

How Does Motivational Interviewing Work? Therapist Interpersonal Skill Predicts Client Involvement Within Motivational Interviewing Sessions

Theresa B. Moyers, William R. Miller, and Stacey M. L. Hendrickson
Center on Alcoholism, Substance Abuse, and Addictions, University of New Mexico

Although many studies have shown that motivational interviewing (MI) is effective in reducing problem behaviors, few have investigated purported causal mechanisms. Therapist interpersonal skills have been proposed as an influence on client involvement during MI sessions and as a necessary precursor to client commitment language. Using the Motivational Interviewing Skills Code (MISC; Version 1.0) rating system, the authors investigated 103 unique MI sessions for substance abuse and found that therapist interpersonal skills were positively associated with client involvement as defined by cooperation, disclosure and expression of affect. An unexpected finding indicated that behaviors inconsistent with MI enhanced the impact of therapist interpersonal skills upon client involvement. Drawbacks to the study include a potential sampling bias and uneven reliability of the variables measured.

Keywords: motivational interviewing, therapeutic alliance, working alliance, confrontation

Motivational interviewing (MI) has been described as a promising treatment for substance abuse disorders because it is well supported by empirical evidence of efficacy (Burke, Arkowitz, & Dunn, 2002; Dunn, Deroo, & Rivara, 2001), it involves reduced clinician time to achieve client gains similar to other interventions (Project MATCH Research Group, 1997a), and it appears to be effective for angry clients who may constitute a large proportion of those seeking treatment in substance abuse programs (Project MATCH Research Group, 1997b). This method is experiencing widespread popularity in the treatment research community as indicated by a review of the National Institutes of Health Computer Retrieval of Information on Scientific Projects database, which reveals 76 projects currently funded to investigate MI for problems such as substance abuse, hypertension, mammogram compliance, and pathological gambling. Although trials of this type can be expected to increase knowledge about the efficacy and generalizability of MI, there is a paucity of work examining underlying causal mechanisms that might explain why this method works as it does.

The originators of this method have stressed the importance of the collaboration between therapist and client as an essential element of MI, rather than merely a factor in creating a favorable context for therapy sessions (Miller & Rollnick, 1991, 2002; Rollnick & Miller, 1995). Therapist empathy, acceptance, genuineness, and egalitarianism are given a high priority in the dissemination of this method (Rollnick & Miller, 1995), and explicit acknowledgment of client autonomy is a core characteristic that is conveyed by specific strategies such as permission seeking prior to giving advice or information. In fact, such an explicit emphasis on the spirit of MI has been so highly prized that other critically important elements of this method, particularly the need to elicit and reinforce client commitment language, are often overlooked.

The emphasis on the specific qualities of the therapeutic relationship within MI is consistent with empirical evidence linking working alliance to improved outcomes in the more general psychotherapy literature. A strong working alliance, usually defined as the quality and strength of the collaborative relationship between therapist and client that encompasses a shared understanding of the goals and tasks of therapy, consistently predicts better client outcomes across a variety of presenting problems and treatment approaches (Barber, Connolly, Crits-Christoph, Gladis, & Siqueland, 2000; Connors, Carroll, DiClemente, Longabaugh, & Donovan, 1997; Horvath & Symonds, 1991; D. J. Martin, Garske, & Davis, 2000). Although the relationship between working alliance and client outcomes is moderate, it is similar to other variables impacting therapy outcomes, and the effect is reliable despite different methods used to assess it. Indeed, the direct and robust nature of the relationship between working alliance and improved client outcomes across disparate theoretical approaches supports the contention that it is a common factor in treatment effectiveness and a worthwhile therapeutic goal in its own right (Bachelor & Horvath, 1999; Luborsky, McLellan, Diguier, Woody, & Seligman, 1997; D. J. Martin et al., 2000).

Although the link between working alliance and client outcomes has been well established, we know less about specific attributes and techniques of the therapist that may strengthen or damage it. Therapist affirmation, understanding, and accurate empathy have all been associated with increased ratings of the quality and strength of the working alliance (Ackerman & Hilsenroth, 2003; Horvath & Bedi, 2002), reflecting a voluminous literature suggesting that being understood and accepted is an integral part of the

Theresa B. Moyers, William R. Miller, and Stacey M. L. Hendrickson, Center on Alcoholism, Substance Abuse, and Addictions, University of New Mexico.

This project was partially supported by National Institute on Drug Abuse Grant R01 DA 13801. We thank J. Scott Tonigan for suggestions regarding statistical analysis.

Correspondence concerning this article should be addressed to Theresa B. Moyers, Center on Alcoholism, Substance Abuse, and Addictions, Psychology Department, University of New Mexico, Albuquerque, NM 87106-1161. E-mail: tmoyers@unm.edu

healing experience for clients (Beutler, Machado, & Allstetter Neufeldt, 1994; Bohart, Elliot, Greenberg, & Watson, 2002). Therapists' ability to actively facilitate the exploration of meaningful information, to convey a sense of confidence, and to provide direction without becoming inflexible are also important correlates of improved alliance (Ackerman & Hilsenroth, 2003). Similarly, investigations of therapist characteristics that may damage the working alliance indicate that inaccurate interpretations (especially those intended to respond to client resistance), inflexible adherence to treatment interventions, and a lack of attention to repairing ruptures in the relationship are associated with diminished quality of the working alliance (Ackerman & Hilsenroth, 2001; Bachelor & Horvath, 1999; Najavits & Strupp, 1994). These findings provide support for the focus within MI upon a warm, accepting, attentive, and empathic therapist using interventions collaboratively with close attention to avoiding the provocation of power struggles that may damage his or her relationship with the client.

If such therapist attributes and behaviors are important determinants of the working alliance, how will they become manifest within the treatment session? What are the specific patterns of interactions that should be seen between therapists and clients that indicate improved or damaged alliance? Miller and Rollnick (1991, 2002) theorized that high levels of therapist interpersonal skill are a necessary precursor for client collaboration during treatment sessions. Specifically, clients should argue less, disclose more information, cooperate more fully, and voluntarily bring their own ideas forward when clinicians are accepting, egalitarian, empathic, and warm. Likewise, direct confrontation is proscribed within an MI approach, as are behaviors such as giving advice without permission, warning, and explicitly directing clients because these behaviors are seen as inconsistent with an approach that attempts to minimize client resistance. According to Miller and Rollnick (2002), increased client collaboration and engagement are necessary precursors to the emergence of client commitment language, which is an important marker for behavior change in MI (Amrhein, Miller, Yahne, Palmer, & Fulcher, 2003).

To evaluate the potential relationships among such variables, the Motivational Interviewing Skills Code (MISC) was developed (Miller, Moyers, Ernst & Amrhein, 2003). The MISC is a behavioral coding system that evaluates therapist and client functioning during MI treatment sessions. Therapists are rated on dimensions of interpersonal skill (e.g., empathy, acceptance, egalitarianism), and clients are rated on four measures of involvement (disclosure, affect, cooperation, and engagement) in the therapeutic process. In addition, specific behaviors of theoretical interest are counted, such as confrontation by therapists and client speech concerning change. These two measures of therapist functioning (interpersonal skill and use of MI-consistent behaviors) are conceptualized as different domains that may or may not overlap. Thus, it is possible for a therapist to convey a sense of empathy without using the MI-consistent skills specified in the MISC. Similarly, a therapist might use many reflections but still score poorly on the global ratings for interpersonal skills.

The MISC has been used both as a treatment integrity measure (Tappin et al., 2000) and to document changes in therapist skill after training in MI (Baer et al., 2004; Miller & Mount, 2001). Moyers, Martin, Catley, Harris, and Ahluwalia (2003) calculated interrater reliability for the MISC (Version 1.0) as it was used to evaluate MI sessions with the goal of smoking cessation. Intraclass

correlations (ICCs) for estimating the reliability of composite global scores from the MISC ranged from .63 to .80, with behavior counts exhibiting reliabilities of .51 to .80. Miller, Yahne, Moyers, Martinez, and Pirritano (2004) used variables derived from the MISC to measure therapist skills in a randomized, controlled trial of dissemination strategies for MI. They found that the MISC had sufficient sensitivity to detect differences in therapist skill between four learning conditions (workshop only, workshop with feedback, workshop with consultation, workshop with both feedback and consultation) across five time periods (baseline, posttraining, 4, 8, and 12 months after training).

Although the MISC has been used to examine the validity of MI interventions and MI training, no studies have used the MISC or any other method to investigate the interpersonal skills of therapists as they relate to client behaviors within MI sessions. Such a process analysis would require a large sample of therapists using MI with varying degrees of expertise. Randomized trials of MI, though plentiful, may be especially poor candidates for such a study because they use relatively few therapists, and variability in expertise is neither desired nor permitted when the goal of the research is to evaluate the efficacy of the clinical method (Cris-Christoph & Mintz, 1991).

The current study was designed to extend the available knowledge about therapist characteristics of particular importance to MI and their influence on client involvement during treatment sessions by examining data from a large dissemination trial conducted to test the value of various strategies for teaching MI discussed above (Miller et al., 2004). This dissemination trial yielded a large sample of audiotaped therapy sessions in which clinicians with varying degrees of expertise in MI conducted sessions with substance abusing clients. Because the focus of the study was investigating how MI was best learned by novice therapists, there was substantial variability in the expertise of clinicians using the MI method in the taped samples. This variability, uncommon in clinical trials, allowed us to observe a full range of therapist skills as well as client responses to them. Using the MISC (Version 1.0) behavioral coding system (Miller et al., 2003), we evaluated both therapist interpersonal skill and client involvement during these MI sessions for treating substance abuse. Consistent with our theoretical model, we hypothesized that therapists' interpersonal skills when using MI would be associated with increased involvement by clients during treatment sessions. Furthermore, we hypothesized that behaviors inconsistent with MI, such as confrontation, would be associated with lower levels of client involvement during treatment sessions, whereas behaviors consistent with MI, such as reflection and affirming, would be associated with increased levels of client involvement.

Method

Dissemination Study

This study is a secondary analysis of data collected as part of Miller et al.'s (2004) Evaluating Methods for Motivational Enhancement Education (EMMEE) project. The EMMEE project was a randomized clinical trial in which clinicians volunteering to learn MI were randomly assigned conditions chosen to represent common strategies for teaching new clinical methods. Participants received a 2-day workshop on MI. In addition, some participants received personalized feedback of session audiotapes, others received six consultation phone calls in the 12 weeks after training, and

some received both feedback and phone consultations. A self-directed learning group, intended as a control condition, received books and tapes only. Outcome measures for EMMEE were derived from audiotaped work samples in which clinicians recorded a session with an actual substance-abusing client at four time points, allowing comparison between pre- and postlearning skills (Miller et al., 2004).

The current project, rather than testing the effectiveness of training, focused on the observed relationship between therapist skills and behaviors and client involvement in the audiotaped work samples. Because we wished to examine events within MI sessions, our analyses combined all the EMMEE participants who had received MI training into a single group without regard to the particular enrichment strategies they had received.

Participants

All study and consent procedures for the EMMEE project were reviewed and approved by the human research Institutional Review Board of the University of New Mexico, and written consent was obtained prior to participation. Participants in the EMMEE project were English-speaking U.S. citizens or permanent residents, and they were all licensed health professionals in counseling, psychology, medicine, nursing, or social work, treating five or more clients with substance use disorders per week in individual counseling sessions. All participants completed the initial 2-day training portion of the study and agreed to submit work sample audiotapes of actual client counseling sessions at 4, 8, and 12 months after the completion of training. Work sample audiotapes were completed within the first or second session of a course of treatment, and no client was taped twice.

Data for this study were drawn from a review of all audiotaped session samples submitted by unique EMMEE participants at the 4-month follow-up point ($n = 103$). This constituted 75% of the total sample originally enrolled for the study. We chose the 4-month window for our analysis because it had the lowest attrition of all posttraining data collection points and could therefore provide the most diverse set of MI skills once training had occurred. Clinicians in this subset were very similar to the larger EMMEE sample. The average age of clinicians was 47.7 years ($SD = 8.1$). Participants were 48% women and 52% men, and the average number of years of postsecondary education was 7.5 ($SD = 3.1$; roughly equivalent to a master's degree). The sample was composed of 7 physicians (7%), 22 social workers (21%), 25 counselors (24%), 5 nurses (5%), 17 psychologists (17%; Bachelors = 2, Masters = 7, PhDs = 8), and 27 (26%) in various other professions. Clinicians had an average of 15 years ($SD = 8$) of general therapeutic experience and 11 years ($SD = 7$) treating substance abuse.

Outcome Measures

Behavioral coding system. The MISC (Version 1.0) is a mutually exclusive and exhaustive behavioral coding system for therapy sessions that evaluates a 20-min segment of audio or videotape of a session of MI. Global assessments of important characteristics are assigned to both the therapist and client using a 7-point Likert scale, where 1 indicates poor levels of the characteristic and 7 indicates exceptional levels of the characteristic. Once global assessments have been made, a second review of the tape is used to tally frequency counts of specific behaviors. The first 20 min of each audiotaped therapy session were coded in the EMMEE project.¹

Clinician measures. For clinicians, six global characteristics were measured: empathy, acceptance, egalitarianism, warmth, genuineness, and overall MI spirit. As specified in the MISC (Version 1.0) manual, empathy was defined as the extent to which the therapist conveyed an understanding of the client's perspective, and acceptance was intended to capture a person-focused unconditional positive regard and respect for the client. Egalitarianism was defined as the therapist's support of the client's autonomy, choice, and responsibility. Therapist warmth was defined as a ten-

dency to be caring, compassionate, and friendly, whereas genuineness reflected the therapist's openness, trustworthiness, and honesty. The therapist's overall adherence to the underlying spirit of the MI method was assessed in the overall MI spirit measure.

In addition to these global measures, frequency counts were made for 12 specific behaviors classified as either MI consistent (MICO) or MI inconsistent (MIIN). For ease of interpretation, aggregate totals (MIIN total and MICO total) were used. The MI-consistent category (MICO total) included advise with permission, affirm, emphasize control, open question, reflect, reframe, and support. The MI-inconsistent (MIIN total) category included confront, direct, warn, advise without permission, and raise concern without permission.

Client measures. To protect the anonymity of the clients participating in the treatment sessions, we gathered no identifying or demographic information about them. Four global measures were assessed. Affect indicated the extent to which the client expressed emotion during the session, and cooperation assessed the extent to which the client was willing to "go with" the therapist. Engagement was defined as the client's active involvement, expression of interest, and seeking of information. Disclosure was defined as the client's willingness to volunteer information about themselves. Table 1 presents summary measures for the clinician and client variables.

Coders

Two undergraduate and six graduate students at the University of New Mexico were trained to use the MISC system. Initial training was conducted using a review of books and tapes introducing the basic principles of MI (Miller & Rollnick, 1991; Miller, Rollnick, & Moyers, 1998). Next, coders were introduced to a series of graded coding tasks with the objective of achieving competence with relatively easy tasks (e.g., differentiating open and closed questions) before moving to more complex ones (e.g., differentiating simple from complex reflections). Weekly meetings were held in which the entire group of coders listened to and coded an exemplar tape, with discrepancies being resolved by expert opinion.

During the training process, 100% of coder tapes were recoded, and consensus coding of tapes in groups continued for the duration of the study during weekly meetings. Coders were considered proficient when they met the following criteria: no more than 1 point difference on global scores and no more than 10% difference in frequency counts for both therapist and client for three consecutive tapes. An average of 40 hr of instruction was needed to achieve proficiency with the MISC, and each tape required an average of 85 min to complete. Coders for this project completed an average of 4.5 tapes per week.

Data Analysis

Because the goal of this study was to examine the relationships among multidimensional constructs such as therapist interpersonal skills and their potential impact on client involvement, we selected structural equation modeling (SEM). The size of our sample met the minimum size requirement for SEM, and analyses were conducted on the covariance matrices using AMOS 4.0 (Arbuckle & Wothke, 1995) with maximum likelihood estimation. Correlations for the variables used in SEM are presented in Table 2.

SEM models were evaluated through three fit indices: chi-square statistic, the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). The chi-square statistic compares the observed covariance matrix to the implied covariance matrix. A significant chi-square statistic would imply that the specified model is significantly worse

¹ A comprehensive description of the MISC (Version 1.0) as well as the scoring manual is available at <http://casaa.unm.edu/codinginst.html>.

Table 1
Summary Measures for Clinician Skills, Client Involvement, MICO Behaviors, and MIIN Behaviors

Measure	<i>M</i>	<i>Mdn</i>	<i>SD</i>	Min	Max
Clinician					
Acceptance	5.28	5	1.33	1	7
Egalitarianism	4.95	5	1.37	1	7
Empathy	5.36	6	1.27	1	7
Genuineness	4.89	5	1.21	1	7
Warmth	5.04	5	1.31	1	7
Spirit	4.90	5	1.33	1	7
Client					
Affect	5.58	6	1.17	2	7
Cooperation	5.93	6	1.11	1	7
Disclosure	5.84	6	1.12	1	7
Engagement	5.75	6	1.22	2	7
MICO					
MICO total	36.39	34	14.70	2	77
Advise ^a	0.21	0	0.74	0	6
Affirm	3.41	3	3.20	0	15
Emphasize control	1.45	1	1.82	0	9
Open questions	8.63	8	6.40	0	45
Reflect	21.17	20	9.44	2	47
Reframe	0.58	0	0.98	0	5
Support	0.93	1	1.18	0	5
MIIN					
MIIN total	1.69	0	3.81	0	26
Confront	0.61	0	1.80	0	11
Direct	0.31	0	1.24	0	11
Advise ^b	0.39	0	0.98	0	5
Raise concern ^b	0.29	0	0.96	0	6
Warn	0.09	0	0.35	0	2

Note. *N* = 103. MICO = motivational interviewing consistent; MIIN = motivational interviewing inconsistent; Min = minimum; Max = maximum.

^a With permission. ^b Without permission.

Table 2
Intercorrelations of Clinician Skills, Client Involvement, MIIN Total, and MICO Total

Measure	1	2	3	4	5	6	7	8	9	10	11	12
Clinician												
1. Acceptance	—											
2. Egalitarianism	.78	—										
3. Empathy	.74	.71	—									
4. Genuineness	.47	.48	.56	—								
5. Warmth	.61	.62	.66	.69	—							
6. Spirit	.80	.76	.78	.52	.70	—						
Client												
7. Affect	.22	.18	.17	.25	.12	.26	—					
8. Cooperation	.24	.24	.32	.46	.15	.31	.33	—				
9. Disclosure	.37	.43	.39	.31	.26	.38	.25	.46	—			
10. Engagement	.37	.29	.38	.25	.23	.48	.27	.56	.42	—		
MIIN												
11. MIIN total	-.57	-.54	-.45	-.24	-.42	-.52	-.03	.04	-.11	-.11	—	
MICO												
12. MICO total	.04	-.03	.21	.12	.21	.14	.03	.13	-.02	.07	.18	—

Note. *N* = 103. MIIN = motivational interviewing inconsistent; MICO = motivational interviewing consistent.

than a just-identified version, so a nonsignificant finding allows confidence in the model constructed. The CFI measure is an evaluation of the fit of the hypothesized model compared to the null model; the null model is one in which variables are assumed uncorrelated. CFI values should be greater than .90, although Hu and Bentler (1999) recommended a more stringent criterion of over .95. RMSEA is a measure of model fit relative to the population covariance matrix with the complexity of the model taken into account. Hu and Bentler specified that the RMSEA should be no larger than .06 to demonstrate good fit.

Results

Representativeness of Sample

To investigate potential differences between this subset and the EMMEE sample, we performed 32 independent *t* tests comparing therapists who continued after the initial training in the dissemination study (and therefore submitted 4-month follow-up tapes) and those who did not. Demographic characteristics as well as baseline MISC codes were evaluated, and a Scheffé correction was used. All comparisons were nonsignificant, indicating no obvious differences between the EMMEE baseline sample and the subset used for analyses in this study.

Reliability of Outcome Variables

Because this study used secondary analysis of existing data, we used the same reliability estimates calculated for the original EMMEE project (Miller et al., 2004). For the EMMEE project, the two coders who had listened to the highest number of tapes were identified. The universe of tapes completed by both of those coders was selected (*n* = 51), and the ICC value was calculated for those tapes and used as an estimate of reliability for the sample. We chose the ICC statistic because it is a more conservative estimate of interrater reliability than is Pearson's *r* in that it adjusts for chance agreement between raters as well as systematic differences between raters. Cicchetti (1994) proposed categories to evaluate the usefulness of ICC in clinical instruments: below .40 = poor, .40-.59 = fair, .60-.74 = good, and .75 or above = excellent.

Reliabilities for this data set are found in Table 3. Note that these ICC estimates compare favorably with those found in Moyers et al.'s (2003) study in that 64% of the variables measured in both studies exhibited higher values in this project. All measures with ICC values of less than .40 were eliminated from further analyses.

SEM

The analytic strategy followed three steps: (a) assessing measurement models, (b) examining main effects between constructs, and (c) exploring interactions among constructs.

Assessing measurement models. A latent construct for clinician interpersonal skills was formed consisting of the measured variables of acceptance, egalitarianism, empathy, warmth, and MI spirit. This construct exhibited good indices of fit, $\chi^2(5, N = 103) = 5.16, p = .40, CFI = 1.0, RMSEA = .02$. The genuineness variable was not included in this construct because of low reliability.

Because it was defined by only three variables, the construct of client involvement (as defined with cooperation, affect, and dis-

closure) was subjected to exploratory factor analysis. For this construct, 56.85% of the variance was explained with the three observed variables. The engagement variable was not included in the client involvement construct because of low reliability.

Examining main effects between constructs. Three main effect models were generated, which isolated the construct of clinician skill and the observed variables of MICO and MIIN and examined each of their relationships to client involvement. Each of these main effect models demonstrated acceptable fit. Main effects of both MICO (standardized $\beta = .12, p = .29$) and MIIN (standardized $\beta = -.02, p = .87$) to client involvement were nonsignificant; however, the relationship of clinician interpersonal skills to client involvement was significant (standardized $\beta = .56, p < .01$).

Exploring interactions between constructs. Interactive models were generated to explore the relationships among clinician interpersonal skills, MIIN behaviors, and MICO behaviors in predicting client involvement. Figure 1 demonstrates the interaction between clinician interpersonal skills and MIIN total behaviors in

Table 3
Reliability Measures of ICC, Pearson Product Moment, and Coder Descriptives

Measure	ICC	Pearson <i>r</i>	Coder 1		Coder 2	
			<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Clinician						
Acceptance	0.5484	0.5574	4.5	1.5	4.5	1.3
Egalitarianism	0.7014	0.7016	4.4	1.6	4.1	1.6
Empathy	0.4758	0.4928	4.7	1.7	5.0	1.3
Genuineness	0.2068	0.2624	4.8	1.2	5.1	0.6
Warmth	0.6665	0.6665	4.5	1.3	4.7	1.3
Spirit	0.6464	0.6464	4.0	1.4	3.8	1.4
Client						
Affect	0.4116	0.4654	5.2	1.6	5.7	1.0
Cooperation	0.5184	0.5225	6.0	1.1	6.0	1.0
Disclosure	0.4998	0.5029	5.5	1.0	6.3	0.9
Engagement	0.3000	0.3404	5.1	1.5	6.3	0.9
MIIN						
MIIN total	0.5791	0.6212	4.1	6.2	2.5	4.2
Confront	0.4223	0.5406	1.4	3.9	0.9	1.9
Direct	0.7411	0.9027	0.9	2.3	0.3	1.2
Advise ^a	0.5207	0.5412	1.2	2.5	0.9	1.9
Raise concern ^a	0.3537	0.3613	0.4	0.8	0.3	0.6
Warn	0.2482	0.2633	0.2	0.5	0.1	0.7
MICO						
MICO total	0.9337	0.9374	35.4	14.9	35.5	13.7
Advise ^b	0.1181	0.1920	0.2	0.8	0.1	0.3
Affirm	0.9015	0.9287	2.5	3.1	1.8	2.5
Emphasize control	0.3213	0.4645	1.4	2.5	0.7	1.0
Open questions	0.8234	0.8621	10.1	8.7	9.4	6.4
Reflect	0.9052	0.9087	19.7	9.7	22.8	10.6
Reframe	0.0969	0.1795	0.4	0.7	0.04	0.2
Support	0.6134	0.6533	1.2	1.5	0.7	1.1

Note. $n = 51$. ICC = intraclass correlation; MIIN = motivational interviewing inconsistent; MICO = motivational interviewing consistent.

^a Without permission. ^b With permission.

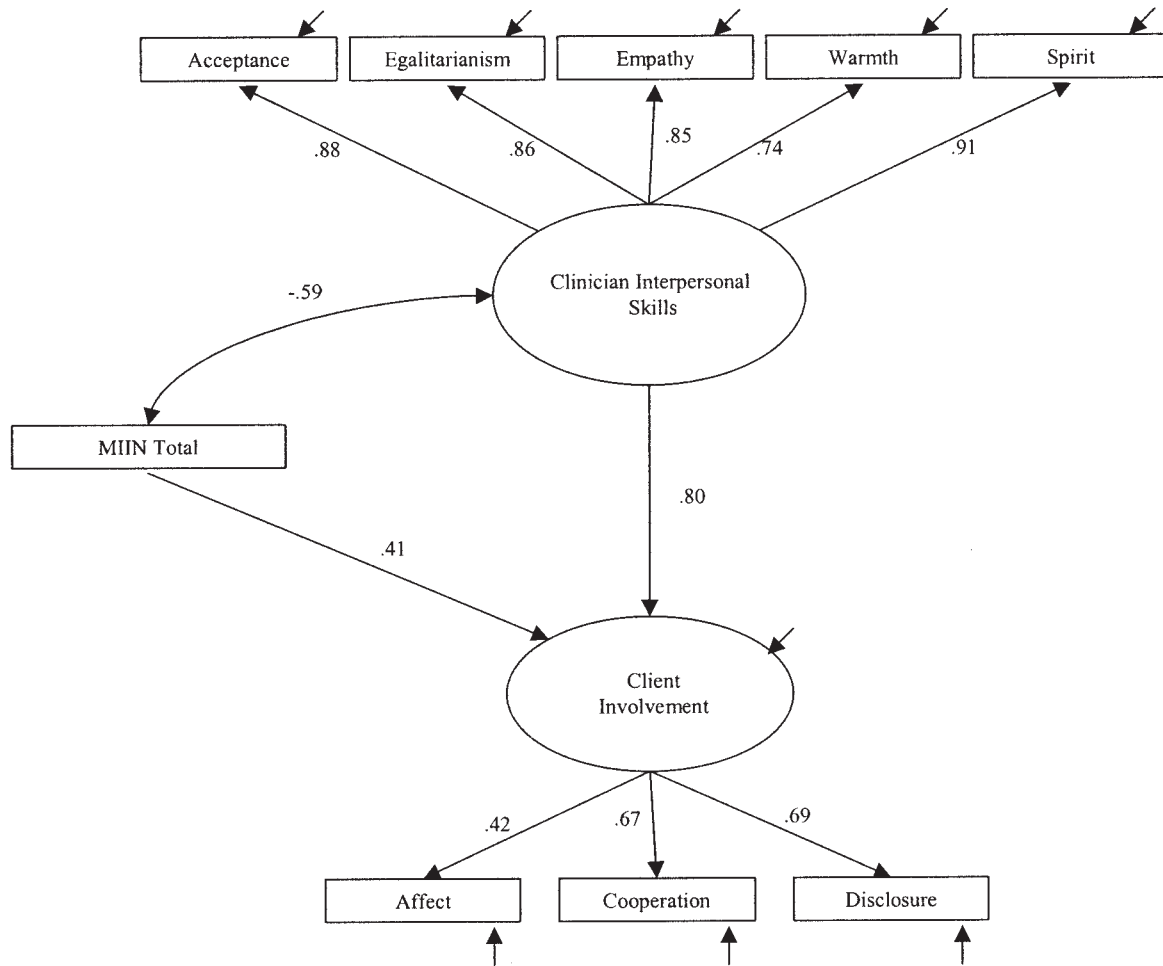


Figure 1. Influence of clinician skills and motivational interviewing inconsistent (MIIN) behaviors on client involvement ($N = 103$). The numbers represent standardized estimates (beta weights for single-headed arrows and correlations for double-headed arrows). Single-headed arrows leading to endogenous variables represent residual error variance.

predicting client involvement. The term *interaction* is used because of the bidirectional relationship between clinician interpersonal skills and MIIN total. Similarly, a double-headed arrow is used to link these two elements in Figure 1.

This model demonstrated excellent fit, $\chi^2(25, N = 103) = 22.67, p = .60, CFI = 1.0, RMSEA = 0.0$, and indicated a significant positive relationship predicting client involvement from MIIN behaviors and clinician interpersonal skills. Although those relationships were positive, the correlation between clinician interpersonal skills and MIIN total behaviors was negative.

A second model was constructed that included all variables in Figure 1 and added MICO behaviors. The fit of this model was acceptable, $\chi^2(31, N = 103) = 36.18, p = .24, CFI = 0.99, RMSEA = 0.0$, however no changes in the relationships between clinician skills, MIIN behaviors, and client involvement were evident when MICO behaviors were added.

In the main effect model predicting client involvement from MIIN behaviors, the relationship was not significant (standardized $\beta = -.02, p = .87$); however, this link became significantly

positive when clinician interpersonal skills were added to the model (standardized $\beta = .41, p < .01$). Similarly, the relationship between clinician interpersonal skills and client involvement was enhanced when the model included MIIN total behaviors (original standardized $\beta = .56$ changed to standardized $\beta = .80$). These results indicate that MIIN behaviors are moderated by clinician interpersonal skills in predicting client involvement during treatment sessions.

Discussion

The data from this study are consistent with the notion that clinician interpersonal skills directly facilitate client collaboration during MI sessions for substance abuse problems. These findings lend support to Miller and Rollnick's (1991, 2002) emphasis upon clinician adherence to the spirit of the MI method rather than to the specific techniques for implementing it and have important implications for training in this method. If therapists' "way of being" is critical to evoking desirable client behaviors during MI sessions,

then increased emphasis on such interpersonal skills as a prerequisite to learning specific MI techniques is warranted. These data also suggest that the previously observed link between therapist interpersonal skill and favorable substance abuse outcomes (Miller, Taylor, & West, 1980; Ritter et al., 2002; Saarnio, 2002; Valle, 1981) may be mediated by increased client engagement and cooperation during treatment sessions.

Although our findings are of most relevance to the implementation of MI, they are also relevant to the more general question regarding the contribution of therapist characteristics to the working alliance. Our data provide support for particular clinician skills that can be expected to increase client collaboration, disclosure, and expression of affect, which are closely tied to conceptualizations of the working alliance (Bachelor & Horvath, 1999; Horvath & Bedi, 2002). More generally, our data are consistent with a large body of research revealing a relationship between therapist interpersonal skills and favorable client outcomes (Lambert & Barley, 1999; Orlinsky, Grawe, & Parks, 1994) regardless of the theoretical intervention that is used (Norcross, 1999).

These data failed to support our hypothesis concerning the relationship between MIIN behaviors and client involvement. Specifically, therapist instances of confrontation, warning and directing clients did not decrease client involvement in the MI session as proposed by Miller and Rollnick (2002) and reported by Miller et al. (1980). To the contrary, these proscribed behaviors showed an unexpected positive relationship with client participation when, and only when, they were observed in the larger context of clinician interpersonal skills. Furthermore, the statistical relationship of clinician interpersonal skills with client involvement was enhanced in the presence of these MIIN behaviors. This raises the possibility that therapist behaviors that have traditionally been viewed as inconsistent with the spirit of MI are in fact compatible with this method if clinicians convey them with the requisite interpersonal skills.

One possible explanation for this unexpected finding focuses on the therapist quality of genuineness or authenticity, one of the necessary and sufficient conditions of change proposed by Rogers (1957), and one which he hypothesized to be particularly important in facilitating the "depth of patient involvement and experiencing in therapy sessions" (Klein, Kolden, Michels, & Chisholm-Stockard, 1999, p. 208). Within our behavioral coding system, attempts by the therapist to shame, accuse, or argue with clients are obviously coded as MIIN behaviors. However, the MIIN code is also assigned when therapists directly disagree with what clients have just said, when they attempt to correct client statements, or when they advise a course of action without first asking permission. Reflecting the MI emphasis on collaboration and autonomy, actions such as directing, giving advice, or pointing out drawbacks to a client's plan are discouraged. For therapists high in interpersonal skills, however, such honesty may be consistent with a genuine and authentic stance that is well received by clients and therefore elicits cooperation and increased expression of affect and disclosure.

The observed interaction between therapist interpersonal skills and confrontation, advising and warning in our data suggests the possibility that MIIN behaviors, if they occur within an empathic, accepting, and egalitarian interpersonal context, convey a sense of honesty and transparency on the part of the clinician that may facilitate, rather than suppress, the alliance with the client. Because previous studies have clearly indicated the potentially destructive

impact of therapist behaviors such as confrontation and advice giving (Ackerman & Hilsenroth, 2001; Miller, Benefield, & Tonigan, 1993), more research will be needed to understand the interaction between therapist techniques such as confrontation, warning, and advising and the interpersonal context in which they are best used or avoided. It is worth noting that therapist genuineness, although coded as a global measure for this project, was too unreliable for inclusion in our structural equation model. This is consistent with other research indicating that therapist genuineness is difficult to measure objectively and reliably (Klein et al., 1999), and we conclude that it may not be well represented in the MISC.

Another question raised by these findings concerns the impact of both therapist interpersonal skills and MIIN behaviors on other hypothesized causal mechanisms for MI. Even if MIIN behaviors, for example, do somehow interact with clinician characteristics to facilitate client involvement during sessions, their impact on client commitment language is still of concern. This is a critical point, because commitment language has been linked with improved substance use outcomes and is a hypothesized causal mechanism for the efficacy of MI (Miller & Rollnick, 2004). Given the value of client language in predicting posttreatment substance use (Amrhein et al., 2003; T. Martin & Moyers, 2003), research is needed to investigate the potential impact of these various therapist behaviors upon such client speech. Revisions of the MISC have recently been made to include indices of client language that will allow such analyses (see Miller et al., 2003), and they are currently in progress.

Several caveats are in order when considering the results of this study. First, the audiotaped sample provided by the clinicians suffers from an obvious selection bias. This was an intended feature of the design of the larger dissemination study, because we were asking clinicians to give us evidence that they could use MI, not that they routinely did so. In that context, selecting the "best shot" tape was desirable, but such a sampling strategy obviously reduces the generalizability of these data. A more random sample of tapes might not render the same importance to clinician characteristics as that found in our sample. That is, the interpersonal skills and behaviors we have measured may be one way, but not the most powerful way, of describing the therapists' impact in MI sessions. Similarly, the manner in which the sample was constructed (the first 20 min of the first or second therapy session) might have influenced the observed relationships between therapist skills and client involvement such that it would not be seen either later in the same session or further along in the course of therapy.

Another concern regarding this study was the uneven interrater reliability for measuring the full range of clinician and client characteristics from the MISC. Though most of our measures exhibited even better reliability than did previous investigations (Moyers et al., 2003) some characteristics, such as client engagement and therapist genuineness, were less dependably assessed and were eliminated from our analyses. It is possible that the elimination of variables that were unreliably measured in this particular project may have led to incomplete conclusions about the relationship of particular MI skills and client collaboration.

Finally, we note that the coders in this study were not blind to all of the proposed relationships between clinician characteristics and client involvement. Although they did not know the specific hypotheses of this study, they did receive instruction to familiarize them with the therapeutic method of MI so that they might recognize both the presence and absence of it during the coding task. It

is possible that a bias was introduced, such that coders observing instances of optimal clinician characteristics were subsequently more likely to expect clients to be more cooperative and disclosing because of their prior knowledge of the theory underlying MI. The presence of such a bias seems less likely given the unexpected finding concerning the relationship between MI-inconsistent behaviors and client involvement by our coders. This finding contradicted our hypotheses; it is unlikely that any preexisting expectation on the part of coders could explain it.

One possible solution to eliminate such a potential bias in future investigations of MI would be masking coders to the type of treatment they are evaluating, although this might also restrict the ability to distinguish characteristic examples of the method being used. Alternatively, therapist and client variables could be coded by different raters, but this might introduce sources of variability across coders which could obscure potential findings. A more practical strategy for detecting a potential bias may be the inclusion of imposter tapes (intentionally manufactured to be discordant in therapist skills and client collaboration) to test the coder's ability to detect theoretically incongruent interactions.

Taken as a whole, these results provide support for further investigation of therapist skills and behaviors as an influence on client involvement more generally and indicate the importance of specific dimensions that are relevant to the use of MI. They provide support for emphasizing the spirit of MI when training this method (Rollnick & Miller, 1995) and for careful acquisition of foundational interpersonal skills on the part of therapists that can be expected to strengthen their alliance with clients (Bachelor & Horvath, 1999). Future research is needed to explore the possible links between these in-session interactions and posttreatment client outcomes.

References

- Ackerman, S. J., & Hilsenroth, M. J. (2001). A review of therapist characteristics and techniques negatively impacting the therapeutic alliance. *Psychotherapy, 38*, 171–185.
- Ackerman, S. J., & Hilsenroth, M. J. (2003). A review of therapist characteristics and techniques positively impacting the therapeutic alliance. *Clinical Psychology Review, 23*, 1–33.
- Amrhein, P., Miller, W. R., Yahne, C. E., Palmer, M., & Fulcher, L. (2003). Client commitment language during motivational interviewing. *Journal of Consulting and Clinical Psychology, 71*, 862–878.
- Arbuckle, J. L., & Wothke, W. (1995). *AMOS 4.0 user's guide*. Chicago: Smallwaters Corporation.
- Bachelor, A., & Horvath, A. (1999). The therapeutic relationship. In M. A. Hubble, B. L. Duncan, & S. D. Miller (Eds.), *The heart and soul of change: What works in therapy* (pp. 133–178). Washington, DC: American Psychological Association.
- Baer, J. S., Rosengren, D. B., Dunn, C. W., Wells, E. A., Ogle, R. L., & Hartzler, B. (2004). An evaluation of workshop training in motivational interviewing for addiction and mental health clinicians. *Drug and Alcohol Dependence, 73*(1), 99–106.
- Barber, J. P., Connolly, M. B., Crits-Christoph, P., Gladis, L., & Siqueland, L. (2000). Alliance predicts patients' outcome beyond in-treatment change in symptoms. *Journal of Counseling and Clinical Psychology, 68*, 1027–1032.
- Beutler, L. E., Machado, P. P. M., & Allstetter Neufeldt, S. A. (1994). Therapist variables. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change* (pp. 229–269). New York: Wiley.
- Bohart, A. C., Elliot, R., Greenberg, L. S., & Watson, J. C. (2002). Empathy. In J. C. Norcross (Ed.), *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients* (pp. 89–108). New York: Oxford University Press.
- Burke, B. L., Arkowitz, H., & Dunn, C. (2002). The efficacy of motivational interviewing: What we know so far. In W. R. Miller & S. Rollnick (Eds.), *Motivational interviewing: Preparing people to change* (2nd ed., pp. 217–250). New York: Guilford Press.
- Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment, 6*, 284–290.
- Connors, G. J., Carroll, K. M., DiClemente, C. C., Longabaugh, R., & Donovan, D. M. (1997). The therapeutic alliance and its relationship to alcoholism treatment participation and outcome. *Journal of Consulting and Clinical Psychology, 65*, 588–598.
- Crits-Christoph, P., & Mintz, J. (1991). Implications of therapist effects for the design and analysis of comparative studies of psychotherapies. *Journal of Consulting and Clinical Psychology, 59*, 20–26.
- Dunn, C., Deroo, L., & Riva, F. (2001). The use of brief interventions adapted from motivational interviewing across behavioral domains: A systematic review. *Addiction, 96*, 1725–1742.
- Horvath, A. O., & Bedi, R. P. (2002). The alliance. In J. C. Norcross (Ed.), *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients* (pp. 37–69). New York: Oxford University Press.
- Horvath, A. O., & Symonds, B. D. (1991). Relation between working alliance and outcome in psychotherapy: A meta-analysis. *Journal of Counseling Psychology, 38*, 139–149.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55.
- Klein, M. H., Kolden, G. C., Michels, J. L., & Chisholm-Stockard, S. (1999). Congruence. In J. Norcross (Ed.), *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients* (pp. 195–215). New York: Oxford University Press.
- Lambert, M. J., & Barley, D. E. (1999). Research summary on the therapeutic relationship and psychotherapy outcome. In J. Norcross (Ed.), *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients* (pp. 17–32). New York: Oxford University Press.
- Luborsky, L., McLellan, A. T., Diguier, L., Woody, G., & Seligman, D. (1997). The psychotherapist matters: Comparison of outcomes across twenty-two therapists and seven patient samples. *Clinical Psychology: Science and Practice, 4*(1), 53–65.
- Martin, D. J., Garske, J. P., & Davis, K. M. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Counseling and Clinical Psychology, 68*, 438–450.
- Martin, T., & Moyers, T. B. (June, 2003). *Expressions of resistance to change at intake predict abstinence one year later*. Poster session presented at the annual meeting of the College of Problems on Drug Dependence, Ft. Lauderdale, FL.
- Miller, W. R., Benefield, G., & Tonigan, J. S. (1993). Enhancing motivation for change: A controlled comparison of two therapist styles. *Journal of Consulting and Clinical Psychology, 61*, 455–461.
- Miller, W. R., & Mount, K. A. (2001). A small study of training in motivational interviewing: Does one workshop change clinician and client behavior? *Behavioural and Cognitive Psychotherapy, 29*, 457–471.
- Miller, W. R., Moyers, T. B., Ernst, D., & Amrhein, P. (2003). *Manual for the Motivational Interviewing Skills Code (MISC) v. 2.0*. Retrieved, 2003, from <http://casaa.unm.edu/codinginst.html>.
- Miller, W. R., & Rollnick, S. (1991). *Motivational interviewing: Preparing people to change addictive behaviors*. New York: Guilford Press.
- Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people to change* (2nd ed.). New York: Guilford Press.
- Miller, W. R., & Rollnick, S. (2004). Talking oneself into change: Moti-

- vational interviewing, stages of change, and therapeutic process. *Journal of Cognitive Psychotherapy: An International Quarterly*, 18, 299–308.
- Miller, W. R., Rollnick, S., & Moyers, T. B. (1998). *Motivational interviewing: Professional training videotape series*. University of New Mexico: Center on Alcoholism, Substance Abuse, and Addictions.
- Miller, W. R., Taylor, J. C., & West, J. C. (1980). Focused versus broad-spectrum behavior therapy for problem drinkers. *Journal of Consulting and Clinical Psychology*, 48, 590–601.
- Miller, W. R., Yahne, C. E., Moyers, T. B., Martinez, J., & Pirritano, M. (2004). A randomized trial of methods to help clinicians learn motivational interviewing. *Journal of Consulting and Clinical Psychology*, 72, 1050–1062.
- Moyers, T. B., Martin, T., Catley, D., Harris, K. J., & Ahluwalia, J. S. (2003). Assessing the integrity of motivational interviewing: Reliability of the motivational interviewing skills code. *Behavioural and Cognitive Psychotherapy*, 31, 177–184.
- Najavits, L. M., & Strupp, H. (1994). Differences in the effectiveness of psychodynamic therapists: A process-outcome study. *Psychotherapy*, 31, 114–123.
- Norcross, J. (1999). Empirically supported therapy relationships. In J. Norcross (Ed.), *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients* (pp. 3–16). New York: Oxford University Press.
- Orlinsky, D. E., Grawe, K., & Parks, B. K. (1994). Process and outcome in psychotherapy: Noch einmal. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change* (pp. 257–310). New York: Wiley.
- Project MATCH Research Group. (1997a). Matching alcoholism treatments to client heterogeneity: Project MATCH posttreatment drinking outcomes. *Journal of Studies on Alcohol*, 58, 7–29.
- Project MATCH Research Group. (1997b). Project MATCH secondary a priori hypotheses. *Addiction*, 92, 1671–1698.
- Ritter, A., Bowden, S., Murray, T., Ross, P., Greeley, J., & Peard, J. (2002). The influence of the therapeutic relationship in treatment for alcohol dependency. *Drug and Alcohol Review*, 21, 261–268.
- Rogers, C. (1957). The necessary and sufficient conditions for therapeutic personality change. *Journal of Consulting Psychology*, 21, 95–103.
- Rollnick, S., & Miller, W. R. (1995). What is motivational interviewing? *Behavioural and Cognitive Psychotherapy*, 23, 325–334.
- Saarnio, P. (2002). Factors associated with dropping out from outpatient treatment of alcohol-other drug abuse. *Alcoholism Treatment Quarterly*, 20(2), 17–33.
- Tappin, D. M., McKay, C., McIntyre, D., Gilmour, W. H., Cowan, S., Crawford, F., et al. (2000). A practical instrument to document the process of motivational interviewing. *Behavioural and Cognitive Psychotherapy*, 28, 17–32.
- Valle, S. K. (1981). Interpersonal functioning of alcoholism counselors and treatment outcome. *Journal of Studies on Alcohol*, 42, 783–790.

Received March 17, 2004

Revision received October 6, 2004

Accepted October 12, 2004 ■

New Editors Appointed, 2007–2012

The Publications and Communications (P&C) Board of the American Psychological Association announces the appointment of three new editors for 6-year terms beginning in 2007. As of January 1, 2006, manuscripts should be directed as follows:

- *Journal of Experimental Psychology: Learning, Memory, and Cognition* (www.apa.org/journals/xlm.html), **Randi C. Martin, PhD**, Department of Psychology, MS-25, Rice University, P.O. Box 1892, Houston, TX 77251.
- *Professional Psychology: Research and Practice* (www.apa.org/journals/pro.html), **Michael C. Roberts, PhD**, 2009 Dole Human Development Center, Clinical Child Psychology Program, Department of Applied Behavioral Science, Department of Psychology, 1000 Sunnyside Avenue, The University of Kansas, Lawrence, KS 66045.
- *Psychology, Public Policy, and Law* (www.apa.org/journals/law.html), **Steven Penrod, PhD**, John Jay College of Criminal Justice, 445 West 59th Street N2131, New York, NY 10019-1199.

Electronic manuscript submission. As of January 1, 2006, manuscripts should be submitted electronically through the journal's Manuscript Submission Portal (see the Web site listed above with each journal title).

Manuscript submission patterns make the precise date of completion of the 2006 volumes uncertain. Current editors, Michael E. J. Masson, PhD, Mary Beth Kenkel, PhD, and Jane Goodman-Delahunty, PhD, JD, respectively, will receive and consider manuscripts through December 31, 2005. Should 2006 volumes be completed before that date, manuscripts will be redirected to the new editors for consideration in 2007 volumes.

In addition, the P&C Board announces the appointment of **Thomas E. Joiner, PhD** (Department of Psychology, Florida State University, One University Way, Tallahassee, FL 32306-1270), as editor of the *Clinician's Research Digest* newsletter for 2007–2012.