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## **Motivational Interviewing: Does it Increase Clients' Retention in Intensive Outpatient Treatment?**

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**Abstract.** Motivational Interviewing (MI) is a clinical technique that has received considerable attention in the addictions arena over the past decade. In the present pilot study, the impact of providing up to five MI sessions during the first two weeks of intensive outpatient treatment (IOP), relative to the treatment as usual was addressed. The participants were 106 IOP patients, and a post-test design was utilized. Results showed that adding MI sessions during the first two weeks of IOP did not increase the number of days in treatment nor was there an increase in treatment completion. It is possible that the MI sessions by themselves were not sufficient to offset factors that were contributing to less than optimal treatment involvement.

**Key Words:** Alcohol and other drugs, Motivational Interviewing, Retention.

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## INTRODUCTION

There are a range of empirically supported interventions for persons with alcohol and other drug use problems. Unfortunately, many patients cease treatment involvement before having full opportunity to benefit from these treatment interventions. For example, it is estimated that approximately 82% of the clients in outpatient, drug free programs drop out before completing treatment (1). Since treatment retention and completion have been consistently associated with improved outcomes (1-4), it become important to focus on techniques and strategies for retaining patients in treatment. This may be particularly critical in the early stages of treatment, given the findings of high dropout rates across treatment modalities within the first few weeks of treatment (5).

Motivational enhancement therapy (MET) (6) is a proven practice method that has been shown to be as effective as cognitive behavioral therapy (CBT) (8) and Twelve-Step Facilitation (TSF) (9) methods, yet much briefer and time limited. In Project MATCH (7-9), a large and highly respected randomly controlled trial (n = 1,726), it was concluded that MET, an adaptation of motivational interviewing delivered in four 1-hour weekly sessions (10) was as effective as CBT or TSF methods delivered across 12 weekly one-hour sessions. Although the adaptation of MI had one-third the number of sessions as CBT or TSF, the number of days using alcohol in the year following treatment was substantially the same across all three methods (11).

Motivational Interviewing provides an approach to explore and resolve ambivalence about recovery. The logic behind using MI is that replicated clinical

trials have demonstrated that it is a brief intervention (1 to 4 sessions) and effective at improving substance use outcomes as well as treatment retention and compliance (6, 12). Miller and Rollnick (6) defined MI as a way of being with people and a set of clinical methods that can be taught and learned. MI involves the application of four basic principles: (a) expressing empathy, (b) developing discrepancy, (c) rolling with resistance, and (d) supporting self-efficacy, thus enhancing intrinsic motivation related to initiating some change to a healthier behavior. MI matches specific treatment strategies to the client's *stage of change* (13).

### ***Hypotheses***

Two hypotheses were posed for this study which pertained to the paucity of research on the potential of MI to increase number of days in treatment: The hypothesis posed and tested are: Up to five booster motivational interviewing sessions during the first two weeks of treatment (when high rates of dropouts occur) increases (a) days in IOP treatment, and (b) completion rates in an intensive outpatient alcohol and drug treatment program.

## **METHOD**

### ***Participants***

The sample included 106 patients seeking clinical services at an intensive outpatient treatment program. Subjects' mean age was 35 years with a range of 19 to 63 years. The sample was approximately evenly split in terms of gender with 51.9% women. In terms of ethnicity 47% of the sample described themselves as African American, 49% as white, and 4% as Hispanic or Native

American. Twenty-six percent of the sample reported that they were HIV positive. No significant differences were observed between those assigned to the group receiving the MI sessions (n=50) and those in the comparison group (n=56) on age, race, gender, or HIV status.

### ***General Procedures***

***Inclusion Criteria:*** Subjects (a) were 18 or older, (b) met the DSM-IV-TR criteria for alcohol dependence according to supporting documentation from referral sources or via data collected using the Addiction Severity Index (14, 15), (c) could read and understand English sufficiently to complete informed consents and data collection forms, and (d) agreed to engage in intervention activities in the IOP program.

***Assignment to Groups:*** Participants were assigned to treatment and comparison groups in a sequential manner. The first eligible person was assigned to the treatment group, the next eligible participant to the comparison group, thus alternating until sample size was achieved. Only the MI counselor who provided the MI booster intervention was knowledgeable of the assignment. Program staff were blind to the assignment.

***Comparison Group and IOP for all Subjects:*** The comparison group, those receiving the standard treatment of the IOP program services, received all usual and customary services rendered by the program. The only difference between the treatment and comparison groups was the additional MI sessions.

Treatment was provided by the IOP program and consisted of weekly individual and group counseling sessions five days a week over a six-month

period. All clients admitted to the IOP program adhere to a rigorous weekly schedule consisting of 12-step educational sessions, drug refusal skills, life skills, treatment planning, and group therapy. Group therapy is largely focused on engaging clients in twelve-step recovery using a highly structured twelve-step facilitation method that is fundamentally grounded in the AA literature. IOP clients also must attend a minimum number of Alcoholics Anonymous meetings during the course of treatment (usually 5 meetings weekly). All counselors are certified alcohol and drug counselors (CADC) or within a year of obtaining certification.

**Treatment Group:** As subjects were assigned to the group receiving the MI sessions, the MI counselor was notified. An attempt was made to schedule the first MI session the following day, which would have been the first full day of IOP. MI sessions were available only to those in the treatment group and were conducted between regularly scheduled IOP counseling or educational meetings. At the beginning of the first MI session, subjects were asked if they understood the consent form and whether they had any questions. Subjects in the treatment group were reminded that they were selected to receive additional counseling sessions in order to improve treatment retention and completion.

The MI counselor placed less prominence on a manualized approach to MI, rather following Miller and Rollnick's (6) suggestion of remaining in the *spirit* of motivational interviewing. Miller and Rollnick concluded after several years of experience that ". . . we have found ourselves placing less emphasis on techniques of motivational interviewing and ever greater emphasis on the fundamental spirit that underlies it" (p. 33). Motivational interviewing consists of

two phases. Phase 1 focuses on identifying and strengthening clients' existing motivation for change, and Phase 2 seeks to consolidate clients' commitments to change (10).

Each session's fundamental framework consisted of the counselor focusing on Miller and Rollnick's (6) suggestion of client collaboration, evocation, and autonomy. The counselor avoided an authoritarian relationship, instead, communicating in a partner-like relationship. The session also steers clear of any attempt to insert insight or education, but elicits clients' intrinsic motivation. The final key component of remaining in the spirit of MI is the awareness that change is ultimately the responsibility of the client (6).

The counselor delivering the intervention was a Ph.D. psychologist who had received extensive training and supervision in motivational interviewing and had been using MI for 7 years.

***Operationalization of Variables:*** The main dependent variable is the number of days in treatment. All data were collected by the administrative assistant—the demographics in the intake process (four items) and days in treatment when clients either completed the program or ceased to return.

The following section describes variables that encompass demographic variables included age, gender, race, and HIV/AIDS status. Subjects' ages were provided in years at the date of admission. There are two categories of gender, male and female. Four categories were used to describe the race of participants: African-American, Caucasian, Native American and Hispanic. HIV/AIDS status consisted of self-reported HIV/AIDS negative and positive. The number of MI

sessions received by the treatment group was the actual number of MI sessions attended by each subject (0 to 5). Operationalization of the two primary dependent variables consisted of the actual number of IOP sessions attended (0 to 119 over six months) and treatment completion (0 = No; 1 = Yes, completed with staff approval).

Supplemental analyses were performed to assess the MI intervention dose levels. Subjects in the treatment group could receive up to five MI sessions during the first two weeks. These sessions (doses) were dichotomized as *below* and *above* the median number of MI sessions (2) which resulted in 0 to 2 MI sessions = *Low dose (recoded as 0)*, and 3 to 5 sessions = *High dose (recoded as 1)*.

A counselor's perception of severity was determined by whether subjects were excluded from or included in the Government's Performance and Results Act (GRPA). Programs receiving funds from SAMSHA-CSAT are required to enter client data into the GPRA system at three points in time (baseline, and 6 and 12 months post baseline). Once subjects are entered into the GPRA system, an 80% follow-up rate is mandated. Those subjects evaluated at admission to be high risk to locate at follow-up are not entered into the GPRA system, thereby indicating subject instability. In other words, more severe is seen as those who are more unstable and least likely to be found for following up, as required by GPRA. Factors considered by intake counselors included poor health, recently hospitalized, dying, homeless or in shelters, left town, in jail or running from



authorities, and no evidence of collateral contacts. A dichotomous variable (0 = No; 1 = Yes, Severe) was created to reflect participants' entrance into GPRA.

It should be noted that an adjustment was made to balance the groups in terms of HIV positive clients—a deviation from strict random assignment.

Because those who entered the program being addicted to alcohol and other drugs as well as suffering from HIV/AIDS made up a much smaller segment, an adjustment was made to better balance groups. After several months of sequential assignment and close to the end of the study, a decision was made to place the next HIV/AIDS subject into the comparison group in order to balance out the two groups. This adjustment violated assumptions of random sampling.

## RESULTS

***Hypothesis 1:*** Subjects in the treatment group (IOP + up to 5 MI sessions in the first two weeks) *will attend significantly more IOP sessions* than those in the comparison group.

The results of the 2-tailed *t*-test indicated that there was no significant difference between the mean number of days in treatment between groups ( $t = .721$ ,  $df = 104$ ,  $p = .472$ ,  $n = 106$ ). Therefore,  $H_1$ , that subjects in the IOP program who were assigned to the treatment group would have increased retention as measured by days in treatment, is rejected. A power analysis with *t*-test yielded a medium effect size (0.5) ( $\alpha = 0.05$ ;  $\delta = 2.5698$ ; critical  $t(104) = 1.6596$ ; power = 0.8181). While not statistically significant, the means varied in the opposite direction of what was hypothesized, with the comparison

group remaining in the program longer than the treatment group (mean of 37.3 days for the comparison group compared to 33 days for the treatment group).

**Hypothesis 2:** A higher percentage of subjects in the treatment group (IOP + up to 5 added on MI sessions in the first two weeks) will *complete treatment* than those in the comparison group.

Overall, 75 of the subjects (70.8%) dropped out of the program before completing, including 72% of the comparison group and 69% of the treatment groups. Inversely, only 28% and slightly more than 30% of the comparison and treatment groups, respectively, completed treatment. Chi-square tests indicate that the intervention did not play a significant role in treatment completion (chi-Square = .082,  $df = 1$ ,  $p = .774$ ,  $n = 106$ ), resulting in the rejection of the hypothesis. The results are in the opposite direction of the hypothesis. The power for  $t$ -test on Means is low, ANOVA with medium effect size (0.25) ( $\alpha = 0.05$ ; power = 0.7224; critical  $F(1, 104) = 3.9324$ ; Lambda = 6.625).

**Supplemental Analyses:** Three additional supplemental analyses were conducted. In these analyses, only the *number of IOP session's* dependent variable was used. The first supplemental analysis was conducted to investigate the influence of 10 subjects in the treatment condition who received no MI sessions on the number of IOP sessions. (These 10 subjects assigned to the MI session condition left treatment prior to meeting with the MI counselor, and thus received no MI sessions.)

Results of a  $t$ -test indicated that there was no significant difference between the truncated treatment and comparison groups in mean number of IOP

sessions attended ( $t = .178$ ,  $df$ , 94,  $p = .859$ ). Thus, the inclusion or exclusion of the 10 subjects in the treatment group who received no MI sessions did not significantly influence the number of IOP sessions attended.

A second supplemental analysis included both univariate and multivariate analyses to better understand the differences and similarities in the correlates and predictors of the number of IOP sessions attended. First, correlations among demographic variables, independent variables, additional measures, and dependent variables were analyzed. Variables that were significantly related to the primary outcome, number of IOP sessions attended, were retained for inclusion in the multivariate analyses. A multiple regression was conducted to identify those variables that accounted for a significant proportion of the variance in the outcome. In the first block, any variable, with the exception of the primary independent variable (treatment vs. comparison group), that was found to be significantly related to the outcome in the bivariate analysis was entered. In the second block, the treatment condition was entered. Table 1 presents the correlation matrix of age, gender, race, HIV/AIDS status, number of MI sessions, number of IOP sessions, completion, MI dose, and client severity.

Examination of Table 1 indicates that two variables were significantly related to the outcome (number of IOP sessions): HIV/AIDS status and client severity. While the relationship between number of MI sessions and number of IOP sessions did not reach the conventional level of significance, it was approaching significance ( $p = .065$ ).

Three variables were retained for inclusion in the multivariate model: HIV/AIDS status, client severity, and number of MI sessions attended. Although the number of MI sessions failed to yield a significant relationship with the primary outcome, it was retained in the multivariate analysis because it approached significance and was a major component of both hypotheses. Table 2 shows the unstandardized regression coefficients ( $b$ ), standard errors (SE), and standardized beta for the regression model. The linear combination of variables in the multivariate model accounted for 32% of the variance in the number of IOP sessions attended. Examination of Table 3 indicates that client severity and HIV status were significant predictors of the number of IOP sessions attended. Given the findings in the bivariate analysis, it was not surprising that the number of MI sessions attended was not a significant predictor of the outcome, number of IOP sessions attended.

The fact that the second block is not significant indicates that the severity and HIV/AIDS status were significant at predicting number of IOP sessions ( $r^2$  change = .315,  $f = 10.801$ ,  $df = 47$ ,  $p = .000$ ). However, even when controlling for effects of severity and HIV/AIDS status, MI group involvement was not significant at predicting number IOP sessions ( $r^2$  change = .042,  $f = 3.042$ ,  $df = 46$ ,  $p = .088$ ).

The third and final supplemental analysis was a chi-square testing the relationship between HIV/AIDS status and client severity (Table 3). This analysis was done to determine if the most severe clients were those who were HIV/AIDS positive. Overall, 45 of the subjects (42.5%) were severe, including 39.7% of the

HIV/AIDS negative and 50% HIV/AIDS positive. Those subjects not severe totaled 61 (57.5%) with 60.3% HIV/AIDS negative and 50% HIV/AIDS positive. This final supplemental analysis resulted in a non-significant relationship (chi-square = .887,  $df = 1$ ,  $p .379$ ,  $n = 106$ ).

**Summary of Results:** Neither of the two hypotheses were supported. In this regard, an average of two MI booster sessions did not result in subjects in the treatment group attending more IOP sessions or completing treatment for addiction to alcohol and other drugs. Supplemental analyses, however, showed a statistically significant relationship between HIV/AIDS status, severity (or the degree to which clients appeared to be sufficiently stable to be located for follow-up assessments), and days in IOP treatment: HIV/AIDS positive clients perceived as high in severity were more likely to drop out of treatment.

## DISCUSSION

The results of this study suggest that additional Motivational Interviewing sessions within the first two weeks of treatment, when many dropouts occur, do not increase the number of days in intensive outpatient treatment for clients addicted to alcohol and other drugs, some of whom are also HIV/AIDS positive. Neither is there a statistically significant relationship between having/not having additional Motivational Interviewing sessions in the first two weeks of treatment and completing treatment.

### **Limitations**

While the MI counselor was well seasoned, trained, and credentialed, it is not known whether the proposed protocols were followed as none of the

sessions were observed or taped. Another study limitation was not obtaining baseline data related to possible factors which were contrary to treating addiction on an outpatient basis. Although randomization would seemingly have solved baseline differences, it cannot be assumed that clients living in poverty are *outliers* and would be equally distributed. The majority of subjects in the study could have enormous external forces working against remaining in minimal care. This could explain the 70% termination from treatment before completion.

### ***The Next Steps***

Future research should identify and address the outside influences on subjects. For instance, relying only on an in-treatment intervention without addressing housing issues, unemployment, medical conditions, or other overpowering forces requiring the immediate attention of the client, would have a limiting effect on outcomes. This study could be replicated using a case manager working to stabilize outside issues thereby allowing the subject to focus on remaining in treatment and only treating addiction. A case manager could assist with limiting the pressures of outside issues pulling subjects away from the priorities of treatment.

The recommendation for future research with a larger sample of those who are alcohol and other drug addicted would also apply to those entering HIV-infected. Connecting this population with a case manager who understands both disease conditions and is able to operate within the community to bring together appropriate services is vital to any further research.

### ***The Continued Gap in Knowledge***

According to SAMHSA, women, adolescents, young adults, and minorities continue to be under-represented in clinical services because of social, cultural, and geographic barriers (16). This lack of involvement in clinical services diminishes access to quality health care, hampers widespread adoption of available preventive approaches, and jeopardizes the ability of researchers to generalize findings to those most in need.

By not excluding any subjects in this study for reasons like homelessness, criminal justice involvement, psychiatric histories, or any other potential problems related to excused subjects for research designs (see 8), this study intervened with individuals who often are excluded from clinical protocols, thus suggesting that lower functioning individuals require more than a brief interaction within an outpatient system. While it is clinically important to maintain the methods behind the MI approach during treatment services, if patients are not properly matched with their level of needed care, it could result in continued earlier treatment termination. While it could be assumed that patients within IOPs are receiving appropriate levels of care, most often, due to long waiting lists and the lack of residential facilities, IOPs are the “safety nets” for those in need of treatment. In order to address the real world of substance abuse treatment, research studies will have to reduce barriers to inclusion criteria and allow today’s typical IOP patient (e.g., homeless, dually diagnosed [and taking medication], criminally involved, and hard to follow-up) into research studies and the benefits from that resulting knowledge.

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**Table 1**  
**Correlation Matrix**

	1	2	3	4	5	6	7	8	9
1. Age		.074	.087	-.016	-.011	.005	.031	.043	-.135
2. Gender	.074		-.065	*-.237	.145	-.066	.079	.206	*.204
3. Race	.087	-.065		**-.286	.277	.221	-.004	*.332	.131
4. HIV Status	-.016	-*.237	**-.286		-.040	**-.284	-.150	-.066	-.091
5. # of MI sessions	-.011	.145	.277	-.040		.263	.103	**862	.085
6. # of IOP sessions	.005	-.066	*.221	**-.284	.263		**633	.122	**453
7. Completion	.031	.079	-.004	-.150	.103	**633		-.053	**258
8. MI Dose	.043	.206	*.332	-.066	**862	.122	-.053		.020
9. Client Severity	-.135	*.204	.131	-.091	.085	**453	**258	.020	

Pearson's correlations: \* = Significant at  $p \leq .05$ ; \*\* Significant at  $p \leq .01$  (2-tailed).

**Table 2**  
**Unstandardized Regression Coefficients**

<b>Dependant Variable = Number of IOP Sessions Attended</b>		
<b>Model 1</b>		
<b>Variable</b>	<b>Beta Coefficient</b>	<b>Std. Error</b>
Client Severity	27.995**	6.882
HIV Status	-24.107**	7.743
<b>Model 2</b>		
<b>Variable (excluded)</b>	<b>Beta Coefficient</b>	<b>Std. Error</b>
MI Sessions	3.819	2.19

\*Significant at  $p \leq .05$ ; \*\* Significant at  $p \leq .01$ .

**Table 3**  
***Relationship between HIV/AIDS & Client Severity***

	HIV/AIDS Negative	HIV/AIDS Positive	Total
Severe	31 (39.7%)	14 (50.0%)	45 (42.5%)
Not Severe	47 (60.3%)	14 (50.0%)	61 (57.5%)
Total	78 (100.0%)	28 (100.0%)	106 (100.0%)