewer participants were interested in extra-session, no cost counseling, with 72% (Round 2) and 71% (Round 3) expressing disinterest.

Few offenders who were not interested in in-session counseling expressed interest in extra-session counseling options. In all rounds, less than 3% of participants expressed interest in extra-session

counseling but not in in-session counseling, and use of the in-session counseling item alone was an excellent surrogate for classifying general resistance.

### 2.3. Demographics and counseling resistance

In Round 1 there were no statistically significant differences between counseling resistance for males (45%) and females (39%) ( $\chi^2 [1, N = 531] = 1.32, p > .10$ ); however racial groups differed significantly on resistance ( $\chi^2 [2, N = 530] = 10.68, p < .01$ ). Among Caucasians resistance was 49%, African-Americans, 34%, and other minorities (of which there were only 25), 44%. The most striking differences were between Caucasians and African-Americans.

In Rounds 2 and 3 results generally replicated those found in Round 1 regarding race and gender. In Round 2, fewer African-Americans (42%) were resistant than were Caucasians (66%) or other races (60%) ( $\chi^2 [2, N = 497] = 21.31, p < .01$ ). In Round 3, there was a trend for African-Americans to be less resistant to counseling (45%) than Caucasians (63%) ( $\chi^2 [1, N = 446] = 3.2, p < .1$ ). In Rounds 2 and 3 there were no significant gender differences. 60% of males and 58% of females were classified as resistant in Round 2 ( $\chi^2 [1, N = 493] = .85, p > .1$ ). In Round 3, 54% of females and 64% of males were resistant ( $\chi^2 [1, N = 443] = 3.46, p > .05$ ).

However, when race by gender categories were examined (Table 3), there was a consistent pattern across all rounds for Caucasian males to have the highest rate of counseling resistance. A general pattern emerged for the rates of Caucasian males to be significantly higher when compared to other subgroups.

### 2.4. Depression as a predictor of counseling resistance

Table 4 shows the relationship between various measures of depression and counseling resistance/receptivity across the three rounds. There is a consistent relationship between depression and counseling

Table 3  
Resistance within demographic groups

Group	Percent resistant (%) Round 1 <sup>a</sup>	Percent resistant (%) Round 2 <sup>b</sup>	Percent resistant (%) Round 3 <sup>c</sup>
1. African-American			
Females	30	56	47
Males	35	47	56
2. Caucasian			
Females	41	60	55
Males	51	68	67
3. Other minority <sup>d</sup>			
Females	(1/2)	(0/1)	(2/3)
Males	44 (10/23)	67 (8/12)	51 (5/9)

<sup>a</sup> Comparing race within gender groups: females [1 vs. 2] ( $\chi^2 = .84, df(1, 102), p > .1$ ); males ( $\chi^2 = 10.37, df(2, 401), p < .01$ ).

<sup>b</sup> Comparing gender within race (1 vs. 2) groups: Caucasians ( $\chi^2 = 24.00, df(1, 379), p < .01$ ); African-Americans ( $\chi^2 = .05, df(1, 92), p > .1$ ).

<sup>c</sup> Comparing gender within race (1 vs. 2) groups: African-Americans ( $\chi^2 = .48, df(1, 114), p > .01$ ); Caucasians ( $\chi^2 = 4.87, df(1, 352), p > .05$ ).

<sup>d</sup> Few other minorities were present in the samples. Because of low numbers, percentages are not calculated for other minority females, and when sub-group *N*s are less than 12, other minority groups are not included in statistical comparisons.

Table 4  
Depression and counseling resistance/receptivity

Round 1					
Session	Measure (cut-point)	Not depressed % resistant	Depressed % resistant	Statistic $\chi^2(1); t$	<i>N</i>
1	MF SD ( $\geq 2$ )	48%	36%	5.789**	518 <sup>a</sup>
	Receptivity <i>M</i> (S.D.) <sup>b</sup>	1.90 (2.33)	2.33 (2.44)	1.91*	
	AUC (S.E.)			.546 (.026)*	
3	CES-D ( $\geq 3$ )	49%	32%	10.37**	
	Receptivity <i>M</i> (S.D.) <sup>b</sup>	1.81 (2.18)	2.61 (2.32)	3.49**	
	AUC (S.E.)			.561 (.026)*	
3	CES-D ( $\geq 2$ )	49%	39%	4.90*	
	Receptivity <i>M</i> (S.D.) <sup>b</sup>	1.76 (2.12)	2.39 (2.36)	3.08**	
	AUC (S.E.)			.546 (.026) <sup>#</sup>	
Round 2					
Session	Measure (cut-point)	Not depressed % resistant	Depressed % resistant	Statistic $\chi^2(1); t$	<i>N</i> <sup>c</sup>
1	MF SD ( $\geq 2$ )	65%	47%	11.18**	458
	Receptivity <i>M</i> (S.D.) <sup>d</sup>	1.87 (1.72)	2.65 (2.03)	3.71**	
1	GHQ SD ( $>4$ ) <sup>e</sup>	68%	49%	18.01**	496
	Receptivity <i>M</i> (S.D.) <sup>d</sup>	1.74 (1.74)	2.54 (1.91)	4.71**	
Round 3					
Session	Measure (cut-point)	Not depressed % resistant <sup>f</sup>	Depressed % resistant <sup>f</sup>	Statistic $\chi^2(1)$	<i>N</i>
1	MF SD ( $\geq 2$ )	69%	40%	33.1**	495
1	CES-D ( $>6$ )	71%	49%	23.53**	
1	CES-D ( $>10$ )	67%	43%	22.35*	

Note: For Round 1, the AUC for the continuous MF SD scale was .545 (S.E. = .027)\* and for the continuous CES-D scale, .573 (S.E. = .026)\*. <sup>#</sup> $p < .1$ ; \* $p < .05$ ; \*\* $p < .01$ .

Note: For Round 2, the AUC for the continuous MF SD scale was .610\* (S.E. = .027)\* and for the continuous GHQ SD scale, .628\* (S.E. = .025). <sup>#</sup> $p < .1$ ; \* $p < .05$ ; \*\* $p < .01$ .

Note: For Round 3, the AUC for the MF SD was .661 (S.E. = .028), and for the CES-D, .648 (S.D. = .026). <sup>#</sup> $p < .1$ ; \* $p < .05$ ; \*\* $p < .01$ .

<sup>a</sup> Statistics calculated for participants having scores at both sessions.

<sup>b</sup> Higher scores denote higher receptivity/lower resistance.

<sup>c</sup> Statistics calculated for participants with scales scores on particular scale.

<sup>d</sup> Higher scores denote higher receptivity/lower resistance.

<sup>e</sup> Using a cut point of  $>5$  on the GHQ SD, results were similar with 65% of non-depressed offenders, and .47% of depressed offenders being resistant.

<sup>f</sup> The in-session measure of resistance was virtually identical to the combined measure of resistance and is used for comparisons.

interest across all instruments that were used to measure depression, and across both methods of calculating resistance/receptivity. Regardless of instrument or cut-point, fewer depressed than non-depressed offenders were resistant to counseling and depressed offenders scored higher on the continuous counseling receptivity measures than non-depressed offenders. Using ROC analyses, AUCs for all depression instruments showed a significant relationship between depression and lower counseling resistance (Table 4). No depression instrument appeared to be superior to others for predicting counseling resistance.

Even when measurement of depression was separated in time from measures of counseling receptivity, as in Round 1, depression predicted receptivity. In Round 1, the MF SD predicted receptivity/resistance to counseling even though receptivity/resistance was measured during Session 3, approximately 2 weeks after intake. The CES-D, which was given at the same time as the receptivity/resistance measures appeared to be slightly better at predicting receptivity/resistance than the MF SD, given 2 weeks earlier. However, there were no significant differences between the AUCs for the two instruments.

In Round 1, in which depression was measured at intake, and during Session 3, it was of interest to determine if consistency across time in reporting depressive symptoms was related to counseling resistance. There was a relationship ( $\chi^2 [1, N=493]=11.617, p<.01$ ). Among the 324 offenders who reported no depression or sadness at intake (MF SD $<2$ ) or at the third session testing date (CES-D $\leq 3$ ), 50% were resistant to counseling; among the 110 offenders who reported depression on only one of the occasions, 41% were resistant; and among the 59 offenders (12% of the sample) who reported depression on both occasions, 27% were resistant to counseling. That is, 73% of those consistently reporting depression were not counseling resistant.

### *2.5. Depression as a predictor of counseling interest within demographic groups*

In Round 1, when prediction of counseling interest by depression was examined separately within race by gender groups, results suggested that depression predicted interest for all but Caucasian males. However, when differential prediction for race by gender groups was examined in later rounds, no differences were found. In later rounds, depression predicted interest for Caucasian males as well as for other race by gender groups.

## **3. Discussion**

As predicted, depressed offenders were more likely to be interested in counseling than were non-depressed offenders. In-session counseling requiring no additional time or costs was clearly the most attractive option. For example, had in-session counseling been offered on a voluntary basis, current results suggest that depressed offenders would have been less resistant than offenders who were not depressed. Round 1 results suggested, not surprisingly, that depressed mood may have varied over several weeks, with some offenders not sustaining a depressed mood throughout the 4-week program. Although some of this variation could be due to unreliability of measurement or use of different instruments to assess depression, it is not surprising that depressed mood varied. However, those who were depressed at both time periods had very low resistance rates suggesting that those with more severe or sustained depression may be an excellent target group for additional intervention. Possibly individuals with sustained depression may benefit not only from supportive, short motivational interventions, but also may be receptive to and benefit from interventions that specifically target depression. Clearly more research is needed to take advantage of the enhanced receptivity to additional intervention that may accompany depression.

In an earlier study Wells-Parker and Williams (2002) found that first DUI offenders with a depressed mood at intake who were participating in the mandated intervention program benefited from additional brief in-session supportive counseling. In the current study, 24% to 29% of offenders in the three rounds

indicated depressed mood at intake, using the same measure (the MF SD) that was used by Wells-Parker and Williams. When depressed mood and counseling interest both were measured at intake, 13% to 17% of all offenders would have both met the criteria for probable benefit (i.e., reported a depressed mood), and potentially volunteered (having expressed interest in) for additional counseling. Clearly, while depressed mood and counseling interest were consistently related, not all depressed offenders indicated openness to additional counseling even when offered at no cost and with no additional time required. For example, among depressed offenders in Round 2, 47% said they were probably or definitely not interested in in-session, no cost counseling. Furthermore, some non-depressed offenders were interested in receiving additional counseling.

It is particularly disturbing that one of the most common groups among DUI offenders, Caucasian males, also had the highest counseling resistance rates. Although depression was not a good predictor of resistance for Caucasian males in Round 1, depression was related to lower resistance rates among Caucasian males in the latter rounds, which suggests that depression is a marker for receptivity to additional intervention even in this generally resistant group.

It is possible that receptivity might have been higher had interest questions been worded differently or placed in context with additional explanation. For example, the interest questions used the word “counseling” because it was straightforward and appropriate to the educational level of the population. Had other words been used or some explanation been given as to the nature of counseling that was referenced, receptivity/resistance levels might have been different. However, it is notable that several different response formats and methods for calculating counseling resistance and receptivity were used across the three rounds of the study and the general relationship between higher depression rates and lower resistance/higher receptivity held across all methods and rounds.

In Round 1, depression was measured both at intake and during the third session. Resistance was measured only during the third session and was lower than in the final two rounds, in which resistance was measured at intake. It is possible that the differences between Round 1 resistance rates and the higher resistance rates found in the latter rounds were artifacts of different response options, scoring methods and sampling differences. It is also possible that during the course of the program, resistance to intervention had been reduced. It would be useful to explore the possibility that resistance may be lower later in the program and that more offenders would voluntarily participate in additional intervention if offered the opportunity toward the end of mandated programs. Additional interventions are likely to be more attractive if they could be offered at a relatively low cost and are convenient in terms of time. Although not all offenders would necessarily benefit from additional brief intervention, use of telephone or internet interventions for groups who may benefit, such as offenders who report a depressed mood, should be explored.

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