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The Effectiveness and Applicability of Motivational Interviewing: A Practice-Friendly Review of Four Meta-Analyses



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This article reviews the research support for Motivational interviewing (MI) so that practitioners can make informed decisions about the value and applicability of MI in their clinical work. We highlight the evidence from the three published meta-analyses of MI and a recent meta-analysis that we completed. MI is significantly (10–20%) more effective than no treatment and generally equal to other viable treatments for a wide variety of problems ranging from substance use (alcohol, marijuana, tobacco, and other drugs) to reducing risky behaviors and increasing client engagement in treatment. Although most client-related variables are unrelated to outcomes (e.g., age, gender, severity), some decisions about treatment format (e.g., individual vs. group) are important. For example, relying solely on group-delivered MI appears to be less effective than one-on-one MI, whereas delivering MI with problem feedback is likely to generate better outcomes for some problems than MI alone. © 2009 Wiley Periodicals, Inc. *J Clin Psychol: In Session* 65: 1232–1245, 2009.

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Motivational interviewing (MI; Miller & Rollnick, 2002) is both a treatment philosophy and a set of methods employed to help people increase intrinsic motivation by exploring and resolving ambivalence about behavioral change. In the past decade, MI has become a well-recognized brand and has been used in psychotherapy, medicine, addictions, public health, and beyond. However, clinical popularity does not necessarily equate with evidentiary support.

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In this article, we review the research support for MI so that practitioners can make informed decisions about the value of MI in their clinical work. The questions we pose and the answers we offer in this article start broadly—with the overarching theory and whether MI works—and then move toward more specific aspects of the evidence for MI, such as in what format, by whom, and for whom it may work, as well as how practitioners can best learn this therapeutic approach. In this way, we hope to address Gordon Paul's (1967, p. 111) classic question: "What treatment, by whom, is most effective for this individual, with that specific problem, and under which set of circumstances?"

Does MI Have a Cohesive Theoretical Base?

Yes. An important characteristic of a psychotherapy system is that it possesses a theoretical base rather than simply being a collection of techniques (Prochaska & Norcross, 2007). A theoretical base provides a roadmap by which practitioners and researchers can direct assessment, conceptualization, intervention, and evaluation. Whereas MI does not advance a wholly new theory about human functioning, it draws on aspects of several other theories in order to understand one essential component of the behavior change process: motivation.

To highlight the novelty in the MI conceptualization of human motivation, consider three simple mathematical equations that illustrate how behavioral change might occur.

$$\text{Knowledge} = \text{Change} \quad (1)$$

Many professionals interested in helping people make behavioral changes assume that supplying knowledge is sufficient. Well-intended practitioners advise people who are overweight to eat better and exercise more. Parents who are inconsistent in following through with limit setting are instructed to be clear and consistent with rules. Individuals addicted to drugs are told to avoid situations that will trigger cravings. However, seasoned practitioners realize that even very good advice often fails to generate behavioral change. After all, too many of us and the people we counsel continue to engage in unhealthy behaviors despite *clearly knowing* what we should do and *how* to change. What is lacking is the motivation to *apply* that knowledge.

Consider, therefore, a second equation:

$$\text{Knowledge} \times \text{Motivation} = \text{Change} \quad (2)$$

Motivation is an essential ingredient to the change process, as any amount of knowledge multiplied by zero motivation will fail to produce any change. Research has shown that a client's motivation to change is significantly influenced by the therapist's relational style (Norcross, 2002), such that the therapist's behavior may even determine a client's noncompliance with change suggestions (e.g., Beutler & Harwood, 2002; Miller, Benefield, & Tonigan, 1993; Patterson & Forgatch, 1985). MI posits that a good working relationship in which clients are viewed as the expert on his or her own life serves to minimize resistance to change and thereby enhances motivation as shown in a third equation.

$$\frac{\text{Knowledge} \times \text{Motivation}}{\text{Resistance}} = \text{Change} \quad (3)$$

MI therapists, thus, seek to build a therapy relationship similar to the one described by Carl Rogers (1980) to promote a strong, collaborative relationship with clients and reduce resistance to change (Miller & Rollnick, 2004).

In addition to a supportive relationship, MI adds a directive component in which the therapist works toward specific goals of reducing client ambivalence to directly increase motivation to change a target behavior. To do so, MI builds on cognitive dissonance theory (Festinger, 1957) and self-perception theory (Bem, 1967), both of which describe processes related to attitudinal changes. MI attempts to foster dissonance between a client's unhealthy status quo behaviors (e.g., binge drinking, smoking) and their own healthy goals (e.g., live a long life, responsible living, be a good partner) in the hope that focusing on the dissonance will motivate the client to change. Similarly, MI encourages client speech that favors change—what is termed *change talk*—, which is based on Bem's (1967) theory that hearing oneself argue for change will increase motivation to change (Amrhein, Miller, Yahne, Palmer, & Fulcher, 2003).

In short, MI successfully draws from a variety of theories and lines of research to explain why and how it works and to pose testable hypotheses. We now turn to an examination of its empirical evidence base.

Has Controlled Research Examined the Effectiveness of MI?

Yes. A large and growing body of research has examined the effectiveness of MI as can be seen from our recent literature search. In March 2009, we entered the term “motivational interviewing” into PsycInfo and divided results into three 10-year spans: There were only 6 references from 1980 to 1989, which grew to 78 between 1990 and 1999, and then to 707 between 2000 and 2009. MI has clearly generated a substantial and increasing body of evidence.

One way to gauge both the quality of research on a particular treatment and its effectiveness is through meta-analytic reviews, which provide for an efficient glimpse at its evidence base. For this review, we highlight the evidence from the three published meta-analyses of MI and a recent meta-analysis we completed. Burke, Arkowitz, and Menchola (2003) published the first meta-analysis of MI. Their study included 30 controlled clinical trials of individually-delivered MI for a wide range of problem behaviors, including drinking, drug use, risky sexual behaviors, and diet and exercise. The second published meta-analysis was by Hettrema, Steele, and Miller (2005), which included 72 studies; in our view, the results from this review are somewhat limited because it included studies that did not utilize designs that could isolate the unique effect of MI (e.g., comparing a MI-CBT blend with no treatment). Vasilaki, Hosier, and Cox (2006) completed the third meta-analysis, which included 15 studies that specifically targeted MI's ability to reduce problem drinking. The fourth and most recent meta-analysis, conducted by the authors of this article (Lundahl, Tollefson, Kunz, Brownell, & Burke, 2009), included 119 studies that used methods that could isolate the unique contribution of MI relative to either a control group or a comparison group across multiple problems. Note that there was considerable overlap amongst the four meta-analyses in terms of included studies.

In answering the questions below, we typically present two types of numbers. First, we present effect sizes (e.g., Cohen's *d*; Lipsey & Wilson, 2001). A positive effect size represents desirable change, in standard deviation units, in the treatment group relative to the comparison group (Lipsey & Wilson, 2001). Convention holds that an effect size in the 0.20 range is small, 0.50 is medium, and 0.80 is large (Cohen, 1988). Note that the term “small effect size” should not be confused with

“insignificant.” In fact, an effect size of about 0.20 represents a 10% change in the success rate. (If your yearly income went up by 10%, would it make a difference?) Second, we present a difference in success rate which converts the effect size to a more interpretable statistic that represents percentage of gain relative to the comparison group (Rosenthal, Rosnow, & Rubin, 2000). For example, if MI was 20% more effective in reducing drinking days compared with a control group, one would expect that for every 100 people in the control group who reduced drinking days, there would be 120 from the MI sample who did the same. Note that the differences in success rates reported herein were extrapolated from data given in each meta-analysis as none of the reviews reported such information directly.

Did the Type of Comparison Group Influence Outcomes?

Yes. The four meta-analyses divided results by comparison type: Some studies utilized a “weak comparison group,” such as a waitlist or no treatment group, whereas other studies utilized a “strong comparison group” in which MI was contrasted with another active treatment. MI was consistently and significantly better than weak alternatives and about equal to, though in some cases better than, strong alternative treatments ranging from cognitive-behavioral therapy (CBT) to 12-step programs. Table 1 presents the overall effect sizes and differences in success rate from the four meta-analyses.

How Effective is MI Compared With Weak Comparison Groups?

When compared with weak comparison groups—waitlist or no treatment—MI’s average effect sizes were solidly in the small yet statistically significant range (Cohen, 1988), with a low of 0.28 and a high of 0.40, demonstrating the effectiveness of MI compared with the weak comparison groups. With regard to difference in success rate, one could expect 14% to 20% of the treated sample to do better than an untreated sample after an average of only two or three sessions of MI.

How Effective is MI Compared With Strong Comparison Groups?

MI is about equally effective and potentially more effective. The results are mixed across the four meta-analyses. All studies showed positive effect sizes, though results

Table 1
Overall (Omnibus) Results of Motivational Interviewing Across Four Meta-Analyses

	Weak comparison groups		Strong comparison groups	
	<i>d</i> (SD)	Difference in success rate (%)	<i>d</i> (SD)	Difference in success rate (%)
Burke et al. (2003)	0.35 (0.22)	17	0.04 (0.07)	2
Hettema et al. (2005)	0.27 (0.17)	13	0.32 (0.35)	15
Vasilaki et al. (2006)	0.40 (0.46)	19	0.27 (0.26)	13
Lundahl et al. (2009)	0.28 (0.16)	14	0.09 (0.16)	5

Note. *d* is Cohen’s effect size; SD = standard deviation. All values taken from original meta-analyses. Difference in success rate values were extrapolated using conversion tables from *d* to percent success. Weak comparison groups included no treatment, waitlist, and information only groups. Strong comparisons included head-to-head comparisons of motivational interviewing with either a treatment-as-usual group or a specified treatment.

from Lundahl et al. (2009) and Burke et al. (2003) showed effect sizes near zero when MI was compared with active treatments. The other meta-analyses suggested more promise, though the Vasilaki et al. (2006) study focused only on alcohol use disorders and the Hettema et al. (2005) study may have been slightly inflated due to the potential confabulation of MI with other treatment effects. Overall, the evidence suggests MI is as effective but not greatly more so than other active treatments, a finding that is consistent with the Dodo bird verdict in psychotherapy research (e.g., Wampold et al., 1997). Note, however, that MI was typically shorter than the strong alternative treatments, by between 101 and 180 minutes (two to three sessions) on average, a point to which we return below.

For What Problems is MI Effective?

MI originated in the treatment of substance use disorders in the early 1980s, but it has been applied to a number of other problem areas since then. Table 2 provides a brief list of the main problems targeted by MI across the four meta-analyses, with effect sizes organized by comparison group. Below we provide narrative descriptions and interpretations for each listed outcome area.

Alcohol-Related Problems

MI is effective for treating alcohol-related problems. Most of the empirical studies reviewed examined some form of alcohol use problem, with each meta-analysis

Table 2
Effect Sizes Across Outcomes, Studies, and Comparison Group Type Immediately Posttreatment

Outcome	Meta-analysis							
	Burke (2003)		Hettema (2005)		Vasilaki (2006)		Lundahl (2009)	
	Comparison group		Comparison group		Comparison group		Comparison group	
	Strong	Weak	Strong	Weak	Strong	Weak	Strong	Weak
Alcohol	0.09	0.39	0.11	0.38	0.43	0.18	0.03	0.20
Marijuana	–	–	–	–	–	–	0.07	0.30
Tobacco	–	0.11	0.17	0.13	–	–	–0.21	0.35
All Other Drugs	–0.01	0.56	0.12	0.45	–	–	–0.12	0.16
Risky bx	–	0.01	0.94	0.12	–	–	0.10	0.15
Increase healthy bx	–	–	–	–	–	–	0.30	0.19
Diet/Exercise	–	0.53	0.78	–	–	–	–	–
Social fxning (re: drugs)	–	0.47	–	–	–	–	–	–
Tx compliance/engage	–	–	–	0.10	–	–	0.12	0.35
Increased motivation	–	–	–	–	–	–	0.23	0.24
Gambling	–	–	0.24	0.46	–	–	–	0.39
Eating disorder	–	–	–0.07	–	–	–	–	0.18
Emotional well-being	–	–	–	–	–	–	0.05	0.33
Parenting practices	–	–	–	–	–	–	0.29	0.29
Confidence to change	–	–	–	–	–	–	0.33	0.15

Note. Tx = treatment; bx = behavior; engage = engagement; fxning = functioning. Data taken from tables in original manuscripts: For Burke et al. (2003), values taken from Table 5; Hettema et al. (2005) Table 1; Vasilaki et al. (2006) Tables 5 and 6; and Lundahl et al. (2009) Table 2. Risky behavior included activities related to HIV or sexually transmitted diseases. For Burke et al. (2003), data across two outcome groups were combined. Not all data from each table were included in the present table.

including 17, 31, 15, and 68 such studies, respectively (Burke et al., 2003; Hettema et al., 2005; Vasilaki et al., 2006; Lundahl et al., 2009). MI is at least as effective as other treatments for problem drinking and significantly better than no treatment. The difference in success rates for clients who received MI compared with untreated samples is between 10% and 20% greater. When compared with existing treatments, the difference in success rates ranged from no advantage (0%) to about a 20% advantage for MI, with three of four meta-analyses being closer to no advantage.

Marijuana Dependence

Of the four meta-analyses, only one (Lundahl et al., 2009) separated studies examining marijuana ($n = 17$) from other drug use problems. The findings are encouraging in that MI is at least as effective as other treatments and significantly better than no intervention ($d = 0.30$), with an increased success rate of about 15% for those receiving MI over those who did not receive treatment.

Tobacco

Compared with no intervention, MI had a positive impact on tobacco cessation with increased success rates ranging from about 5% to about 17% (see Table 2 for effect sizes). Findings were mixed with regard to active treatments, however. Our recent review (Lundahl et al., in press) found statistically significant negative results, suggesting that other active treatments were approximately 10% more successful than MI, whereas Hettema et al. (2005) found the opposite pattern. At this point, we can confidently say that MI is better than no treatment in promoting tobacco cessation, and yet we would not recommend that it take the place of other established treatments.

Other Drugs (e.g., Cocaine and Heroin)

Here, the evidence suggests that MI is significantly more effective than no treatment, although relatively few primary studies have examined drug use other than alcohol, tobacco, or marijuana (e.g., 5 in Burke et al., 2003 and 17 in Lundahl et al., 2009). Increased success rates for MI versus weak alternatives ranged from a low of about 8% to nearly 28% in three of the meta-analyses. Compared with other active drug interventions, however, two of the three meta-analyses (recall that Vasilaki et al., 2006, included only alcohol studies) produced negative effect sizes for MI that were not significantly different from zero. Once again, MI appears to be equal to but not better than other well-established drug treatments.

Reducing Risky Behaviors and Increasing Healthy Behaviors

Relatively few studies have examined MI's effectiveness in reducing risky behaviors, such as engaging in unprotected sex or sharing needles. The meta-analyses included only 2 to 10 studies each. From these, the evidence suggests that MI is promising in this realm, with a large range of results (from $d = 0.10$ to 0.94 for MI vs. weak alternatives). Three of the four meta-analyses examined some version of promoting healthy behaviors, such as increased exercise or better eating habits, all of which suggest that MI is an effective, promising method.

Engaging Clients in Treatment

The most recent meta-analysis (Lundahl et al., 2009) identified 34 studies that measured treatment engagement. The advantage varied from 5% to 15% for samples receiving MI compared with those in a no treatment condition. Samples receiving MI were slightly but not significantly advantaged over those who received an alternative active intervention ($d = 0.12$; roughly a 5% difference in success rate).

Other Problems

As can be seen in Table 2, MI has been applied to many other areas including gambling, eating disorders (e.g., bingeing, purging), increasing healthy behaviors (e.g., exercise, healthy eating), parenting practices, and emotional well-being. In each of these areas, MI shows promise, and yet few empirical studies have investigated outcomes, thereby limiting confident inference making. For example, the latest meta-analysis identified three studies that applied MI to gambling-related problems; the effect sizes are promising, with d s ranging from 0.24 to 0.46, but inconclusive due to the low number of studies.

In light of these findings, how can practitioners decide about applying MI to problems that are either understudied or unstudied? The pattern of results across the four meta-analyses clearly indicate that MI is likely to confer at least a 10% advantage in success rates versus weak or no treatment and to fare as well as other established treatments, possibly in less time. In light of this, employing MI in new areas—especially integrating it with other treatments—may bear fruit as it has in its recent application as an adjunct to CBT in the treatment of anxiety disorders (Hal Arkowitz, personal communication, November 2008; see also other articles in this special issue; Westra & Dozois, 2006; Westra, Arkowitz, & Dozois, 2008).

What Did Project MATCH Find for MI?

Project MATCH (1997, 1998) remains one of the largest psychotherapy outcome studies conducted to date and involved two separate samples: 952 clients in five outpatient substance abuse clinics and 774 clients receiving aftercare treatment following an episode of inpatient or intensive day hospital treatment. The overarching goal was to determine whether various subgroups of alcohol-dependent clients would respond differently to three manual-guided, individual treatments.

The MI-based treatment developed for this study was termed motivational enhancement therapy (MET; Miller, Zweben, DiClemente, & Rychtarik, 1992), which involved four sessions offered at Weeks 1, 2, 6, and 12 and is distinct from “classic MI” only in the addition of problem feedback. The first two sessions comprised a Drinker’s Check-Up (Miller, Sovereign, & Krege, 1988), which combined MI with structured personal feedback of the client’s assessment results, leading to an individualized change plan. The third and fourth sessions served as check-in visits to review progress, renew motivation for change, and revise the change plan as necessary. The two active treatments with which MET was compared were cognitive-behavioral skills therapy and 12-step facilitation therapy, respectively. The experimental design of the multisite study was exemplary. Two primary outcome measures, percentage of days abstinent (PDA) and average number of drinks per drinking day (DOD), were derived from an interview-based assessment device that used both timeline follow-back methodology and drinking pattern estimation procedures (Miller & Del Boca, 1994). Collateral informants and

laboratory tests were employed to monitor changes in client alcohol consumption and to corroborate the self-reported drinking measures. Attrition was low in both samples studied, with data for 85% of clients collected at all follow-up points. Treatment integrity was also clearly safeguarded in this study: All therapists were carefully trained, treatment sessions were monitored by videotape, and therapist behaviors were evaluated by independent raters who were unaware of treatment assignment.

Participants in all treatment groups showed significant improvements on all drinking measures, with no consistent differences between the treatment groups. Contrary to investigator predictions, treatment efficacy was not enhanced by matching clients with certain attributes to particular treatments; all of the matching variables (e.g., stage of change, self-efficacy, antisocial personality) failed to predict outcome for various treatments as hypothesized. The only stable and robust interaction effect found in Project MATCH, significant at both 1- and 3-year follow-ups, was that MET outperformed the other treatments on both primary drinking outcome measures for clients high on anger (as measured by the Anger Scale; Spielberger, 1988), whereas the converse held true for low anger clients.

Project MATCH employed a comprehensive set of outcome measures to assess depression, drinking consequences, percentage of days of paid work, and other life variables that may be affected by alcohol consumption. All of these measures showed improvement in roughly two thirds of clients, with no significant differences between treatment groups. Thus, MET produced positive outcomes on drinking and related lifestyle variables with a clinically severe population and performed as well as two empirically supported and substantially longer treatments.

Are the Effects of MI Durable?

Probably. Results from the four meta-analyses are generally favorable on this question for at least 6 months posttreatment, but they are mixed after 1 year beyond treatment. Two of the meta-analyses found a weakening of effects for MI, with a reasonable but decreased outcome up to 6 months following treatment (Hettema et al., 2005; Vasilaki et al., 2006). Conversely, the other two meta-analyses found the effects of MI to last up to 2 years (Burke et al., 2003; Lundahl et al., 2009). In Lundahl et al. (2009), the 32 studies that reported on outcomes between 4 and 12 months after treatment yielded an average *d* of 0.29, which still represents a 14% advantage over comparison samples. Further, three studies examined effects as long out as 2 years and the average *d* was 0.24, whereas Project MATCH (1998) showed durable positive outcomes for MI even at 3-year follow-up. Our conclusion is that MI effects are durable up to at least 1 year beyond treatment, and we, thus, believe a decision to reject MI over concerns that it does not produce lasting change would be misguided (see McCambridge & Strang, 2005; Miller, 2005).

Does MI Dose Influence Outcomes?

Yes. Two of the three meta-analyses that examined the question of dose concluded that more time in MI was associated with better outcomes. In fact, one meta-analysis (Burke et al., 2003) found that treatment dose accounted for about a quarter of the variance in study outcomes. As a stand-alone therapy, MI certainly fits the category of "brief treatment." For example, MET (the variant of MI used in Project MATCH, 1997) is typically completed in about four sessions (e.g., Martino, Ball, Nich, Frankforter, & Carroll, 2008). MI is also often used as a precursor to other

treatments, where a single MI session at intake doubled attendance and 3-month abstinence rates in an outpatient substance abuse program (Aubrey, 1998). Yet, the data suggest that more MI sessions will likely result in better outcomes, although the upper limit on dose is unknown at this juncture.

Does MI's Format Influence Outcomes?

Probably. MI is used in various formats, most commonly as a pretreatment or as a stand-alone treatment. Two of the meta-analyses found that using MI as a pretreatment—wherein MI was designed to prepare clients for further treatment such as CBT or an inpatient program—yielded the best outcomes (Burke et al., 2003; Hettema et al., 2005). Another meta-analysis (Lundahl et al., 2009) concluded that basic MI may work best as a pretreatment, whereas MET (MI with problem feedback) may be optimal as a stand-alone intervention. Overall, MI appears to be a versatile treatment that can support behavioral change in a variety of formats.

Is MI Effective as a Group Treatment?

Probably not. Across the four meta-analyses, only eight studies were found that examined group-delivered MI. Delivering MI through a group was less effective than combining group-delivered with individually delivered MI (Lundahl et al., 2009). Whereas some MI methods (e.g., values sort, decisional balance) would fit well into a group format, MI's reliance on the therapeutic alliance and client-centered skills do not translate as readily to certain group formats (e.g., process groups). Therefore, at this point we discourage treatment that solely relies on group-delivered MI until there are more data supporting its effectiveness.

Does Problem Feedback Enhance MI Outcomes?

MET differs from MI in that it includes a problem feedback component. Only one of the meta-analyses (Lundahl et al., 2009) contrasted MI and MET directly, revealing that MET ($d = 0.32$, $n = 50$) was significantly more effective than MI alone ($d = 0.19$, $n = 33$) overall. This makes theoretical sense because MET is “MI plus,” adding feedback on assessments such as the Drinker's Check-Up (Miller, Sovereign, & Krege, 1988) to MI that could constitute an effective treatment in its own right. Recall that MET produced results equal to CBT and a 12-step treatment in considerably less time (Project MATCH, 1997, 1998). What remains to be seen is whether problem feedback is valuable for problems beyond addictions, such as by giving a depressed client their results from a standardized mood disorder screening test (for suggestions on using MI in the treatment of depression, see Arkowitz & Burke, 2008).

Does Using a Treatment Manual Improve MI Outcomes?

Probably not. One meta-analysis examined this question and found that use of a manual was associated with weaker outcomes (Hettema et al., 2005). A subsequent and larger meta-analysis (Lundahl et al., 2009) determined that use of a manual was associated with poorer results only when MI was being compared head-to-head with another active treatment. Miller and Rollnick (2004), MI's developers, have hypothesized that using a manual may erroneously lead some practitioners to push for change prematurely, thereby eliciting client resistance and resulting in poorer outcomes.

Does MI Require More or Less Time Than Other Treatments?

Less. Across the three meta-analyses that looked at time, MI averaged about 100 minutes less face-to-face time with clients compared with treatment as usual programs. That translates into two fewer 50-minute sessions on average. Given that MI is most often as successful as other treatments, the lower time commitment also makes MI more cost efficient, which may be a significant finding especially when services or staff are limited.

For Whom Does MI Work?

MI has shown positive results for numerous behavioral disorders, as noted in Table 2. Below we discuss other client factors that may affect MI outcomes.

Problem Severity

MI is not reserved for the “worried well” or clients with “light” problems. Three of the four meta-analyses examined the question of clients’ problem severity at intake; in each case, problem severity was unrelated to outcomes, suggesting MI can be profitably applied to a range of problem levels. Recent research even suggests MI may work better for clients with severe problem levels in the areas of substance abuse and anxiety (see Arkowitz, Westra, Miller, & Rollnick, 2008).

Client Gender or Age

Neither client variable seems to make a difference in MI’s effectiveness. The ratio of females and males within a sample was unrelated to outcomes (Lundahl et al., 2009), suggesting males and females benefit equally from MI. Nor have meta-analyses found any relationship between age and outcomes. As MI is a cognitively based intervention requiring some formal or abstract reasoning ability, it is probably not applicable to very young children or cognitively impaired individuals, as with other therapies that have a high mental requirement. Overall, though, MI works with clients of both genders and of various ages ranging from adolescent to geriatric.

Client Ethnicity

One meta-analysis (Hettinga et al., 2005) found that minority groups may benefit more from MI. Another of the meta-analyses (Lundahl et al., 2009) found that when MI was compared with a weak alternative, there was a significant positive correlation between percentages of African Americans and Hispanic Americans with MI outcomes. Further, when MI was compared with a strong alternative (e.g., CBT, 12-step), a lower percentage of Whites and a lower percentage of African Americans (i.e., a higher percentage of other minorities) were significantly related to better MI outcomes. Taken together, these findings suggest that MI may be particularly effective with clients from certain ethnic minority groups. The client-centered, supportive, and non-confrontational style of MI may represent a more culturally respectful form of psychotherapy for some ethnic groups.

For Which Practitioners Does MI Work?

One of the meta-analyses (Lundahl et al., 2009) tested whether the degree and profession of the practitioner (e.g., bachelors-, masters-, or doctoral-level training) affected client outcomes. The results show that training level does not significantly

influence MI outcomes, which probably adds to MI's versatility and suggests that it can be learned and effectively applied by practitioners with a wide range of backgrounds.

What is the Most Effective Method of Learning MI?

Psychotherapy training has been a largely overlooked but critical piece in understanding the use and dissemination of treatments (Atkins & Christensen, 2001). However, MI advocates have spent a considerable amount of time and effort in evaluating how people can optimally learn it by developing training materials, maintaining a listserv or Web presence, hosting regular conferences, and evaluating training outcomes. MI theorists have proposed an eight-stage process involved in learning MI, ranging from its basic philosophy and client-centered techniques (e.g., reflective listening) to working with change talk, solidifying commitment to a change plan, and finally integrating it with other therapeutic methods (Arkowitz & Miller, 2008).

A systematic review of 27 MI training studies (Madson, Loignon, & Lane, 2009) found that most MI workshop-style trainings targeted the first five stages of learning MI, generally omitting "Phase 2" aspects of MI, such as strengthening commitment or developing a change plan as well as integrating MI with other approaches. In these workshops, typically ranging from 9 to 16 hours in length, didactic instruction was combined with role plays and other interactive exercises involving instructor and peer feedback. Using an objective measure of counselor behavior such as the Motivational Interviewing Skill Code (MISC; Miller, 2002), most of these training studies yielded positive increases in MI-related skills, such as reflections and open questions (Madson et al., 2009).

Unfortunately, only a few of these studies examined the effect of training on actual client outcomes, with mixed results. One study found no significant differences between MI-trained and non-trained clinicians on client questions or requests for information, change statements, resistance statements, and neutral statements (Miller & Mount, 2001). The authors of the study concluded that "whatever was changing in counselor practice behavior, it was not enough to make a difference for their clients" (Miller & Mount, 2001, p. 466). Of even greater concern to the authors was that counselors left the workshop viewing themselves as fairly proficient in the approach and, therefore, perceived little need for further training (Miller & Mount, 2001). A more recent study found no difference between MI-trained and non-MI-trained residents relating to clients' reported number of drinks consumed and mean number of drinks per week (Chossis et al., 2007). Conversely, an evaluation of a more comprehensive training process found significantly more change talk and less resistance in clients of MI-trained counselors who received follow-up coaching, an effect that was sustained at 4-month follow-up (Miller, Yahne, Moyers, Martinez, & Pirritano, 2004). In another study, patients of MI-trained dietitians had significantly lower saturated fat intake posttreatment (Brug et al., 2007).

Thus, though there is a mounting quantity of data on MI training, there is still little clear evidence that the most common method of disseminating psychotherapy (i.e., professional workshops) leads to lasting behavioral change in therapists and their clients. Clearly, the workshop format helps trainees improve in knowledge (especially of the first five stages of MI), attitudes, and confidence; yet, it rarely facilitates maintenance of MI skill acquisition over time without additional training

strategies, such as coaching and supervision, which only 4 of the 27 studies to date have done (Madson et al., 2009).

In addition to ongoing research, the Motivational Interviewing Network of Trainers (MINT) is an international group of therapists who have participated in a “training of trainers” workshop and are committed to the dissemination of MI methods. Their Web site with helpful information regarding MI training is located at www.motivationalinterview.org/training/trainers.html.

Clinical Issues and Summary

A large and expanding number of controlled research studies of MI have demonstrated that it is significantly (10–20%) more effective than no treatment and at least as effective as other viable treatments for a wide variety of problems ranging from substance use to reducing risky behaviors and increasing client engagement in treatment. There is a dose effect such that more sessions tend to produce more behavioral change, and yet MI typically operates as a brief treatment with higher cost effectiveness than the alternatives. Furthermore, MI outcomes appear durable up to 1 year posttreatment. MI has proven effective in a variety of formats, although it may work best as a prelude to other treatments and is least amenable to a group format. MI also works for clients regardless of problem severity, age, or gender, and may even work better for ethnic minority clients and without a specific treatment manual. Finally, MI is equally learnable by practitioners of diverse professions, optimally via a 2-day interactive workshop followed by ongoing supervision and coaching.

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