

## RESEARCH SUMMARY BRIEF

### MOTIVATIONAL INTERVIEWING AND MOTIVATION ENHANCEMENT THERAPY FOR THE TREATMENT OF STIMULANT USE DISORDERS

The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM–5TR) defines stimulant use disorder as “a pattern of amphetamine-type substance, cocaine, or other stimulant use leading to clinically significant impairment or distress” (American Psychiatric Association [APA], 2022). According to the 2022 National Survey on Drug Use and Health (NSDUH), 1.8 million people over the age of 12 had methamphetamine use disorder, 1.4 million people had cocaine use disorder, and 1.8 million people had prescription stimulant use disorder in the U.S. (Substance Abuse and Mental Health Services Administration [SAMHSA], 2023). The latest data from the NSDUH show that the prevalence of methamphetamine use in Ohio had a sharper increase (83%) than the U.S. (9%) in 2017-2018 and 2018-2019. The prevalence of cocaine use in Ohio showed an increase of 8% for the same period; whereas, there was a 5% decrease in the U.S. during that timeframe.

Motivational Interviewing (MI) is a practice approach utilized across a range of conditions to promote positive behavioral change and centered around developing rapport with the client. It was developed by William Miller, PhD in the 1980s based on his experience treating alcoholism and addiction (Miller, 2023). The first *Motivational Interviewing* textbook was published in the 1990s by Miller and his colleague, Steve Rollnick, PhD (Miller & Rollnick, 1991). A manualized version of MI, Motivational Enhancement Therapy (MET), was developed in 1993 as part of a large-scale alcohol use disorder study known as Project MATCH (Miller, 2023). MET incorporates the key components of MI into a structured, manualized treatment modality. This brief outlines findings from a review of literature focused on the effectiveness and utility of MI and MET for stimulant use disorders.

#### MI & MET Components

MI is a therapeutic technique that strengthens an individuals’ motivation for and commitment to specific goals (Miller & Rollnick, 2023). MI relies on a set of core skills, fundamental principles, and techniques designed to explore ambivalence and motivation to change in an atmosphere of acceptance and compassion (MINT, 2023; see Table 1).

As a client-led approach, MI equips providers to recognize and adapt treatment to their client’s level of readiness for change. In *Motivational Interviewing (4<sup>th</sup> edition)*, the application of MI is expanded to include organizational, community, and system-level changes (Miller & Rollnick, 2023). MI is commonly used alongside other treatment methods, such as cognitive behavioral strategies.

MET is a manualized motivational intervention that was designed to enhance measurability and promote consistency in the application of MI components. The original MET model used a four-session format (Miller, 2023). MET emphasizes assessment, using

information provided by the individual to inform change and treatment planning.

**Table 1. Key Components of MI**

<i>Core skills</i>	open-ended questioning, affirming, reflecting, summarizing
<i>Fundamental principles</i>	expressing empathy, developing discrepancies, rolling with resistance, supporting self-efficacy
<i>Techniques</i>	engaging, focusing, evoking

#### Literature Review Methods

In 2023, a literature review was conducted to investigate outcomes associated with using MI or MET to address stimulant use disorder and overdose. The literature review included searching multiple research databases: PsycINFO, MEDLINE, SocINDEX, Psychology and Behavioral Sciences Collection, and Cochrane Library. Twenty-two articles met eligibility criteria for a full review. Of these, four articles focused on MET and 18 focused on MI. Sixteen studies were experimental,<sup>1</sup> four studies were

<sup>1</sup> participants randomly assigned to either MI/MET or another form of treatment, or to no treatment

quasi-experimental<sup>2</sup>, and two were non-experimental<sup>3</sup>. Fourteen studies were conducted in the U.S., two in the United Kingdom, two in Iran, one in South Africa, one in Thailand, one in Brazil, and one in Taiwan. Table 2 outlines outcomes and types of drug use represented in the reviewed studies. Study retention/attrition rates were captured in 20 articles. Fidelity was measured in eight of the 18 MI studies and three of the four MET studies.

**Table 2. Description of Reviewed MI/MET Studies (Total n=22)**

<b>Outcomes</b>	Drug use (n=17) Addiction severity (n=10) Change readiness (n=8) Treatment adherence/attendance (n=6) Depression/anxiety (n=6) Psychiatric symptoms (n=4) Treatment experience (n=4) Cognitive functioning/decision making (n=3) Risky behaviors (n=3) Global functioning (n=3) Self-efficacy (n=3) Medication adherence (n=2) Cravings (n=2) Quality of life (n=1) Entrance into detox (n=1) 12-step meeting attendance (n=1) Homelessness (n=1)
<b>Drug use type(s)</b>	Methamphetamine use (n=7) Cocaine use (n=7) Crack use (n=1) Cocaine vs marijuana use (n=1) Ecstasy, crack or cocaine (n=1) Methamphetamine use plus alcohol (n=1) Crack use among methadone patients (n=1) Methamphetamine use among methadone patients (n=1) Cocaine and heroin use (n=1) Methamphetamine and MDMA use (n=1)

### Findings

Overall, there were mixed findings on whether MI or MET were more effective than other types of treatments for stimulant use disorders. Although few studies found significant differences in drug-related outcomes for MI/MET groups compared to groups

receiving other treatments, there was evidence that any exposure to therapeutic interventions, including MI/MET approaches, generally improved outcomes. Several studies assessed and monitored fidelity by video- or audio recording sessions that were reviewed and rated by a trained study team (Martino et al., 2006; Polcin et al., 2014; Sorsdahl et al., 2021; Stein et al., 2009; Stotts et al., 2007). Sessions were rated using tools such as the Yale Adherence and Competence Scale (YACS), a modified MI Skill Code (MISC), and an imaginal desensitization plus MI (IMDI) fidelity checklist.

**Drug use and addiction severity outcomes:** Drug use was measured utilizing self-report as well as urinalysis screenings. The efficacy of motivational interventions seemed to depend on the type of substance used and initial motivation levels. Only two studies reported differences in methamphetamine use: one comparison study that relied exclusively on self-report data (Sorsdahl et al., 2021) and one pilot study with no comparison group (Galloway et al., 2007). Four studies that investigated cocaine or crack use detected differences in use between an MI/MET intervention group and a comparison group (Martino et al., 2006; Stotts et al., 2001; Stotts et al., 2007; Rohsenow et al., 2004). In addition, one study examining crack usage with no comparison group showed promising results (Pulliam, 2012). Overall, methamphetamine use disorders appeared less responsive to MI/MET than cocaine use disorders.

**Change readiness outcomes:** Change readiness and motivation were measured using tools such as the Motivation for Change Ladder, the Processes of Change Questionnaire, the Readiness for Change Ruler, the Thoughts about Abstinence Scale, the Cocaine Change Assessment Questionnaire, and the Cocaine Decisional Balance Scale. Two studies found a significant improvement in change readiness for an MI/MET group compared to a comparison group (Suvanchot et al., 2012; Huang et al., 2011).

**Treatment attendance and adherence outcomes:** Attendance in treatment and completion of treatment were measured by the treatment centers as well as interviews with participants and family members. Five

<sup>2</sup> involves at least two treatment groups/conditions, but does not include random assignment

<sup>3</sup> lacks random assignment of participants to study conditions and often evaluates a single treatment group (i.e., MI or MET)

studies reported significant differences between MI/MET groups and comparison groups in treatment attendance and/or treatment adherence (Daley et al., 1998; Danaee-far et al., 2016; Korcha et al., 2014; McKee et al., 2007; Salimi et al., 2018). The findings suggested that motivational treatment strategies could contribute to reduced use over time.

**Feelings about treatment:** Four studies explored participants' feelings about the treatment they were receiving and/or their feelings about their relationship with their treatment counselor. This outcome is related to developing rapport, which is important to the MI process (Miller, 2023). Only one study found any significant difference in participants' feelings about treatment and/or their treatment provider. This study reported higher therapeutic experience scores for women than men in the intensive MI condition (Korcha et al., 2014).

**Other outcomes:** Six studies examined outcomes related to psychological and/or psychiatric health, such as anxiety or depression. Most of these studies were unable to provide evidence that MI or MET significantly improve psychiatric symptoms. One study detected a difference in psychiatric symptoms for male participants in the intervention group and a decrease in depression for both genders in the intervention group (Polcin et al., 2014). Another study demonstrated better psychiatric outcomes for the comparison group than the MI/MET group (Martino et al., 2006). Three articles examined the impact of MI on cognitive or decision-making skills. All three studies reported promising results regarding the use of motivational interventions to improve cognitive or decision-making skills with stimulant users (Goncalves et al., 2014; Pulliam, 2012; Stotts et al., 2007). Three studies measured global functioning outcomes. Of these, one study (Salimi et al., 2018) found MI to be a promising approach for improving functioning outcomes for stimulant users. Four studies examined factors such as high-risk behavior and self-efficacy outcomes. Findings from two studies supported the notion that MI can positively impact self-efficacy over time (Mausbach et al., 2007; Suvanchot et al., 2012). Two studies reported reduced high-risk sexual behavior with the MI intervention, although one study found no difference between the

MI/MET and comparison groups (Mausbach et al., 2007; Parsons et al., 2018).

### Limitations

The reviewed literature had several limitations. One limitation of the literature is the inconsistent use of fidelity measures. Other limitations are related to generalizability and the strength of research designs used to investigate MI/MET. Eight of 22 studies were completed outside of the U.S., which limits generalizability to the U.S. population due to significant cultural differences and attitudes about substance use and abuse. Additionally, two of those studies included adolescents as participants, whose substance use profiles are often distinctively different than those of adults. Many studies compared a version of MI or MET to a different version of MI. Finally, existing research investigates old and potentially outdated versions of the MI model. Because the fourth edition of the *Motivational Interviewing* textbook was published in August 2023, studies regarding the most recent iteration of the model had not been published by the time this literature review was conducted.

### Conclusion

MI is a practice approach rather than a specific treatment strategy. MI uses a client-led approach that was designed for individuals who are not yet engaged in treatment. MI was not designed as a stand-alone treatment. Instead, it was intended to help clients cultivate enough internal willingness to engage in addiction treatment. Because it was not intended to be a standalone treatment, the impact of MI can be difficult to assess in isolation. MET was developed to manualize the principles of MI, which could also improve consistency and measurability of motivation-based treatment strategies. However, the structured and manualized aspects of MET may be incompatible and inconsistent with the tenets of MI that encourage providers to be flexible, adaptable, and highly responsive to the needs of clients as they emerge. Providers may find it difficult to implement strategies that are aligned with a flexible and client-led MI tradition while faithfully following a structured manual that dictates the flow of sessions.

When used in conjunction with other evidence-based treatments, motivational interventions have stronger potential to produce better outcomes. Research combining motivational interventions with other

treatment modalities or using the MI approach as a precursor to other treatments could be beneficial.

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