Published in final edited form as:

Attach Hum Dev. 2016 December ; 18(6): 596–617. doi:10.1080/14616734.2016.1226371.

Mothering from the Inside Out: results of a pilot study testing a mentalization-based therapy for mothers enrolled in mental health services

Nancy E. Suchman^{a,b}, Monica R. Ordway^c, Lourdes de las Heras^d, and Thomas J. McMahon^{a,b}

^aDepartment of Psychiatry, Yale University School of Medicine, New Haven, CT, USA

^bChild Study Center, Yale University School of Medicine, New Haven, CT, USA

^cYale University School of Nursing, New Haven, CT, USA

^dColumbia School of Social Work, Columbia University, New York, NY, USA

Abstract

Mothers who are involved with mental health services (for themselves or their children) rarely receive adequate support for their role as parents. Mental illness in a parent or child often exacerbates the challenges of managing psychological distress that is germane to the parenting roll. Mentalization-based approaches to psychotherapy for parents have the potential to address challenges of emotional regulation in parents by supporting their capacity to recognize and modulate negative affect during stressful parenting situations. In this study, we piloted Mothering from the Inside Out (MIO) with 17 mothers receiving services at a community-based mental health clinic. MIO is a 12-week, mentalization-based parenting intervention that demonstrated efficacy in two previous randomized controlled trials with substance using mothers. In this study, we were interested in determining whether community-based clinicians could deliver MIO with sustained fidelity. We were also interested in examining the preliminary feasibility, acceptability and efficacy of MIO when delivered by clinicians in a community mental health center. Finally, we were interested in replicating prior tests of the proposed treatment mechanisms. Treatment outcomes included maternal reflective functioning, psychiatric and parenting stress, and mother–child interaction quality. Our findings indicated that MIO was feasible and acceptable when delivered in the community-based setting and that all maternal indices improved. However, no improvement in mother–child interaction quality was found, possibly because of insufficient time for these changes to consolidate.

Keywords

Mental illness; intervention; parenting; attachment; mentalization

CONTACT Nancy E. Suchman, nancy.suchman@yale.edu, Department of Psychiatry, Yale University School of Medicine, One Long Wharf Drive, Suite 310, New Haven, CT 06511, USA.

Disclosure statement

No potential conflict of interest was reported by the authors.

Adult human psychopathology tends to aggregate within families and is highly transmittable to offspring (Goodman & Gotlib, 1999; Moore, Whaley, & Sigman, 2004; Murray & Johnston, 2006; Turner, Beidel, Roberson-Nay, & Tervo, 2003; Waugh & Bulik, 1999). Beginning in pregnancy and continuing through a child's adolescent and young adult years, parental psychopathology can influence child well-being through multiple pathways (e.g., genetic, biological, environmental, indirect and distal; see Suchman & DeCoste, 2012 for a review). However, a parent's mental illness may have the greatest impact on a child's adjustment during early years when the child is most dependent on the parent (Seifer, 2003). Parental psychopathology has been linked with numerous deficits in parenting infants, including parental insensitivity, intrusiveness, overcontrol and emotional negativity, all of which likely interfere with the parent's capacity to promote infant regulatory functions (Goodman & Gotlib, 1999; Kaitz & Maytal, 2005; Lovejoy, Graczyk, O'Hare, & Neuman, 2000; Seifer, 2003; Zahn-Waxler, 2002). During toddlerhood and preschool years, parental psychopathology has been linked with emotional negativity and withdrawal, restrictions in fostering autonomy, and deficits in the development of social partnership (Goodman & Gotlib, 1999; Zahn-Waxler et al., 2002). These deficits are likely to interfere with the parent's capacity to foster the toddler's and preschooler's capacities for separation, individuation and social competence (Galinsky, 1981; Heinicke, 2002; Seifer, 2003; Waugh & Bulik, 1999; Zahn-Waxler, 2002). During a child's school-age years, parental psychopathology has been associated with problems of excessive negativity, critical, harsh and overbearing approaches to monitoring and discipline, and an absence of empathy and tolerance (Goodman & Gotlib, 1999; Kassam-Adams, Garcia-Espana, Miller, & Winston, 2006; Murray & Johnston, 2006; Turner et al., 2003; Whaley, Pinto, & Sigman, 1999; Woodruff-Borden, Morrow, Bourland, & Cambron, 2002). These challenges may compromise the parent's capacity to promote the child's autonomy and self-discipline, social competence and, possibly, cognitive and intellectual growth (Heinicke, 2002).

The dynamic and fluctuating nature of adult psychopathology, as well as its many potential pathways of influence, make it impossible to adopt a "one size fits all" approach to parenting interventions. However, the conceptual framework of attachment – and more specifically, mentalization theory – offer promising and relevant organizing principles and strategies for addressing the core underlying issues of emotional and behavioral dysregulation that permeate many of the behavioral challenges inherent in parenting young children when the parent has a psychiatric illness. The organized system of communication and unique patterns of interaction (i.e., the attachment system) that emerge between a primary caregiver and child during the first years of life is thought to provide the foundation for emotional and behavioral regulatory capacities in the young child that will have a profound influence on most major areas of competence (e.g., cognitive, social, emotional) in the years to come (Sroufe, 1995; Sroufe, Egeland, Carlson, & Collins, 2005).

Secure attachment in early childhood has shown a strong association to adult caregiver attachment classification. Several decades ago, Fonagy and colleagues (Fonagy, Steele, Steele, Moran, & Higgitt, 1991; Fonagy, Target, Steele, & Steele, 1998; Steele & Steele, 2008) reported evidence suggesting that the transmission of attachment security across generations may be facilitated by a parent's capacity for mentalization – the ability to make sense of a child's behavior as an expression of underlying thoughts, emotions, and

intentions. Reflective functioning – or RF – is the observable and measurable manifestation of mentalization capacity (Fonagy et al., 1995). Several studies since then (e.g., Slade, Grienberger, Bernbach, Levy, & Locker, 2005; Grienberger, Kelly, & Slade, 2005) have corroborated this finding, indicating that the parent's capacity for understanding their children's mental states mediates their children's attachment security.

Adults with various forms of psychopathology (e.g., post-traumatic stress disorder, substance dependence, depression, panic disorder, eating disorders, borderline personality disorder, and psychosis) have demonstrated lower capacities for RF (for a review, see Katznelson, 2014). For example, in one study (Toth, Rogosch, & Cicchetti, 2008), mothers with depression demonstrated a mean RF score of 3.44, which is well below the benchmark score of 5.00 that represents basic RF capacity. In another study (Fonagy et al., 1996), patients with psychiatric diagnoses demonstrated a mean RF score of 3.7 whereas the non-psychiatric control demonstrated a mean RF score of 5.2. In a third study (MacBeth, Gumley, Schwannauer, & Fisher, 2011), patients with psychotic symptoms demonstrated a median RF score of 3.0. At the same time, the RF capacity may function as a buffer for child development in the face of adversity (Fonagy, Steele, Steele, Higgitt, and Target, 1994). Taken together, these findings suggest the potential benefit of developing and evaluating interventions for parents with mental illness that targets parental RF. To date, however, there have been no reported efforts to pilot such interventions with parents who struggle with mental illness. The aim of this study was to examine the preliminary feasibility, acceptability and efficacy of *Mothering from the Inside Out (MIO)*, a 12-session mentalization-based therapy (MBT) that was initially designed for and demonstrated efficacy in two randomized clinical trials with mothers enrolled in treatment for substance abuse (Suchman et al., 2010, in press; Suchman, DeCoste, McMahon, Rounsaville, & Mayes, 2011).

The MIO intervention

MIO is a manualized 12-session individual therapy developed to enhance a parent's capacity for RF in the parenting role (Suchman & Bers, 2015). MIO is based on the MBT model developed by Allen, Fonagy, and Bateman (2008), which emphasizes the restoration of mentalizing capacities under conditions of arousal by engaging in explicit, guided mentalization practice (Bateman & Fonagy, 2012).

Parental RF refers to a parent's capacity to make sense of her own mental and emotional experiences in the parenting role and to make sense of the mental and emotional states that drive her child's behavior. Parental RF has many immediate and practical benefits: it enables a parent to make sense of a young child's mental and emotional experiences, which in turn may help the parent respond sensitively to the infant's emotional and physical needs (Slade, 2005). It also enables the parent to recognize, understand and manage her own mental and emotional experiences and their impact on the child and caregiving relationship. This latter capacity is particularly relevant to mothers in addiction treatment because heightened distress and limited coping skills make them more vulnerable to emotional dysregulation and relapse. Recent findings supports the presence of two parental RF dimensions – a self-focused component representing the parent's capacity to recognize her own strong emotions and their impact on the child, and a child-focused component representing the parent's

capacity to recognize the child's strong emotions and their impact on the parent (see Suchman, DeCoste, Leigh, & Borelli, 2010).

The short-term goals of MIO are to: (1) provide a positive experience in a therapeutic relationship in which the mother's thoughts and emotions are taken seriously so that she can feel supported and understood and (2) begin a process of helping the mother make sense of her own and her child's underlying affective experiences and think about how these experiences are related to individual need, behavior and development. The long term goals of MIO are to: (1) support the mother's developing capacity for emotional regulation, (2) restore the mother's own capacity to engage in human attachment and (3) promote the mother's capacity to engage with and enjoy her child, tolerate her child's emotional distress, understand her child's emotional needs and support her child's developing regulatory capacities.

During each MIO session, the mother determines the focus of the discussion. If the child is not the immediate topic, the therapist will bring the child into mind when timing seems appropriate. Stressful situations – particularly those where the mother's capacity for RF is challenged – are considered in detail. The therapist invites the mother to reengage in the process of RF; that is, to consider thoughts, feelings and intentions in herself, her child and others as the therapist and parent review the stressful situation together. The therapist is careful not to shift the focus to the child too early. Often, the focus begins with recognizing the mother's own affective distress and understanding its mental and emotional antecedents. In this way, MIO emphasizes engagement in a *mentalizing process* rather than specifying a particular content. The therapist provides relevant developmental guidance when the mother's expectations for the child appear to be unrealistic. The therapist also suggests parenting strategies that are likely to promote secure attachment. The therapist's curious, inquisitive, not-knowing stance is considered essential to the therapeutic process because of the opaque and transient nature of mental states and to encourage the mother to remain actively engaged in a mentalizing process (for further details about the MIO intervention, see Suchman, DeCoste, Ordway, & Bers, 2013).

First and second randomized trials

We previously reported findings from two randomized, controlled trial with mothers enrolled in substance abuse treatment and caring for young children (ages birth to five; see Suchman et al., 2010, 2011, in press). In both trials, at the end of 12 sessions, in comparison with mothers who received an active psychoeducational comparison intervention, those who received MIO demonstrated higher levels of RF and these differences were sustained at follow up. Mothers in both studies who received MIO also demonstrated more sensitive interactions with their children – at post-treatment in the first trial and at 12-month follow up in the second trial. Addiction severity was significantly greater in the second study which may have accounted for the delay in interaction improvement.

Current investigation

Here, we report findings from a stage I pilot study conducted with 17 mothers caring for young children and receiving treatment at an outpatient mental health treatment clinic.

Staged intervention research (for a discussion, see Rounsaville, Carroll, & Onken, 2001) insures that investigators have the necessary elements in place (evidence of treatment fidelity, feasibility, acceptability and preliminary efficacy) before embarking on a full scale randomized clinical trial.

The first aim of the study was to determine if community-based mental health counsellors could be trained to deliver 12 sessions of MIO with sustained fidelity (the community-based implementation process is described in a separate forthcoming report: Ordway, McMahon, de las Heras, & Suchman, in press). The second aim was to examine the feasibility, acceptability and preliminary efficacy of the 12-session MIO intervention. The third aim was to conduct a preliminary test of the proposed mechanisms of change in the MIO treatment approach. Feasibility was operationalized as attendance in treatment and acceptability was operationalized as treatment alliance. To test acceptability, we predicted that mothers' reports of treatment alliance would represent very good ratings. To test preliminary efficacy, we predicted that mothers would demonstrate higher levels of parental RF and report lower levels of parenting and psychiatric distress at the end of 12 sessions. We were also interested in examining the intervention's efficacy for self-focused RF versus child-focused RF. We also predicted that mother-child interaction quality (i.e., maternal sensitivity, child involvement and dyadic reciprocity) would show improvement at the end of 12 sessions. To test proposed mechanisms of change, we predicted that counselor fidelity to MIO would predict maternal improvement in RF which would, in turn, predict improvement in quality of mother-child interactions.

Method

Overview

This trial was conducted on site in a satellite clinic of a large, urban community mental health center that serves children, adolescents, young adults and adults. The clinic is located adjacent to a small northeastern city where many clients are exposed to urban problems (e.g., crime, poverty, minimal affordable housing) typically identified with larger cities. Interested mothers who were enrolled in outpatient services themselves or who had a biological child enrolled in outpatient services at the treatment center were eligible for treatment if they were caring for a child between birth and 84 months of age. All mothers who consented received 12 sessions of a manualized mentalization-based intervention called *Mothering from the Inside Out (MIO)* that was originally designed for mothers enrolled in treatment for drug addiction (see Suchman et al., 2013, in press). Enrolled mothers and their families continued to receive treatment as usual at the clinic throughout their enrollment in the study. The study included a 2-week baseline assessment, 12-week intervention and 2-week post-treatment assessment. Treatment fidelity was measured using a scale developed for the randomized trial involving substance using mothers (Suchman et al., in press). Treatment attendance and alliance served as measures of feasibility and acceptability, respectively. Maternal outcomes included RF, parenting stress and psychiatric distress. Mother-child interaction outcomes included maternal sensitivity, child involvement and dyadic reciprocity. All procedures were approved by the Yale University School of Medicine Institutional Review Board.

Recruitment and consent procedures

Mother–child dyads were eligible to participate if the mother was English speaking and caring for a child between birth and 84 months of age (the target child in the study) and either the mother or target child was enrolled in the outpatient mental health treatment program where the study was conducted. Dyads were excluded if the mother had significant cognitive impairment or required inpatient hospitalization. Dyads were also excluded if the target child had a serious illness or significant developmental delay.

Mothers were recruited via clinician referrals. Interested mothers were screened for eligibility by a research assistant either in person or by phone. Mothers who met eligibility criteria met individually with the research assistant to complete informed consent procedures. Mothers caring for more than one eligible child were allowed to choose which child would participate with them. Mothers who had a child living with a relative were permitted to enroll if they had regular contact with the child (e.g., 3–4 days per week). In this case, the relative or legal guardian of the child provided consent for the child's participation. Limits of confidentiality and the protection of research records under a Certificate of Confidentiality were explained. The compensation schedule for research assessments was also reviewed.

Sample

Seventeen mothers caring for a child between birth and 84 months of age consented to participate and completed an initial intake evaluation and baseline assessments. Descriptive data for the sample are shown in Table 1. On average, mothers were 30.53 ($SD = 9.00$) years old, had completed 12.09 ($SD = .93$) years of education, and were caring for 1.59 ($SD = 1.18$) children under 16 years of age. Most of the mothers were Caucasian (44.4%), 33.3% were Hispanic or Latina, and 22.2% were African American. A large percentage of the mothers had never been married (55.6%), 22.2% were cohabitating with a partner, 11.1% were married, 5.6% were divorced and 5.6% were separated. A vast majority (94.1%) were living independently, 5.9% depended on family or friends for housing, and none were homeless at the time of enrollment. Approximately one-third (29.4%) of children were involved with the Child Protective Services. In their own parents, large percentages of mothers reported histories of substance use (35.3% for mothers and 41.2% for fathers) and mental illness (47.1% for mothers and 17.6% for fathers). Large percentages also reported exposure to trauma during their lifetime of which the most prevalent were sexual assault (88.2%) and physical battery (76.5%). A majority of mothers (76.5%) carried at least one psychiatric diagnosis. Axis I diagnoses included anxiety disorders (52.94%), depressive disorders (35.29%), unspecified mood disorders (11.76%) and substance use disorders in remission (11.76%). Most mothers (47.08) had a deferred Axis II diagnosis whereas 11.76% were diagnosed with borderline personality disorder and 5.88% with personality disorder not otherwise specified (NOS). For four of the 17 mothers (25.3%) the target child was the primary patient at the clinic.

Fathers—Per mothers' reports, fathers of target children were 29.40 years old ($SD = 12.58$), on average, and 64.7% were living separately from the mother and target child. A

majority of fathers were employed (66.7%), a large minority (28.7%) were reported as having mental health problems, and 16.7% were reported as having substance use problems.

Target children—Target children were 38.00 ($SD = 23.51$) months of age, on average and 52.9% were male. A large majority (88.2%) lived with their mother at baseline whereas a minority had frequent visits with the mother but lived with another family member (5.9%) or in foster care (5.9%).

Assessment procedures

Baseline—Following consent, the mother and participating child were scheduled for two baseline assessment visits during which the mother completed an initial intake interview, and interview assessment of RF, and survey measures of RF, parenting stress and psychiatric symptoms. She and her child also completed a 5–10 min play session to assess interaction quality. Mothers received compensation and children received a developmentally-appropriate toy for each completed assessment. Following completion of assessments, mothers were introduced to their MIO therapist. Because MIO therapists were staff members or trainees at the mental health clinic, care was taken to assign mothers to therapists who were *not* already on the therapist's caseload.

Treatment—During the 12-week treatment phase, mothers met weekly for a one hour individual session with their assigned MIO therapist and completed brief surveys about their additional services received at the clinic and in the community. A working alliance survey was completed four times (at weeks 3, 6, 9 and 12) by the mother and therapist. At the end of 12 weeks, mothers were given a choice to continue for 12 additional sessions and seven mothers chose to do so (a report of these additional findings is forthcoming).

Post-treatment—At the end of the 12 treatment sessions, all mothers completed two post-treatment visits during which maternal measures of RF, parenting stress and psychiatric symptoms were repeated. Mothers and target children also repeated assessments of interaction quality.

Child care—Developmentally-informed child care was available to all target children in the study at every visit. Research staff received weekly supervision from a developmental specialist to discuss concerns about child safety and development.

Compensation and attendance incentives—Procedures used to minimize potential barriers to participation (e.g., providing a child-friendly environment with developmentally-informed child care, offering healthy snacks, diapers, spare clothing and bus passes, providing graduate certificates upon completion) are described in detail in the literature (see Ordway, McMahon, de las Heras, & Suchman, in press; Suchman et al., 2013). Economic compensation for research visits was also structured to maximize motivation for assessment completion. Payment for assessment completion increased incrementally from baseline to post-treatment. Bonus payments of \$5–\$10 were also provided for on time assessment completion. Mothers who completed all assessments on schedule received \$200 in total.

Target children received a small developmentally-appropriate toy for their participation in each play session.

MIO therapist training/supervision—A total of 12 therapists from the clinic (one nurse practitioner, two social workers, one licensed psychologist, six pre-doctoral psychology interns and two post-doctoral psychology fellows) were trained by author N.E.S. and another clinical consultant to provide MIO therapy to clients enrolled in the study across a 3-year period. All but one therapist (who joined the study for 2 years) joined the study for 1 year. Training lasted 8–12 weeks and included didactic training on mentalization theory and the treatment approach as well as experiential training on the treatment techniques (demonstrations, discussions and role plays). Upon training completion, therapists were assigned a single case and received weekly clinical supervision from the trainers thereafter until treatment completion.

Constructs and measures

Treatment integrity—Treatment integrity was measured using *The Revised MIO/PE Adherence Rating Scale* (Suchman, Rosenberger, & DeCoste, 2010) used in the randomized trial testing MIO against an active control (Parent Education or PE) (Suchman et al., in press). The scale contains three *Generic* items measuring alliance-building efforts (e.g., listening and making supportive statements) that are expected to occur in but are not unique to MIO, six *Unique MIO* items measuring behaviors that are expected to occur in and are unique to MIO (e.g., exploring underlying mental states), and two *Psychoeducational* items measuring psycho-educational behaviors (e.g., behavior-based parenting strategies) are not expected to occur very often in MIO (see Table 2). Two independent raters who were trained by author N.E.S. (and who rated sessions for the previous randomized trial) coded six randomly selected sessions from this trial to establish interrater reliability. Interclass correlations for the 11 items ranged from .76 to .1.00. Raters coded 102 sessions from a randomly selected pool of 11 subjects. An average of nine sessions were rated per subject.

Working alliance—The Working Alliance Inventory-Revised (Horvath & Greenberg, 1989) is a 36-item self-report measure rated on a seven-point scale with parallel client and therapist forms. The measure consists of four subscales that measure perceptions of agreement about therapeutic task, bond and goal, Cronbach's alpha coefficients for this sample at baseline indicated adequate internal consistency for the total scale only and this only for responses on the client form (Cronbach's $\alpha = .75$ for the client form total score and .40 for the therapist form total score). Therefore, only client form total scores were used and reported for this study.

Intake interview—A 1-h structured clinical interview was used to gather information about the mother's sociodemographic background and her family, psychiatric, trauma and legal history.

Maternal RF—The 33-item *Parent Development Interview* (PDI; Slade, Aber, Berger, Bresgi, & Kaplan, 2003) was used to measure parental RF. The PDI is a semi-structured interview that requires parents to describe specific interactions with the target child. Some

questions (called “demand” questions) are designed to explicitly probe for mental states in the mother (e.g., “Have you ever been angry as a parent?” “Can you tell me about a time recently when you felt that way?”) or the child (e.g., “Does your child ever get emotionally upset?” “Can you tell me about the last time that happened?”) Other questions (called “permit” questions) that have a more general focus (e.g., “Can you tell me about a time in the last week that you and your child really clicked?”) are designed to permit rather than demand mentalizing activity. For this study, a shorter, 19-item version of the PDI was developed, with permission from the measure’s primary author, in order to minimize assessment burden. This version typically required 1 h to administer.

Interviews were video-recorded and transcribed verbatim by a professional transcription service. Dates, ID numbers and identifying information were masked to keep coders blind to subject and time point. Each PDI interview item is coded on a –1 to 9 scale depending on the amount and quality of apparent mentalizing. A score –3 is considered “pre-mentalizing” because it represents the absence of awareness of mental states except for vague, unelaborated, cliché-like references (e.g., “He doesn’t have a care in the world”). A score of 5 is considered the benchmark for adequate mentalizing and indicates a demonstrated awareness of mental states and how they influence behaviors and relationships (e.g., “I know when she likes her snack because she smiles and claps her hands ... and that makes me proud”). Higher scores indicate more complex and nuanced understanding of the nature of mental states and how they influence behavior and relationships. All PDIs were coded by a colleague at another institution who was trained by the PDI author and author N.E.S. and remained blind to all other information about subjects. A randomly selected sample of ten interviews was used to assess interrater reliability. Interclass correlations ranged from .77 to .98. The outcome score of greatest interest was the mean RF score for all items which yielded a .77 Cronbach’s α for this sample at baseline. We were also interested in examining the *highest* level of RF achieved on any single item as an indicator of each subject’s *potential* for mentalizing (this variable was labeled Potential RF). Finally, based on prior research (see Suchman et al., 2010), we used the four-item Self-focused RF scale and the five-item Child-focused RF scale to examine outcomes on each dimension.

Maternal parenting stress—The Parenting Stress Index – Short Form (PSI-SF; Abidin, 1995) is a 36-item questionnaire that measures the relative magnitude of stress in the parent–child system. Rated on a five-point scale, the measure contains three subscales: The Parental Distress (PD) subscale determines the distress parents experience as a function of personal factors that are directly related to parenting (e.g., “I find myself giving up more of my life to meet my children’s needs than I ever expected.” The Parent–Child Dysfunctional Interaction (P-CDI) subscale focuses on the degree to which parents are satisfied with their children’s abilities to meet their expectations (e.g., “My child rarely does things for me that make me feel good.”). The Difficult Child (DC) subscale assesses the degree to which parents are bothered by behavioral characteristics of their children that make them difficult to manage (e.g., “My child makes more demands on me than most children.”) The PSI-SF subscales have demonstrated good internal consistency among substance-abusing mothers (Kelley, 1998) and concurrent validity with the full-length PSI (Abidin, 1995). For this sample, Cronbach’s alpha coefficients at baseline were .84, .72 and .77, for the PD, P-CDI and DC

subscales, respectively. Percentile ranks based on normative data are also available for the PSI-SF (Abidin, 1995)

Maternal psychiatric symptoms—Psychiatric symptoms were assessed with the *Brief Symptom Index* (BSI; Derogatis, 1993) Global Severity Index and *Beck Depression Inventory – Short Form* (BDI-SF; Beck, Steer, & Brown, 1996). The BSI is a standardized, widely used, 53-item, 4-point, self-report measure of psychopathology. The composite Global Severity Index (GSI; Cronbach's $\alpha = .96$ for this sample at baseline) measures current overall symptomatology across multiple domains (e.g., depression, anxiety, interpersonal sensitivity, somatic complaints, paranoid ideation) and has demonstrated good reliability and validity (Derogatis, 1993). *T*-scores above 60 on the GSI indicate risk for a clinical disorder. The BDI is a widely-used 21-item questionnaire that assesses general depression rated on a four-point scale (Cronbach's $\alpha = .84$ for this sample at baseline).

Mother–child interactions—A free-play session was used to measure quality of the mother–child relationship using toys that were chosen to match two age groups of children developmentally (birth to 35 months and 36–84 months). Each free play session lasted 5–10 min and was videotaped. Play sessions were coded using Feldman's system for *Coding Interactive Behavior* (CIB; Feldman, 1998). The CIB uses a five-point scale for rating parent, child and dyadic behaviors that are likely to promote or inhibit emotional regulation in the child and dyad. Three composite scales, including the 12-item *Maternal Sensitivity Scale* (Cronbach's $\alpha = .92$ at baseline), the eight-item *Child Involvement Scale* (Cronbach's $\alpha = .91$ at baseline), and the three-item *Dyadic Reciprocity Scale* (Cronbach's $\alpha = .96$ at baseline) were used to assess interaction quality. For each factor measured by the composite scales, a score of 1 indicates an absence, a score of 3 indicates a moderate presence, and a score of 5 indicates a consistent presence. All sessions were coded by a rater who was trained by the measure author and remained blind to time point and other information about the dyad. The rater and trainer established reliability on ten randomly selected interactions from the previous randomized trial (Suchman et al., in press) and interclass correlations for the 23 items ranged from .77 to .99.

Data analysis

Treatment fidelity—Data from 102 rated sessions from 11 subjects were included in data analyses involving treatment fidelity. Total scores were computed by summing items on each scale. For each session, therapist fidelity was considered adequate with a score of 5 on the Unique MIO scale (range = 0–12), 3 on the *Generic* scale (range = 0–6) and 2 on the *Psychoeducational* scale (range = 0–4). To confirm intervention construct validity, we replicated the factor analysis used in the previous randomized clinical trial (see Suchman et al., in press) using adherence data from this study.

Treatment feasibility and acceptability—Treatment was considered feasible if at least 75% of the mothers completed treatment and if clients attended 67% (8) of their 12 scheduled sessions. A mean score of 4 (range = 1 = 5) on the treatment alliance measure was considered to represent treatment acceptability.

Treatment outcomes—To test for meaningful change in outcomes from baseline-to-post-treatment, effect size (d) was computed (where .20 = small, .50 = medium, and .80 = large effect; Cohen, 1988) for all pre–post differences using pooled variance. Specifically, the calculation of d involved dividing the difference between baseline and post-treatment scores by the pooled variance (Cohen, 1988). This method was considered useful for determining sample size for a future trial and also because of its immunity to the small sample size in this study. Effects .20 were considered meaningful. All outcome analyses were conducted with treatment completers ($n = 14$) and the full intention-to-treat sample ($n = 17$) in order to identify any sample differences in patterns of outcome effects. Missing values for post-treatment in the intention-to-treat data were replaced with baseline values as a conservative estimate that assumed no improvement. To insure that mean substitution did not significantly alter (i.e., reduce) variance (see Schafer & Graham, 2002), equivalence of variances was confirmed across the two time points and no significant differences were found. No substitutions were made for missing working alliance data.

Treatment mechanisms—To examine associations between potential mechanisms, the following steps were completed: first, a mean fidelity score representing therapist fidelity to Unique MIO components during the 12 week treatment was computed for each subject. Second, bivariate correlations among the three mother–child interaction indices were examined to the appropriateness of combining them into one composite index. Intercorrelations ranged from .69 ($p = .002$) to .91 ($p = .000$) indicating that the constructs were strongly related. Third, change scores for mean RF and the overall interaction composite were computed by subtracting the baseline score from the post-treatment score. Finally, we examined bivariate correlations between the MIO fidelity score, mean RF change scores, and overall interaction change scores to test hypotheses about potential mechanisms. Given the small sample size, we used guidelines suggested by Cohen (1988, p. 82) where a correlation (r) of .10 is considered small, .30 is considered medium and .50 is considered large, to interpret the magnitude of associations to supplement significance tests.

Results

Treatment fidelity

As shown in Table 2, the mean *Unique MIO* score for the 12 MIO therapists was 5.80 ($SD = 2.46$) indicating adequate fidelity to unique MIO components. The mean *Generic* scale score was 4.00 ($SD = .14$), indicating adequate fidelity to generic, alliance-building components. The mean *Psychoeducational* scale score was 1.75 ($SD = 1.22$) indicating appropriate absence of psychoeducational components. As shown in Table 2, four robust factors corresponding to treatment components were identified, including two factors representing the *Unique MIO* component (factor loading range: .66–.81), one factor representing the *Generic* component (factor loading range: .78–.98) and one factor representing the *Psychoeducational* component (factor loading = .97). (Discriminant validity between the *Unique MIO* and *Psychoeducational* components was confirmed in the first two randomized clinical trials; see Suchman et al., 2010, in press.)

Treatment feasibility and acceptability

Attendance—Of the 17 randomized mothers, all 17 (100%) completed baseline assessments and continued to treatment. Of the 17 who began treatment, 14 (83.25%) completed treatment and 13 (76.47%) completed post-treatment assessments. Three mothers discontinued after the first month of treatment; two moved out of state and one withdrew for unknown reasons. On average, mothers completed 70% (8) of 12 sessions. In sum, MIO met a priori criteria for treatment feasibility.

Treatment alliance—As shown in Figure 1, mothers' overall perceptions of working alliance were strongly positive at week 3 ($M = 4.33$, $SD = .40$), week 6 ($M = 4.30$, $SD = .39$), week 9 ($M = 4.37$, $SD = .50$) and week 12 ($M = 4.41$, $SD = .45$) indicating that, on average, mothers experienced agreement with the therapist in terms of tasks and goals of the therapy and also experienced a strong and consistent therapeutic bond.

Treatment outcomes

Maternal RF—As shown in Table 3, mean RF score showed a moderate increase from baseline to post-treatment ($d = .34$) although clinically, this score remained at a pre-mentalizing level (i.e., 5) where mothers were able to recognize simple mental states in themselves and their children but were *not* consistent in their capacity to recognize how mental states and emotions influence behavior. Potential RF also showed a moderate increase from baseline to post-treatment ($d = .35$) and, by the end of treatment, was approaching the normative score of 5, which represents a basic capacity to understand how mental states influence behavior. Child-focused RF showed a large increase ($d = .64$) whereas self-focused RF showed no increase ($d = .04$) from baseline to post-treatment.

Maternal parenting stress—As shown in Table 3, parenting stress reported by mothers decreased meaningfully on two of the three indices. At the end of treatment, mothers showed notably lower scores on the Personal Distress and Difficult Child scales but not the Parent–Child Dysfunctional Interaction Scale. The mean score for Personal Distress ranked in the 75th percentile at baseline which suggests that mothers were likely experiencing personal adjustment problems beyond the scope of the mother–child relationship (Abidin, 1995). By the end of treatment, the Personal Distress Score ranked in the 60th percentile, indicating that mothers were less likely to be feeling that their parenting role was infringing upon their personal life. The mean score for Difficult Child ranked in the 75th percentile at baseline which suggests, for mothers of infants under 18 months of age, that the mother was likely experiencing the infant as having difficulties with regulatory processes (Abidin, 1995). For mothers of children age 24 months and older, a 75th percentile ranking suggests that the mother was likely experiencing the child as having problems with behavioral adjustment and behavioral symptoms (Abidin, 1995). By the end of treatment, the Difficult Child score ranked in the 60th percentile indicating that mothers were less likely to experience the target child as having behavioral problems (or as a burden) by the end of treatment. The mean score for Parent–Child Dysfunctional Interaction ranked in the 60th percentile at baseline and post-treatment indicating that, although there may be some tendency in the mother toward “feeling abused or rejected by the child or toward feeling disappointment in or

alienated by the child,” the magnitude of this experience fell within normal limits at both time points (Abidin, 1995, p. 56).

Maternal psychiatric symptoms—As shown in Table 3, at baseline, mothers reported levels of global psychiatric distress (e.g., $T > 60$) that are considered clinically significant (Derogatis, 1993) whereas at the end of treatment, the T scores for global psychiatric distress fell to within normal limits (e.g., $T < 60$) and the magnitude of this change corresponded to a medium effect ($d = -.41$). At baseline, the group mean for depression corresponded to a mild level whereas at the end of treatment, the mean score corresponded to a minimal level (Beck et al., 1996) and the magnitude of this change corresponded to a medium effect ($d = -.58$).

Mother–child interactions—As shown in Table 3, scores at baseline and post-treatment corresponded to a medium level of maternal sensitivity, child involvement and dyadic reciprocity, respectively. There were no meaningful changes in any of these scores across time.

Treatment completers versus intention-to-treat sample—There were no differences in effect patterns across the two samples.

Mechanisms of change

As shown in Figure 2, the association between therapist fidelity to Unique MIO components and maternal improvement in Mean RF at post-treatment was statistically significant ($r = .53$, $p = .03$) and corresponded to a large effect. Similarly, the association between improvement in Mean RF and overall interaction quality was marginally significant ($r = .43$, $p = .08$) and considered a medium-to-large-effect. Together these findings confirmed our hypothesis that greater therapist fidelity to MIO is likely to lead to greater improvement in maternal RF which, in turn, is likely to be associated with improvement in mother–child interaction quality.

Discussion

In this paper, we reported results from the first pilot study testing the efficacy of *Mothering from the Inside Out*, a 12 session manualized individual mentalization-based therapy for mothers involved with mental health services. The aims of the study were to (1) determine whether community-based clinicians could be trained to deliver MIO with fidelity, (2) examine the preliminary feasibility, acceptability and efficacy of MIO when delivered in a community-based mental health treatment setting, and (3) conduct a preliminary test of proposed mechanisms of change in the MIO treatment approach. The implications of our findings for clinical interventions and research are discussed below.

Treatment fidelity in a community-based setting

The group of 12 community-based counselors trained to deliver MIO was able to deliver the intervention with sustained fidelity. This means that the integrity of MIO was upheld and clients received the intervention that was *intended* without environmental influences

affecting or altering its delivery. Given the diversity in clinician backgrounds (i.e., nursing, social work and clinical psychology), this finding suggests that clinicians from several professions may be able to learn to deliver MIO in real world settings with sustained fidelity. This is especially important in light of the well-known science-to-service gap where evidenced-based interventions fail to succeed under conditions of high external validity (see Onken, Carroll, Shoham, Cuthbert, & Riddle, 2014). This finding also indicates promise for further testing the efficacy of MIO when delivered by diverse clinic staff under conditions of assured fidelity in other community-based settings.

Feasibility and acceptability

The MIO intervention was well-attended (83% completion rate) and well-received (with consistently high treatment alliance ratings) by the mothers in the study. Parenting can be a difficult treatment focus for mothers who are struggling with their parenting role especially when they are worried about losing child custody. Moreover, in this study, no mother was mandated to treatment and mothers were informed that they could withdraw at any time without consequence.

Compensation for research assessments likely served as an additional attendance incentive. But the strong and consistent treatment alliance ratings suggest that, once enrolled, a majority of mothers consistently felt understood and supported by their clinician which likely influenced attendance as well. These findings suggest that MIO has potential to be successfully integrated into a community mental health setting, possibly even without external incentives.

Preliminary efficacy

MIO demonstrated preliminary efficacy for improving maternal RF and reducing parenting and psychiatric distress. At the end of 12 sessions, the greatest gains in parental RF involved the child-focused component where mothers showed greater acknowledgement of their children's strong emotions and their impact on the parent. Changes in self-focused RF were nil. Although statistically moderate, changes in potential RF (the highest level of RF achieved on any single item) were more modest. Together, these findings indicate that brief mentalization-based interventions can promote mentalization for children in parents who are enrolled in mental health services but that more intensive interventions may be needed in order to improve self-mentalization capacity. These findings also suggest that a parent's potential RF (capacity to use RF under some parenting circumstances that require it) can also improve modestly following brief intervention.

At the end of 12 sessions, mothers had also reported their experience of parenting and psychiatric stress had fallen to ranges that were considered within normal limits. These findings suggest that a mentalization-based parenting therapy for mothers involved with mental health services may enhance the effects of the mental health services that target their psychiatric symptoms. This finding is critical in light of prior research showing that, for high risk samples, improvement in parental RF must sometimes be accompanied by improvement in psychiatric distress in order to benefit caregiving behavior (see Suchman, DeCoste, Rosenberger, & McMahon, 2012). Theoretically, the capacity to mentalize is thought to

serve a regulatory function because it brings the experience of negative affect into direct awareness, allowing it to be modulated. Mothers involved with mental health services, in particular, may especially benefit from a mentalization-based therapeutic approach because mentalizing is likely related to psychological deficits at the core of many mental illnesses.

These findings are generally consistent with our two prior randomized trials (see, Suchman et al., 2011, in press), with the exception of self-focused and child-focused RF. In our first efficacy trial conducted with mothers in treatment for substance use disorders, self-focused RF improved significantly whereas child-focused RF showed no improvement (Suchman et al., 2011). It may be that problems with stress regulation and impulse control that often characterize addictive disorders call for a stronger emphasis on self-mentalization in the therapy whereas problems with internalizing symptoms (e.g., anxiety and depression) characteristic of psychiatric populations may indicate a need to focus beyond internal affective distress to the mental states of others.

Although MIO demonstrated modest improvements in the overarching capacity for RF, it may take more than 12 weeks to secure a consistent level of adequate RF. Moreover, these findings must be considered preliminary, though, due to the small sample, absence of a comparison group and random assignment, and lack of evidence that results can be sustained during a follow-up period.

Unlike the two randomized clinical trials with substance using mothers, in this study, no changes in mother–child interactions were observed. It may be that more time is needed for changes in mother–child interactions to be consolidated as this was the case for mothers in the second randomized trial with substance using mothers where those receiving MIO did not demonstrate improved interactions with their children until the one-year follow up (see Suchman et al., in press).

Mechanisms of change

Support was found for the proposed mechanisms of change: Therapist fidelity to the Unique MIO treatment components predicted improvement in maternal RF which, in turn, was associated with improvement in quality of mother–child interactions. This finding supports the theoretical premise that maternal RF is related to the formation of secure attachment – and possibly synchronous mother–child relationships across time. This finding also lends further support to the possibility that mother–child interactions will show greater improvement once they have had more time to consolidate. Consistent with previous findings (see Suchman et al., 2010, 2011), this finding adds to a growing body of evidence showing the validity of this treatment model for improving mother–child relationships in high risk dyads where psychoeducational instruction and behavioral coaching have proven insufficient.

Implications for future research

Findings from this and our previous randomized trial (Suchman et al., 2010, 2011, 2012, in press) highlight the importance of carefully considering mechanisms of change when developing and evaluating interventions for parent populations at the far end of the psychosocial risk spectrum (e.g., parents with chronic addiction and psychiatric disorders).

Interventions that directly target change in parenting behavior through psycho-educational instruction and hands-on parent coaching have generally worked well to prevent escalation of conduct problems in children whose parents are experiencing moderate environmental stressors and psychosocial challenges (Sanders, Markie-Dadds, Tully, & Bor, 2000; Webster-Stratton & Reid, 2010). However, to date, none of the evidence-based behavior-targeting interventions have demonstrated promise for parents at the extreme end of the risk spectrum who often leave these interventions prematurely and accumulate experiences of frustration and failure as they continue to draw the attention of child welfare agencies. Our research suggests that, for parents who have more profound difficulties tolerating stress, regulating emotions, and managing impulses, targeting these psychological deficits in a brief-yet-intensive individualized therapy that focuses on ameliorating these issues (i.e., strengthening the mentalizing capacity) may be a more effective route to improving parent-child relationships and preventing the intergenerational transmission of addiction psychopathology.

The concept of mentalization and its observable manifestation in RF, appears to be a critical mechanism in the transmission of secure attachment across generations that requires further study in high-risk populations. Unlike other complex psychodynamically grounded constructs (e.g., ego development), mentalization has been operationalized for empirical research (Slade et al., 2003; Luyten et al., 2009) and has strong theoretical grounding in and empirical association with adult and child attachment (see Katznelson, 2014 for a review). Mental illness has a profound impact on adults who find themselves in the parenting role caring for young children and even more profoundly on the young children themselves. Intervention with this vulnerable and often disenfranchised and stigmatized population is very challenging and requires theoretically-grounded approaches that take the unique psychosocial consequences of mental illness into account. Mentalization-based therapy for mothers has now shown preliminary promise for improving maternal RF for mothers involved with mental health services. The next steps in research need to involve larger samples, randomization to active psycho-educational comparison interventions, testing for delayed effects in mother-child interactions and sustained effects across time, and continuing to carefully test the intervention's efficacy in real world settings.

Acknowledgments

We would like to thank our Research Assistants Rachel Terino, Molly O'Connor and Christina Carlone for their many important contributions to this work. We are grateful for the input we have received from clinical consultant Susan Bers. Finally, this study was done at the Connecticut Mental Health Center, a joint venture between the Connecticut Department of Mental Health and Addiction Services and the Yale University School of Medicine, and we wish to thank the patients and clinicians at the West Haven Mental Health Clinic because without their participation and support this work would not have been possible.

Funding

The investigators would like to acknowledge the financial support from National Institute on Drug Abuse for its ongoing funding including [R01 DA17294] (Suchman, Principal Investigator [PI]) and [K02 DA023504] (Suchman, PI) and the National Institute of Nursing [T32NR008346] (Reynolds, PI).

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Figure 1.
Mean client ratings of therapeutic alliance across time (n = 17).

Figure 2.
Pearson's r correlations linking proposed mechanisms of change.

Table 1

Descriptive data.

Maternal characteristics (n = 17)	Percent or M (SD)	Range
Age	30.53 (9.00)	19–48
Education (years)	12.06 (.93)	10–14
Completed high school	77.8	
Unemployed	70.6	
Receiving public assistance	100.0	
Ethnicity		
Caucasian	44.4	
Hispanic/Latino	33.3	
African American	22.2	
Marital status		
Never married	55.6	
Cohabitating	22.2	
Married	11.1	
Divorced	5.6	
Separated	5.6	
Domicile		
Independent	94.1	
Dependent	5.9	
Homeless	0.0	
Number of biological children	1.94 (1.20)	1–5
Number of children in mother's care	1.59 (1.18)	0–5
DCF-involved	29.4	
Developmental Factors		
Maternal mental illness	47.1	
Paternal substance abuse	41.2	
Maternal substance abuse	35.3	
Paternal mental illness	17.6	
Lifetime trauma exposure		
Sexual assault	88.2	
Victim of physical violence	76.5	
Abortion/miscarriage	70.6	
Death in family or significant other	58.8	
Witnessed violence	52.9	
Safety threatened by another	41.2	
Serious illness or injury	5.9	
Psychiatric diagnosis		
Axis I		
Anxiety disorders	52.94	
Post-traumatic stress disorder	35.29	

Maternal characteristics (n = 17)	Percent or M (SD)	Range
Generalized anxiety disorder	11.76	
Anxiety disorder NOS	5.88	
Depressive disorders	35.29	
Depressive disorder NOS	23.53	
Major depression, recurrent unspecified	5.88	
Dysthymia	5.88	
Mood disorder NOS	11.76	
Substance use disorders	11.76	
Poly-substance dependence	5.88	
Alcohol and marijuana dependence	5.88	
Axis II		
Deferred	47.06	
Borderline Personality	11.76	
Personality disorder NOS	5.88	
No psychiatric diagnosis	23.53	
Target child's father		
Age	29.40 (12.58)	20–48
Living at home	35.3	
Employed	66.7	
History of substance use	16.7	
History of mental illness	28.7	
Target child		
Age (months)	38.00 (23.51)	3–80
Male	52.9	
Where child lives		
With mother	88.2	
With another relative	5.9	
In foster care	5.9	

Table 2

Mothering from the Inside Out (MIO) treatment fidelity scale item factor loadings and mean comparisons.

Scale item	Factor loadings				Mean (SD)
	1	2	3	4	
Unique to MIO					
1. Developmental guidance about child's emotional needs and attachment-based parenting strategies	.15	-.02	.74	-.14	5.80 (2.46)
2. Explores thoughts and emotions underlying the child's behavior	-.14	.30	.69	.18	
3. Explores mother's mental representations of her child and their relationship	-.08	.30	.69	.18	
4. Explores thoughts and emotions underlying mother's behaviors	.20	.07	.02	.78	
5. Helps mother make sense of her own thoughts and emotions	-.09	-.15	-.01	.81	
6. Explores how mother's thoughts and emotions might affect the child	.10	.00	.66	.30	
Generic components					
7. Builds alliance through listening and making encouraging, supportive statements	.88	-.21	.09	.05	4.00 (.14)
8. Remains neutral during descriptions reflecting questionable parenting attitudes and strategies	.98	.15	-.03	.02	
9. Assists mother to address concrete, practical problems or immediate crises when asked	.78	-.05	.13	.17	
Psychoeducational components					
10. Developmental guidance about child behavior and behavior-based parenting strategies.	.14	.97	.13	-.05	1.75 (1.22)
11. Developmental guidance about child's physical safety.	.14	.97	.13	-.05	

Table 3Effect size (*d*) for treatment outcome differences from baseline to 12 weeks.

	Baseline	12 weeks	<i>d</i>
Maternal reflective functioning (RF)			
Mean RF	2.85 (.58)	3.11 (.60)	.34
Potential RF	4.12 (.86)	4.53 (.80)	.35
Child-focused RF	2.91 (.51)	3.42 (.64)	.64
Self-focused RF	2.81 (.72)	2.85 (.72)	.04
Parenting stress			
Personal Distress	30.35 (9.73)	26.71 (10.74)	.25
Dysfunctional Interaction	21.06 (5.58)	21.00 (8.09)	.01
Difficult Child	30.59 (8.57)	27.82 (8.12)	.23
Psychiatric symptoms			
Global psychiatric distress (BSI; <i>T</i> -score)	62.35 (10.01)	55.94 (11.9)	-.41
Depression (BDI)	16.88 (9.26)	10.06 (7.39)	-.58
Mother-child interaction			
Maternal sensitivity	3.39 (.75)	3.41 (.72)	.02
Child involvement	3.28 (.87)	3.34 (.78)	.05
Dyadic reciprocity	3.28 (1.06)	3.27 (1.06)	-.01