Journal of Substance Abuse Treatment xxx (2016) xxx–xxx

Contents lists available at ScienceDirect

Journal of Substance Abuse Treatment

# Motivational Interviewing for Substance Use: Mapping Out the Next Generation of Research

Michael B. Madson, Ph.D. [a,*], Julie A. Schumacher, Ph.D. [b], John S. Baer, Ph.D. [c], Steve Martino, Ph.D. [d]

[a]University of Southern Mississippi
[b]University of Mississippi Medical Center
[c]University of Washington, VA Puget Sound Health Care System
[d]Yale University School of Medicine, VA Connecticut Healthcare System

ARTICLE INFO

*Article history:*
Received 3 February 2016
Accepted 9 February 2016
Available online xxxx

*Keywords:*
Motivational interviewing
Substance use
Research



## 1. Introduction

Since the landmark paper by William R. Miller, "*Motivational Interviewing with Problem Drinkers*" (1983), Motivational interviewing (MI) has been established as an efficacious clinical approach for treating a range of behavioral problems (Miller & Rollnick, 2013). Some of the largest treatment effects for MI have been observed for substance use disorders (Schumacher & Madson, 2014). In the past 30 years, interest in and use of MI have surged within substance use treatment settings as well as other contexts (e.g., health promotion) and within multiple professions (e.g., medicine, social work, psychology). Studies have demonstrated MI's effectiveness in randomized trials across a range of clinical contexts (Lundahl & Burke, 2009). More recently MI scholars have shifted attention to its theoretical underpinnings and the evolution of a causal theory about how MI works. In outlining a theory of MI, Miller and Rose (2009) hypothesized two major components: relational and technical, which subsequently have guided the research, practice and teaching of MI (Miller & Rollnick, 2013).

The first component - relational – is foundational to MI and includes person-centered counseling traditions, such as being empathic, non-judgmental, autonomy-supporting and affirming with clients. Clinicians relate to their clients in ways that build a safe, trusting, and engaging environment for clients to ponder behavioral change (Moyers, 2014). The second presumed component of MI – technical – occurs when clinicians intentionally elicit client arguments for or against change (Magill et al., 2014). The technical component of MI involves a directional approach in which clinicians selectively attend to and purposively elicit and elaborate discussions about healthy changes. (Schumacher & Madson, 2014). The intended outcome of clinicians intentionally guiding the conversation in this way is to minimize clients' need to defend their prior decisions (called "sustain talk") and encourage clients to discuss their own needs, wants, desires, and reasons for change (called "change talk") (Glynn & Moyers, 2010; Miller & Rollnick, 2013). According to Miller and Rose (2009), increases in client change talk and resolution of sustain talk predict client commitment to change and ultimately underpin steps taken to achieve behavior change. Both components, relational and technical, are hypothesized as intertwined and necessary elements in MI. In addition to outlining a causal theory of MI, Miller and Rose (2009) underscored several areas for future research. Specifically, they suggested that more research was needed to: (a) better understand under what conditions MI is effective, (b) test the technical hypothesis in relation to client outcomes, and (c) identify effective and durable ways to train clinicians in MI. In this paper we provide a brief update of progress on these three key questions and describe papers included in this special issue.

## 2. Conditions in Which MI Is Effective With Substance Use Disorders

Since the inception of MI, much of the MI outcome research has focused on treatment of substance use disorders. This work began initially with alcohol and then grew widely into other areas. A large body of research generally supports the efficacy of MI for reducing alcohol and drug use behaviors including cigarette smoking. Within multiple meta-analytic studies, MI has been shown to produce small to moderate, statistically significant and clinically meaningful effects when

* Corresponding author.

http://dx.doi.org/10.1016/j.jsat.2016.02.003
0740-5472/

compared to waitlist controls, reading materials or a non-specific treatment as usual (Burke, Arkowtiz, & Menchola, 2003; Heckman, Egleston, & Hofmann, 2010; Hettema & Hendricks, 2011; Hettema, Steele, & Miller, 2005; Lundahl, Kunz, Brownell, Tollefson, & Burke, 2010; Vasilaki, Hosier, & Cox, 2006). Further, while the effects of MI were equivalent to other active treatments for substance use behaviors, these effects were often achieved in lower treatment doses, estimated at 2–3 fewer sessions, hinting at better cost effectiveness of MI (Lundahl & Burke, 2009; Vasilaki et al., 2006). The degree to which more intensive MI, in the form of more frequent or longer sessions, could improve MI effects compared to other active treatments remains an area in need of investigation (Polcin et al., 2015).

One key contextual feature of experimental studies of MI is whether it is provided as a stand-alone treatment or offered adjunctively to another substance use treatment. Several studies have used MI as an adjunct to existing treatments, most typically as a pretreatment to prepare clients for an inpatient or outpatient alcohol or drug program. In Lundahl and Burke's (2009) review of four meta-analyses, two meta-analyses reported that adjunctive use of MI yielded best outcomes (Burke et al., 2003; Hettema et al., 2005). Lundahl and Burke (2009) suggested that MI may function best as a pretreatment, whereas MET (MI plus assessment feedback) functions best as a stand-alone treatment. More studies are necessary to establish standards for type of MI treatment and treatment context. This trend across studies expands the potential range of applications of MI and suggests that motivational processes can be enhanced across treatments with very different underlying theories.

MI has also been widely adopted for use with adolescents and young adults (Naar-King & Suarez, 2010) and has shown promise in decreasing youth substance use across a variety of settings (Baer, Garrett, Beadnell, Wells, & Peterson, 2007; Jensen et al., 2011). A large number of these studies have involved the use of individual MI to address risky drinking among college students with good effect (Carey, Scott-Sheldon, Carey, & DeMartini, 2007; Cronce & Larimer, 2011). In this issue, Dupont, Candel, Kaplan, van de Mheen, and de Vries (2016) demonstrated how MI was integrated with self-monitoring and behavior control (called the Moti-4) to successfully reduce youth weekly spending on cannabis and number of marijuana joints smoked. Also in this issue, Clair-Michaud et al. (2016) found that MI worked best at reducing alcohol and marijuana use and risky behaviors for adolescents in a juvenile corrections facility who reported low depression, highlighting the need to consider co-occurring mental health conditions as moderators of MI outcomes. A recent meta-analysis by Foxcroft, Coombes, Wood, Allen, and Almeida Santimano (2015) questioned the value of MI for adolescent and young adult alcohol treatment policy or practice given small effect sizes, but several methodological limitations of the meta-analysis undermined their conclusions (Mun, Atkins, & Walters, 2015). Efforts to improve treatment outcomes for MI with adolescents and young adults are ongoing (D'Amico et al., 2015).

An emerging context where MI shows promise is in addressing substance use behaviors in criminal justice settings. McMurran (2009) systematically reviewed the literature on MI with offenders and found that MI appears efficacious with retaining substance using offenders in treatment; however, the results are less clear for enhancing motivation to change and facilitating reduced substance use. McMurran (2009) emphasized that future research about the effectiveness of MI in criminal justice settings needs to incorporate rigorous designs, connect more directly to MI theory, and monitor the fidelity of implementation to treatment engagement and outcomes. Spohr, Taxman, Rodriguez, and Walters (2016), this issue, found that probationers seen by clinicians who demonstrated higher empathy and MI spirit, as measured by the Motivational Interviewing Treatment Integrity code (MITI), initiated treatment more than probationers who had less empathic and MI-spirited clinicians. Their results support the importance of MI empathy and specifically MI spirit in community corrections to facilitate engagement in treatment.

The use of MI in healthcare settings for the purpose of addressing risky or disordered substance use has proliferated with the promotion of screening, brief intervention, and referral to treatment (SBIRT) approaches in medical settings (Substance Abuse and Mental Health Services Administration; SAMHSA, 2013). Most brief interventions in SBIRT are MI-based. When MI is used as a single-session intervention for primary care or emergency department adult patients, it has its most consistent support with non-dependent unhealthy alcohol use (Havard, Shakeshaft, & Sanson-Fisher, 2008; Kaner et al., 2009); recent studies have questioned the efficacy of MI-based SBIRTs for illicit drug use disorders (Roy-Byrne et al., 2014; Saitz et al., 2014). The extent to which single-session MI interventions might reduce risky, nondependent drug use, consistent with the alcohol literature, requires more investigation. In addition, MI-based brief interventions that target adolescent substance use have been infrequently tested, and few of these efforts have targeted illicit drug use (Mitchell, Gryczynski, O'Grady, & Schwartz, 2013).

Meta-analytic studies also point to other areas that require further research. The degree to which MI is uniquely effective with individuals from racial/ethnic minority backgrounds remains unclear. Hettema et al. (2005) and Lundahl et al. (2010) found mixed results in relation to MI outcomes with individuals from Native American, African American and Hispanic backgrounds. Some results suggested greater efficacy of MI within ethnic minority populations (Hettema et al., 2005) and other results showed no differences (Lundahl et al., 2010). MI's emphasis on individual client values and goals, combined with its person-centered nature, makes it a potentially valuable counseling approach for diverse and underserved clients (Landry et al., 2015; Lundahl & Burke, 2009). However, more research exploring MI with homogeneous samples of diverse and underserved groups, such as the one described in this issue by Dickerson, Brown, Johnson, Schweigman, and D'Amico (2016), is needed to help uncover culturally congruent adaptations of MI that might boost its treatment effects.

Interest in group formats for MI has grown in the past 15 years (Foote et al., 1999; Van Horn & Bux, 2001). Some of these group approaches became quite popular (e.g., Velasquez, Maurer, Crouch, & DiClemente, 2001) and ultimately led to the publication of a major textbook describing different ways to use MI in groups (Wagner & Ingersoll, 2013). However, the efficacy of the use of MI in groups remains uncertain. A few randomized controlled trials have shown significant group MI treatment effects (Hustad et al., 2014; LaChance, Feldstein Ewing, Bryan, & Hutchison, 2009; Nirenberg, Baird, Longabaugh, & Mello, 2013; Santa Ana, Wulfert, & Nietert, 2007) and others have shown no differences based on condition (D'Amico, Hunter, Miles, Ewing, & Osilla, 2013). Given that most community programs for clients with substance use disorders typically rely on group treatments (Kaminer, 2005), further understanding the effectiveness of group MI is vitally important for the field.

Research on MI efficacy has been clouded by the question of whether MI was actually implemented as intended (i.e., with fidelity to Miller and Rollnick's descriptions of the method). In fact, early MI efficacy studies often have failed to describe the intervention or evaluate its fidelity (Madson, Campbell, Barrett, Brondino, & Melchert, 2005). The increase in MI fidelity assessment tools (Madson & Campbell, 2006) and the direct call for quality conditions that must be present in MI efficacy research (Miller & Rollnick, 2014) highlight the importance of evaluating MI fidelity with reliable and valid measures. In this issue, preliminary evidence for the reliability and validity of the revised Motivational Interviewing Treatment Integrity Code (MITI 4) (Moyers, Rowella, Manuel, Ernst, & Houck, 2016), computer-based natural language processing programs for MI adherence (Tanana, Hallgren, Imel, Atkins, & Vivek Srikumar, 2016), and Client Evaluation of Motivational Interviewing Scale (CEMI) (Madson, Villarosa, Schumacher, & Mohn, 2016) are important contributions in this direction. Although meta-analytic findings demonstrated no direct relationship between the assessment of MI fidelity and treatment outcomes (Lundahl et al., 2010),

Please cite this article as: Madson, M.B., et al., Motivational Interviewing for Substance Use: Mapping Out the Next Generation of Research, *Journal of Substance Abuse Treatment* (2016), http://dx.doi.org/10.1016/j.jsat.2016.02.003