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A Pilot Study of Mindful Body Awareness Training as an Adjunct to Office-Based Medication Treatment of Opioid Use Disorder

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Abstract

The purpose of this study was to pilot-test a mind-body intervention called Mindful Awareness in Body-oriented Therapy (MABT) as an adjunct to buprenorphine for individuals with opioid use disorder (OUD). MABT, a manualized 8 week protocol, teaches interoceptive awareness skills to promote self-care and emotion regulation. A small study was designed to assess MABT recruitment and retention feasibility, and intervention acceptability, among this population. Individuals were recruited from two office-based programs providing buprenorphine treatment within a large urban community medical center. Participants were randomized to receive either treatment as usual (TAU), or TAU plus MABT. Assessments administered at baseline and 10-week follow-up included validated self-report health questionnaires and a process measure, the Multidimensional Assessment of Interoceptive Awareness, to examine interoceptive awareness skills. An additional survey and exit interview for those in the MABT study arm were administered to assess intervention satisfaction. Results showed the ability to recruit and enroll 10 participants within a two-weeks, and no loss to follow-up. The MABT study group showed an increase in interoceptive awareness skills from baseline to follow-up, whereas the control group did not. Responses to the satisfaction questionnaire and exit interview were positive, indicating skills learned, satisfaction with the interventionists, and overall perceived benefit of the intervention. In summary, study results demonstrated recruitment and retention feasibility, and high intervention acceptability. This pilot study suggests preliminary feasibility of successfully implementing a larger study of MABT as an adjunct to office-based medication treatment for opioid use disorder.

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Keywords

Interoception; mindfulness; medication-assisted treatment; opioid use disorder; STR grants; buprenorphine; mind-body therapy

1. Introduction

The opioid epidemic in the United States has led to high rates of overdose death and the first recorded reduction in population life expectancy (Case & Deaton, 2015). Substantial federal resources have been committed to responding to the epidemic, primarily through opioid State Targeted Response (STR) programs across the country. In Washington State, much of this funding has been devoted to expanding access to medications that have proven effective for treatment of opioid use disorders, namely buprenorphine, methadone, and naltrexone. Opioid treatment networks have been established across the state to improve access primarily to buprenorphine treatment in primary care, behavioral health, and addiction treatment clinics, since office-based treatment is highly scalable and preferable to other medications (like methadone) for some patients (Korthuis et al., 2010; Yarborough et al., 2016). One key model for buprenorphine treatment delivery in the Washington State is the Massachusetts Model, where nurse care managers (NCM) provide most treatment services so that clinics can treat a larger number of patients (Alford et al., 2011; LaBelle, Han, Bergeron, & Samet, 2016).

Opioid agonist therapy, with either methadone or buprenorphine, is associated with reductions in illicit opioid use (Mattick, Breen, Kimber, & Davoli, 2014), and related complications such as overdose (Pierce et al., 2016). However, despite its demonstrated efficacy in clinical trials, in the real-world setting patients who receive office-based buprenorphine treatment often do not achieve successful treatment outcomes. Research suggests that only half of persons who are treated with buprenorphine are retained in maintenance treatment beyond 6 months (Alford et al., 2011; Bhatraju et al., 2017; Soeffing, Martin, Fingerhood, Jasinski, & Rastegar, 2009; Weinstein et al., 2017), and when not taking medications patients frequently relapse to illicit opiate use (Fiellin et al., 2006). While prior studies of higher intensity psychosocial treatments in the context of office based buprenorphine treatment have not found substantial benefit (Fiellin et al., 2013; Weiss et al., 2011) a limited range of interventions has been studied. Effective psychosocial treatment interventions to couple with buprenorphine for opioid use disorder (OUD) treatment to improve treatment outcomes have not been established, but are needed.

Mindful Awareness in Body-oriented Therapy (MABT) is one such possible treatment. MABT is based on a mind-body approach designed to teach interoceptive skills for self-care and emotion regulation (Price & Hooven, 2018). Interoception involves the processing of sensory input from inside the body.(Craig, 2003) Sensory information gained through interoception appears to play an important role in affective and regulatory behavior and successful inhibition of drug use. The role of interoception in addiction is emphasized in cognitive neuroscience models.(Goldstein et al., 2010; Naqvi & Bechara, 2010; Paulus & Stewart, 2014; Paulus, Tapert, & Schulteis, 2009) suggesting the neurobiology that may

underlie interoception and influence craving, reward, impulse control and overall self-awareness among substance users.(Noel, Brevers, & Bechara, 2013; Paulus & Stewart, 2014; Verdejo-Garcia, Clark, & Dunn, 2012) A review of brain imaging studies supports interoceptive models for SUD, showing significantly altered regulatory processes involved in interoception among those with drug dependence relative to those without.(Paulus & Stewart, 2014)

Prior studies have examined MABT as an adjunct to intensive outpatient treatment for women with substance use disorder (SUD) (Price & Smith-DiJulio, 2016; Price et al., 2018; Price, Wells, Donovan, & Rue, 2012). Immediate pre-post intervention results from a recently completed study of MABT as an adjunct to intensive outpatient treatment for women (N = 187) show improved depression symptoms and emotion regulation difficulties (self-report and respiratory sinus arrhythmia (RSA), as well as increases in interoceptive awareness skills for those in MABT + treatment as usual (TAU) compared to TAU only (Price et al., 2018). Longitudinal findings from this same project highlight additional improvements in substance use and craving for MABT+ TAU vs. TAU (Price, Thompson, Crowell, & Pike, 2019). However, because these prior MABT studies were delivered to female patients only, and within the context of intensive outpatient abstinence-based treatment, there are a number of unanswered questions important for delivery of MABT as an adjunct to medication treatment with buprenorphine within the nurse care manager treatment model. These include: a) is recruitment through nurse care manager feasible, and b) is MABT acceptable to both men and women as an adjunct to medication treatment?

In order to prepare for a larger clinical trial, we conducted a pilot-test randomized trial within a NCM facilitated program in preparation for a larger clinical trial of MABT as an adjunct to buprenorphine treatment. The four pilot study aims were to examine (1) recruitment (specifically the recruitment strategy/procedures and ability to recruit 4–6 participants within a month) and follow-up feasibility; (2) intervention acceptability; (3) outcome measure acceptability and performance; and (4) whether modifications to the MABT protocol are needed based on participant feedback and therapist process evaluation.

2. Method

2.1 Study Setting

Washington State initiatives aiming to expand access to opioid use disorders treatment using federal funding include the Massachusetts model of collaborative care which utilizes nurse care managers to support treatment (Alford et al., 2011). Developed at Boston Medical Center, this model has been implanted in community health centers throughout the state (LaBelle et al., 2016). The model provides staff dedicated to OUD treatment, including a Program Manager, who is responsible for screening, appointments, referrals, insurance eligibility, and reporting; and a Nurse Care Manager, who is the central care provider, providing full assessments, coordination of medication initiation and maintenance, and close follow up. In Washington State, a STR-funded treatment network using this model has been developed within primary care, behavioral health and addiction treatment clinics at a large, county-owned publically funded urban community medical center that serves primarily low income, uninsured or publicly insured patients. This study took place in a large community

medical center that houses two NCM model programs that we recruited from, one is a primary care clinic and one is a specialty addiction clinic.

2.2 Study Design

A two-group randomized pilot test was used to assess the recruitment and retention feasibility of MABT for individuals prescribed buprenorphine for opioid use disorder treatment. The study, reviewed and approved by the institutional review board at a large university in the northwestern United States, was in accord with the Helsinki Declaration of 1975. Participants were assigned to either the treatment-as-usual (TAU) control condition or to the experimental condition of TAU + MABT. Measures were administered at two time-points: at baseline and 10-week follow-up. The MABT intervention was delivered on one day/week at the clinic where the participant received OUD treatment by a trained interventionist. Participants were remunerated for completion of questionnaires at each assessment time-point.

2.3 Recruitment and Enrollment

Prior to study launch, the NCMs were briefed on the study and intervention components so that they were equipped to answer basic questions by interested patients. NCMs were provided with study flyers to review with patients, and for those interested they asked consent to provide contact information to the research coordinator (RC). The RC screened interested patients for eligibility based on the following inclusion criteria: 1) enrolled in the NCM administered buprenorphine program for at least four weeks, 3) agreed to forego other manual (e.g., massage) or mind-body (e.g., mindfulness meditation) therapies for 10 weeks during the study, 4) fluent in English, and 6) could attend 8 MABT sessions on day offered at clinic. Patients were excluded if they: 1) were unable to remain in treatment for the duration of the study (e.g., planned relocation, pending incarceration, planned surgery), 2) were over 24 weeks pregnant, or 3) exhibited cognitive impairment (e.g., history of traumatic brain injury). Eligible patients who provided consent for study participation completed a baseline assessment at the clinic where they received medication treatment, and were then randomized to treatment groups. A random group generator in STATA (StataCorp, college Station, TX) was used to assign participants by clinic to evenly distribute control and experimental groups.

2.4 Treatment as Usual

Patients are assessed by the NCM, who provides education and support for starting and maintaining patients on buprenorphine. Patients are generally seen weekly at the start of treatment and can advance to monthly visits as they stabilize on medication. Waivered physicians see patients initially to confirm a diagnosis of opioid use disorder and provide medication, then monthly or as needed depending on the patient's other medical and mental health care needs. Urine testing is routine at each visit, with results used to help plan treatment, and priority is given to continuation of medication for opioid use disorder whenever possible. Mental health and medical care are available, as is addiction counseling, though patients are not required to attend other care as a condition of medication continuation.

2.5 Mindful Awareness in Body-oriented Therapy (MABT)

MABT is a manualized protocol involving eight 75-minute one-on-one sessions, delivered once per week. The protocol has an incremental approach for teaching interoceptive awareness to facilitate development of interoceptive awareness skills, reflected in the three content areas: body literacy, interoceptive training, and mindful body awareness practice (Price & Hooven, 2018). Touch is used to facilitate the participant's ability to focus mindful attention to the body, and participants learn to use self-touch to practice at home and develop their capacity for integrating interoceptive awareness skills in daily life. MABT has specific training and certification criteria, and is available to therapists and health professionals in the community (https://www.cmbaware.org/).

MABT was delivered by two female licensed massage therapists trained on the MABT protocol, one at each clinical site. Both therapists had more than 10 years of experience in practice, including advanced training in mental health and mindfulness-based approaches. A training manual developed specifically for MABT research was used to train MABT interventionists, involving a 3-month course with the primary author who developed the intervention.

To monitor fidelity to the intervention and provide clinical supervision to the therapists, all sessions were audio-recorded. Implementation fidelity was monitored by one of the principal investigators, including review of recorded sessions and process evaluation forms completed by the therapist after each session.

2.6 Procedures

Assessment were administered by the research coordinator at two time-points (pre and 10-week follow-up), and included: 1) baseline-only demographic and health history; 2), a calendar-method interview to collect substance use information; 3) an online survey to collect self-reported health information using standardized questionnaires; and 4) a semi-structured exit interview at the follow-up appointment to gather acceptability and modification suggestions. Administration of the assessments took approximately 45 minutes.

2.7 Measures

To assess intervention acceptability, a satisfaction questionnaire developed for this study was administered post-intervention to the MABT study group. The satisfaction questionnaire consisted of 10 items, and includes questions derived from the Project Match participation satisfaction questionnaire (Donovan, Kadden, DiClemente, & Carroll, 2002). In two items, participants were asked to rate the intervention and their interventionist on a four point scale (0=dissatisfied, to 3= extremely satisfied). Six items, on a four point scale, were specific to whether the intervention facilitated well-being and supported their recovery. With ratings from 0 (not at all) to 4 (extremely), the survey items asked if the intervention helped with stress, physical tension, empowerment, connection to body, general wellbeing, and their treatment for opioid use disorder. The final two items asked whether they shared their intervention experiences with others such as their family, peers, or counselors.

To assess intervention skills learned, the Multidimensional Assessment of Interoceptive Awareness (MAIA) (Mehling, Price, Daubenmier, Acree, & Stewart, 2012) was used as a process variable. The MAIA has 32 items on a 6-point Likert-type scale that ask about use from 0 “never” to 5 “always” of interoceptive awareness skills. The total score range is from 0 – 5.

Validated self-report outcomes measures were used to examine measurement acceptability and performance. These included the Timeline Followback Interview (TLFB) (Sobell et al., 1996) a calendar interview method to collect use of opioids and other illicit substances during the study period, and the Penn Alcohol Craving Scale (revised to include opioids and other illicit drugs) (PENN-R) (Flannery, Volpicelli, & Pettinati, 1999), a 5-item scale using a 7-point Likert-type scale to assess craving for opioids and other substances. To assess mental health distress we measured anxiety symptoms with the 7-item Generalized Anxiety Disorder Scale (GAD-7) (Spitzer, Kroenke, Williams, & Lowe, 2006), depression symptoms with the 8-item Patient Health Questionnaire (PHQ-8) (Kroenke, Spitzer, & Williams, 2001; Kroenke et al., 2009), emotion regulation with the 18-item Difficulties in Emotion Regulation Scale – Short Form (DERS-SF) (Gratz & Roemer, 2004; Kaufman et al., 2016), symptoms of post-traumatic stress with the 20-item PTSD Checklist (PCL-5) (Blake et al., 1995), and perceived stress with the 4-item Perceived Stress Scale-Short Form (PSS-SF) (Cohen, Kamarck, & Mermelstein, 1983). Three of the above measures (GAD-7, PHQ-9, and PCL-5) include screening cut-points based on the DSM-V-TR (American Psychiatric Association. DSM-5 Task Force, 2013). To assess physical symptoms and pain we used the 26-item Medical Symptom Checklist (MSC) (Leserman, Li, Drossman, & Hu, 1998) and the 15-item Brief Pain Inventory (BPI) (Keller et al., 2004). These intervention process and outcome measures reflect those to be used for the larger clinical trial.

A brief, semi-structured interview was conducted with all participants at the follow-up assessment to solicit feedback on the measures administered, procedures for recruitment and enrollment, suggestions for improvements. For MABT study participants, additional questions pertaining to their experiences with the intervention were asked. Finally, therapist process evaluations were reviewed and assessed to elicit possible needed protocol modifications.

2.8 Data analysis

Descriptive statistics were employed to examine recruitment and retention feasibility, sample characteristics, session attendance, completion of questionnaires at each time point, and aspects of treatment fidelity. Qualitative responses to the exit interviews were analyzed using qualitative description (Sandelowski, 2010) and content analysis (Graneheim & Lundman, 2004).

3. Results

3.1 Recruitment and Follow-up Feasibility

Over the course of two weeks of recruitment within each of the clinics, the NCMs approached a total of 53 patients, of whom 28 were potentially interested and 19 were

reached for screening. Of these, 17 were screened and 2 declined. Two were ineligible, one due to probable surgery and one due to cognitive difficulties from a head injury. The remaining 15 were eligible and were scheduled for the initial study meeting for consent and baseline assessment. Of these, 10 attended, completed the assessment, and were randomized to either TAU only or TAU + MABT study groups. No one declined due to randomization. There was no loss to follow-up, as all ten participants completed the follow-up assessment, administered 10–11 weeks after their baseline assessment date.

Participants were asked about the recruitment method and for any suggestions on how this could be improved in the exit interview. All participants said that recruitment by the NCM worked well, and the flyer used to provide written information adequately described the study for recruitment purposes. Some suggested that if only a flyer had been posted, they would've ignored it. Others indicated that in addition to recruitment through the NCMs, anything to help draw attention to the study would be useful including posting flyers in the clinic, and recruitment through recovery social media groups.

3.2 Sample Characteristics

Of the 10 participants, 7 were males and 3 were females. The majority were Caucasian, and ages ranged from 30 – 61. All had completed high school, and 7 had at attended at least two years of college. Six participants were parents, but none had children < 18 years of age living at home. Based on participant self-report, the duration of time engaged in medication treatment ranged from 2 months to 2 years: one participant had been in treatment for 2 months, four between 3 − 5 months, four between 6 − 11 months, and one for 2 years. All participants reported 86 − 90% days abstinent from opioids during the 90-day period prior to study enrollment. Mental health distress was high, with the majority of the sample scoring above the cut-off for moderate depression, see Table 1. In addition, half of the participants (n = 5) scored above the screening cut-off for post-traumatic stress disorder (PTSD). Five (50%) of the participants also reported co-occurring chronic health conditions, including three who self-reported a chronic pain diagnosis. Eight of the participants were currently seeing a mental health provider. Only one participant indicated more than minimal exposure (< 10 sessions in lifetime) to prior mind-body therapies focused on body awareness (yoga, mindfulness meditation or body-centered therapy).

3.3 Intervention Acceptability

3.3.1 Intervention Attendance—Of the five participants assigned to MABT, one was female and four were male. Four of the five participants (80%) attended at least 7 of the 8 intervention sessions within the 10 week time-frame. One participant completed only 4 sessions. At the exit interview, participants were asked if there was anything study staff could do to make it easier to attend sessions; they reported that life events (injuries, public transit, work schedule) at times prevented their attendance but acknowledged there was nothing the study staff could do to change that, and praised the direct communication by phone or text with the interventionists which allowed for timely communication and often accommodations to facilitate their participation.

3.3.2. Intervention Satisfaction—In response to the satisfaction questionnaire, the MABT group participants rated the intervention as very or extremely satisfying, (see Table 2). They reported what they learned helped them "a lot" or "extremely" to support their treatment, and to feel more connected to their body, empowered, and facilitate general well-being. Participants also reported that they shared their intervention experiences inside treatment with their buprenorphine providers as well as outside of treatment with family and friends.

3.3.3 Interoceptive Skills Learned—Pre to post change on Multidimensional Scale of Interoceptive Awareness (MAIA) highlights skills learned in MABT. Participants that received MABT showed an improved mean score from baseline of 2.09 (SD = .96) to follow-up score of 3.47 (SD =.33). In contrast, the control group (those receiving TAU only) showed no change in interoceptive awareness skills with baseline mean score of 2.84 (SD = . 88) to follow-up score of 2.82 (SD = .82).

3.3.4 Intervention Experience: Qualitative Data—Two primary themes emerged from the exit interviews that asked about primary experience of the intervention, and about their satisfaction with the interventionist. The primary theme specific to intervention experience was the importance of learning new skills for improving mental health, as exemplified in these participant comments: "*I got in touch with a lot of [emotional] pain. Now I know what I need to deal with now – childhood stuff. She* [the interventionist] *helped me identify how my body reacts [when I'm stressed.]*" Another participant highlighted the helpfulness of learning take home skills, for example: "*I have tools to take back home to help with panic attacks*." The primary theme specific to interventionist satisfaction was the sense of safety with and support they felt from the MABT therapists. As one participant commented: *"God put her in my life for a reason." "I'm seeing how I can get better now."* Another commented, *"She's cool. Professional, explained stuff well. She noticed when I was getting anxious before I did."*

MABT group participants were asked if they felt they were at an optimum time in their recovery to receive the intervention, or if they would suggest intervention delivery a different point in the recovery trajectory. All MABT participants indicated that the timing for the intervention worked well for them. They offered the perspective that MABT was likely best for patients who were stable on their buprenorphine dose, which can take many weeks after medication induction. Several also added that once 'stable' they felt "normal" or that they had a "clear head" and that feeling stable was likely necessary for engaging with the intervention content. One participant said that while having abstained from opioid use for 8–9 months, they were beginning to "slip up" and that the intervention provided additional structure and tools at a good time to support abstinence and treatment retention. Similarly, two reported that being accountable to attending the sessions with the interventionists was an incentive to avoid opioid use.

Minor suggestions were made to improve physical comfort (table adjustment) and the room for intervention delivery (to reduce ambient noise level).

3.4 Outcome Measure Acceptability and Performance

All participants completed all questionnaires at both assessment time-points. In addition, participants were asked for feedback on the questionnaires, including their comfort answering the questions. Responses were uniformly positive, indicating overall measurement acceptability. In addition, MABT participants were asked whether the measures covered what they learned and their perceived benefits of the intervention. Overall, they reported that the questions sufficiently represented what they learned; one participant indicated learning more than was covered in the measures and suggested adding questions about what was learned in MABT and how they were applying what they learned in daily life. In terms of measurement performance, with the exception of the PSS (which had only four items and Chronbach's alpha of 0.53), the internal consistency reliability of the measures was high, with Chronbach's alphas ranging from 0.87 − 0.97.

3.5 Intervention Improvement/Modification

The exit interview elicited suggestions from MABT participants for improvement of the intervention. While all participants indicated that the eight sessions was sufficient, several suggested increasing the number of sessions, stating that they were just beginning to "get it" and wanted to continue gaining skills. While the intervention session duration (75 minutes) was reported as the right length of time, additional tools for more structured home practice support (e.g., readings, guided meditations) were requested. Two participants suggested adding a group educational and peer support component to the intervention, in which they could practice skills, share experiences, and learn from others who also received the intervention.

Process evaluation data from the MABT therapists indicated that the participants were able to successfully engage in all aspects of the intervention learning processes. Thus, there was no indication that modification to the protocol was needed for this population.

4. Discussion

The results of this pilot-test suggest high implementation feasibility and acceptability of MABT as an adjunct to office-based medication treatment for individuals with OUD. Recruitment for this small pilot was completed within two weeks, in half the time allotted to reach our recruitment goal. This finding suggests strong interest among patients receiving medication for opioid use disorder for expanding treatment to include adjunctive therapies, particularly mind-body approaches such as MABT. This finding also suggests the feasibility of recruitment via the NCMs, a strategy that also facilitated enrollment efficiency as only one interested patient did not meet study eligibility criteria.

The subsequent high retention to the study (i.e., no loss to follow-up) and to the intervention (4 of 5 participants completed > 80% of sessions), suggests implementation feasibility and MABT acceptability. Notably, all participants were stable on buprenorphine and were engaged in their medication treatment throughout the three months of the study, likely a positive influence on study retention outcomes. This positive retention result may also reflect a strong commitment to treatment among this small sample.

The positive satisfaction ratings and exit interview responses highlight MABT acceptability for men as well as women, important given that this intervention had not been previously delivered to men in addiction treatment. The high intervention acceptability and perceived benefit, and skills learned, are similar to prior MABT addiction treatment study results (Price & Smith-DiJulio, 2016; Price et al., 2018; Price, Wells, Donovan, & Brooks, 2012). The change in interoceptive awareness skills on the MAIA among those that received MABT was notable. The initial low mean score suggests the lack of familiarity, use of, or comfort with interoceptive awareness skills in this population. In contrast, the follow-up mean score indicates the capacity for a highly distressed sample to learn MABT skills within a relatively short intervention period. Last, the sharing of MABT experiences with NCM as well as family and friends, suggests participant comfort integrating MABT skills into treatment recovery processes and daily life.

We asked participants for their feedback and suggestions for improving MABT to help guide possible modifications for a planned larger future trial. Some participants suggested extending the intervention, either by adding more individual sessions or by adding peer sessions, however these are not feasible to implement given study design considerations. We will, however, add take-home readings and online meditations to support the use and integration of MABT skills into daily life. Notably, these suggestions for improvement, though common elements in many mindfulness-based approaches, had not been previously made by participants in MABT addiction treatment studies. This is likely because prior MABT treatment studies were adjuncts of intensive outpatient abstinent-based treatment programs involving a large time commitment. Also the majority of participants in past studies were parents of young children and therefore balancing the demands of family life (and possibly child protective services involvement) and treatment, whereas no participant in this pilot study had children living at home.

Limitations of this study include a small sample size and the potential for favorable sample selection by NCM recruitment into this study as the majority of participants had been in treatment for many months. Our larger follow up trial will continue with NCM recruitment but it will be important to enroll patients who, while stable on medication, are earlier in treatment (e.g. 1–2 months after initiation of buprenorphine). Recruitment earlier in treatment is critical for assessing the effectiveness of MABT to reduce substance use across a broad cross section of patients, particularly since a large proportion of those who relapse and drop out of treatment do so within the first few months. Likewise, given the report by several participants in this sample that they felt susceptible to relapse later in treatment (ranging in time between 3–11 months in treatment), large samples and longitudinal data collection involving follow-up assessments at 9 and 12 months may be needed to identify the benefits of MABT on longer-term treatment retention and related health outcomes. In addition, although participants felt the outcome measures were acceptable and captured many important aspects of the intervention benefits and learned skills, the full impact of MABT may not be fully assessed through self-report questionnaires suggesting the need to collect additional qualitative data in future research.

While not specific to the data collected in this study, broader implementation of MABT for OUD treatment (should it improve outcomes) would require changes in available staffing to

include licensed massage therapists or cross-training of existing staff in MABT methods. Nurse Care Managers may be appropriate staff to train, as might social workers or other mental health care providers working in existing collaborative care programs. As OUD treatment expands within medical systems, the practical challenges of delivering MABT or any effective behavioral intervention will need to be addressed.

In conclusion, this pilot study served to demonstrate MABT implementation feasibility and acceptability as an adjunct to office-based medication treatment. Our future larger trial of MABT will focus on MABT effectiveness to reduce opioid use and improve related health outcomes as an adjunct to medication treatment for OUD.

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Highlights

- Ten patients recruited in two weeks, indicating excellent recruitment feasibility
- No participants lost to follow-up, indicating excellent study retention
- High intervention attendance and satisfaction

Table 1

Demographic characteristics (N = 10)

Characteristic	N (%)
Age, mean (*SD*) range	46.6 (12.0) 30–61
Hispanic	3 (30%)
Race	
White	6 (60%)
More than one race	2 (20%)
Native Hawaiian or Pacific Islander	1 (10%)
Native American or Alaska Native	1 (10%)
Sex	
Cisgender male	7 (70%)
Cisgender female	3 (30%)
Marital Status	
Single/Divorced	8 (80%)
Domestic Partnership	2 (20%)
Education	
High school or GED	3 (30%)
Two years college or technical school	5 (50%)
College degree	2 (20%)
Parent with children < 18	0 (0 %)
Employment/Disability Status	
Employed	3 (30%)
Disability	3 (30%)
Insurance	
Medicare	5 (50%)
Medicaid	2 (20%)
Private, provided by work	2 (20%)
Private, not provided by work	1 (10%)
Prior times treated for SUD	
None	1 (10%)
Once	2 (20%)
Twice	1 (10%)
More than three times	6 (60%)
Treatment Mandated by Court	1 (10%)
Co-occurring mental health indicators	
Depression (> 14 screening cut-off for moderate)	7 (70%)
Anxiety (> 14 screening cut-off for moderate)	3 (30%)
PTSD (> 33 screening cut-off)	5 (50%)
Experience with Mind-Body Therapies	
No	4 (40%)
Minimal (1–10)	5 (50%)

Characteristic	N (%)
Experienced (> 31)	1 (10%)

Table 2

MABT Participants Satisfaction with Intervention (N = 5)

Question	Median (scale range)
1. How satisfied with the intervention?	3.0 (0–3)
2. How satisfied with the interventionist?	3.0 (0–3)
Did the things you learned in the intervention …	
3. Help support your OUD treatment?	3.0 (0–4)
4. Help relieve mental strain/stress?	3.0 (0–4)
5. Help relieve physical tension/discomfort?	2.5 (0–4)
6. Help you to feel empowered?	3.5 (0–4)
7. Help you feel more connected to your body?	3.5 (0–4)
8. Provide you with skills to help your general wellbeing?	3.5 (0–4)
Have you discussed your experience(s):	(% yes)
9. With your treatment counselor?	100%
10. With your family, friends, or peers in treatment?	100%