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Parenting Interventions for Drug-Dependent Mothers and Their Young Children: The Case for an Attachment-Based Approach*

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Abstract

Maternal substance abuse is the most common factor involved when children come to the attention of the child welfare system. Although there is a clear need for clinical trials to evaluate parenting interventions for drug-dependent women, few studies to date have systematically examined the efficacy of interventions for this population. We first review six published reports of outpatient interventions that aimed to enhance the caregiving skills of substance-abusing mothers caring for children between birth and 5 years of age. After discussing implications of these preliminary studies, we then describe an attachment-based intervention that addresses these implications and has demonstrated preliminary feasibility in a pilot trial.

Keywords

attachment; drug abuse; parent-child relationships; parent education; parenting interventions

Maternal substance abuse, more than most other psychiatric or social problems (with the exception of poverty), is the most common factor involved when children are referred to the child welfare system because of suspected parental abuse or neglect (Child Welfare League of America, 1998; Department of Health and Human Services [DHHS], 1999). Observations of mother-child interactions involving mothers with histories of abuse and/or dependence on illicit drugs (e.g., heroin and cocaine) have indicated poor sensitivity, unresponsiveness to children's emotional cues, and heightened physical provocation and intrusiveness (Burns, Chethik, Burns, & Clark, 1997; Hans, Bernstein, Henson, 1999). Studies reporting drug-abusing mothers' views about parenting have indicated a lack of understanding about basic child development issues and ambivalent feelings about having and keeping children (Mayes & Truman, 2002; Murphy & Rosenbaum, 1999). It follows that there exists a strong need for interventions that target parenting deficits of parents who abuse and/or become dependent on illicit drugs.

Although prenatal exposure to illicit drugs, including heroin and cocaine, in utero may contribute to early delays in development, growing evidence suggests that the quality of care

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in the home environment during the first 5 years can also have a significant impact on children's developmental outcomes (see DHHS, 1999; Mayes & Truman, 2002). From birth to 5 years of age, a child's relationship with a primary caregiver is critical to the child's developing capacities for self-regulation, autonomy, and evolving expectations for relationships (Schonkoff & Phillips, 2000). The first 5 years of life therefore represent a window of opportunity during which therapeutic interventions with drug-abusing and -dependent parents are critical for promoting optimal child development (DHHS; Schonkoff & Phillips).

Cognitive and Relational Parenting Interventions

Parenting interventions for drug-abusing and -dependent parents have generally adopted cognitive behavioral and psychoeducational approaches, with the aim of improving child outcomes by replacing maladaptive parenting behaviors (e.g., harsh punishment) with adaptive ones (e.g., limit setting, use of time outs, rewards) that are thought to contribute to children's behavioral adjustment (Kumpfer, Alvarado, & Whiteside, 2003). These approaches are usually curriculum-based and provide opportunities for parents to learn and practice new parenting skills that are expected to increase their children's compliance and reduce their misbehavior (Ashery, Robertson, & Kumpfer, 1998). Because maternal drug abuse and dependence usually occur within the context of harmful psychosocial factors (e.g., poverty, unemployment, domestic violence, and family dysfunction), parent skills training is usually supplemented with case management services to assist mothers in receiving necessary services (DHHS, 1999).

An alternative approach to parenting intervention is a relational approach that emphasizes the emotional quality of the relationship between parent and child as the mechanism that promotes optimal child development. One example of a relational approach is derived from attachment theory, which emphasizes the importance of a parent's capacity to accurately perceive and sensitively respond to the emotional needs underlying children's behavior (Slade & Cohen, 1996). According to attachment theory, starting in infancy, humans develop mental representations of the caregiving relationship based on their early experiences. These mental representations of the caregiving relationship are thought to influence expectations and interactions in relationships, including parent-child relationships in the next generation (Bowlby, 1982). Attachment-based interventions therefore aim to foster (a) flexibility and emotional openness in mothers' mental representations of their children, (b) a greater capacity to make accurate inferences about their children's emotional needs, and (c) sensitive responses to children's emotional needs (Egeland, Weinfield, Bosquet, & Cheng, 2000). Critical components of attachment-based interventions for parents include fostering strong therapeutic relationships with parents, building awareness of automatic beliefs and feelings about parenting and children, and strengthening the parents' emotional attunement to the child. Without maternal attunement to children's emotional needs, parent skills training programs may increase at-risk parents' behavior management skills but not necessarily lead to improvement in emotional aspects of the parent-child relationship (Suchman, Mayes, Conti, Slade, & Rounsaville, 2004). Therefore, this approach may be of greater benefit to at-risk parents with histories of drug abuse and/or dependence. Attachment approaches to parenting intervention have been successfully adapted for use with at-risk parents (see Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003; Egeland et al.) and are currently being developed for drug-abusing parents (Pajulo, Suchman, Kalland, & Mayes, in press; Suchman et al., 2004).

Overview of Evaluated Parenting Programs

Despite the potential merits of both cognitive and relational approaches, very few early interventions targeting drug-abusing and -dependent women and their children have been systematically evaluated to date. Research in this area may be limited due to logistical problems of studying a clinical population that often engages in the chaotic and unstable lifestyle that

corresponds with the procuring of illicit drugs. Additionally, drug-dependent mothers may be, understandably, reluctant to engage in treatment with agencies that may report them to authorities for parenting malpractice (Murphy & Rosenbaum, 1999; Sterk, 1999).

Notwithstanding the small number of systematic evaluations, there is considerable value in reviewing parenting programs that have been evaluated to discern their preliminary feasibility and efficacy. Therefore, the first aim of this study was to review published evaluations of outpatient and home-visit parenting interventions conducted with drug-abusing and -dependent mothers. (Residential programs are reviewed in a separate report, see Pajulo et al., in press.) Specifically, our objective was to review the interventions in terms of their impact on drug abuse, maternal adjustment, parent-child interactions, and child outcomes.

Although drug abuse has been clinically distinguished from drug dependence, in that the latter term indicates the presence of psychological symptoms (e.g., cravings and preoccupation) and/or physiological symptoms (e.g., tolerance and withdrawal) of addiction, we use the term “drug abuse” to refer to problems of both drug abuse and dependence because the programs reviewed do not distinguish programmatically between drug abuse and dependence. Our review focused on programs for parents of young children from birth to 5 years of age, because early parenting interventions are most critical for promoting early child psychosocial development (DHHS, 1999; Schonkoff & Phillips, 2000).

Due to the limited number of randomized trials, we included studies that used quasi-experimental as well as experimental designs completed within the past 10 years. We chose not to restrict the sample size to allow for inclusion of relatively new and innovative approaches.

A search in PsychInfo yielded six studies that met these criteria. Four of the interventions adopted a primarily cognitive behavioral, psychoeducational, curriculum-driven approach. The *Systematic Training for Effective Parenting* (STEP) program (Dinkmeyer & McKay, 1976; Huebner, 2002) was a cognitive behavioral parenting skills training program adapted for women in drug treatment. The program provided skill-based instruction about parenting techniques (e.g., problem solving, anger management, communication, structuring a safe home environment) and child growth and development (e.g., developmental milestones occurring between birth and 3 years of age, individual differences and temperament and the natural consequences of different forms of discipline). The *Focus On Families Program for Parent in Methadone Maintenance* (FOF) (Catalano, Gainey, Fleming, Haggerty, & Johnson, 1999; Catalano, Haggerty, Gainey, & Hoppe, 1997) was a behavioral skills training program based on the *Strengthening the Families Project* curriculum (Kumpfer, 1998). FOF aimed to reduce risk for drug use in children by reducing parental drug abuse and improving parenting skills. A nurse home-visiting program intervention (Black, Nair, Knight, Wachtel, Roby, & Schuler, 1994) based on the *Carolina Curriculum for Handicapped Infants and Infants at Risk* (Johnson-Martin, Jens, & Attermeier, 1986) and *HELP at Home: Hawaii Early Learning Profile* (Parks, 1988) integrated a curriculum-based cognitive behavioral skill-building approach; psychoeducational sessions about child care, development and safety; and case management to foster better family interactions and support mothers in addressing their personal and family needs. Another home-based intervention based on the *Infant Health & Development Program* (IHDP, 1990) to promote infant development (Schuler, Nair, & Black, 2002; Schuler, Nair, Black, & Kettinger, 2000) involved modeling behavior and activities from the *Hawaii Early Learning Profile* (HELP) curriculum (Parks) and advocating for services in housing, public assistance, nutritional, domestic violence, and drug abuse treatment.

Two of the interventions adopted approaches emphasizing relationship quality (e.g., parent-child, therapist-mother). A multicomponent intervention for polydrug-using teen mothers and

their infants (Field et al., 1998) integrated drug abuse treatment, parenting classes, social rehabilitation, job counseling, and relaxation therapy. Mothers also spent 1 – 2 hr per day in a nursery designed to enrich their infant's development. The *Seattle Birth To Three Program* (Ernst, Grant, Streissguth, & Sampson, 1999; Grant, Ernst, & Streissguth, 1999) used a case management approach that emphasized the importance of positive relationships between mothers and interveners. Home visitors used a *Motivational Interviewing* (MI) (Miller & Rollnick, 1991) approach with the goal of helping motivate clients to engage in drug abuse treatment and access services that were relevant to their personal needs.

Table 1 summarizes key elements of the six parenting interventions evaluated in the literature including: theoretical approach, treatment format, study design, target population, sample, measures, and outcomes.

Implications of Program Evaluations for Future Intervention Development

The six parenting programs summarized in Table 1 aimed to reduce parental illicit drug use and improve parent-child interactions as a means of promoting children's development. We now discuss their relative success and explore possible implications for future intervention development.

Maternal Engagement in Treatment

Difficulty engaging mothers in treatment (a common problem in drug abuse treatment) was encountered in each of the programs. Even when mothers were engaged in treatment, maintaining a focus on the intended content of the intervention was often difficult. The Seattle Birth to Three program (Ernst et al., 1999), which emphasized therapeutic alliance and incorporated techniques of Motivational Enhancement (Miller & Rollnick, 1991) to improve treatment engagement, had notably higher rates of retention. This program's emphasis on fostering a therapeutic alliance early in treatment and on accepting and openly acknowledging maternal ambivalence toward change in illicit drug use and parenting responsibility may have contributed to better retention rates. Ethnographic studies of women drug abusers have often documented mothers' competing desires to meet society's demands to be "good" mothers, on the one hand, and to use illicit drugs to feel better, on the other (see Murphy & Rosenbaum, 1999; Taylor, 1993). A large percentage of women who become addicted to illicit drugs also have comorbid psychopathology (e.g., depression, PTSD, personality disorder) that makes tolerating conflicting emotions more difficult. Forming a therapeutic alliance in which the therapist accepts and encourages mothers' exploration of conflicting emotions related to abstinence and child rearing may therefore be a critical mechanism promoting retention in treatment.

Reduction in Maternal Drug Use

In three of the six programs, mothers receiving parenting interventions were more likely to have periods of abstinence from drug use than were mothers in control conditions. Even when control group mothers received standard drug abuse treatment and when drug abuse treatment was not a requirement of the parenting intervention, mothers receiving parenting interventions had better success in achieving abstinence. In addition to the interventions reviewed here, support for this hypothesis comes from the higher rates of abstinence among mothers enrolled in residential parenting programs (Moore & Finkelstein, 2001) and parenting programs that focus on rearing school-aged and adolescent children (Luthar & Suchman, 2000). These findings show that parenting interventions play an important role in the reduction of maternal drug abuse and other behaviors that are harmful to their children and families, as well as themselves.

Parent-Child Interactions and Child Developmental Outcomes

Although the interventions were generally effective in influencing maternal adjustment (e.g., depression, parenting stress, potential for child abuse) and/or maternal substance abuse, with the exception of the multicomponent intervention reported by Field et al. (1998), they were not successful in fostering measurable improvement in mother-child interactions or promoting child development. The intervention for mothers reported by Field et al. was the sole intervention associated with marked and sustained improvement in mother-child interactions and child development. Although one cannot know for certain which aspects of this intervention account for its efficacy, several unique components are worth noting. First, the intervention placed a strong emphasis on improving harmony (reciprocal calm states) and contingency in the mother-infant dyad. Mother-infant interactions were observed 2 hr per day in an enriched nursery environment. Mothers were specifically coached to acknowledge and respond to their infants' emotional distress in ways that helped the infants return to regulated and calm states. Unlike other curriculum-driven interventions, this approach was centered on recognizing infant cues and coaching mothers to respond contingently. Mutual regulatory processes in the mother-child dyad may therefore be critical mechanisms to target in parenting interventions for drug-abusing mothers. Second, rather than relying on more global assessments of interaction quality (e.g., Nursing Child Assessment Teaching Scale [NCAST], Home Observation Measurement of the Environment [HOME], Bayley's Scales), Field et al. measured specific behavioral correlates of targeted outcomes (e.g., maternal and infant contingent responsiveness, direction of gaze, and level of infant stress or regulation). By clearly operationalizing targeted mechanisms of change, Field et al. may have increased their measurement precision and reduced the likelihood of Type II errors.

The Need for Comprehensive Services

Several authors noted that many ongoing problems (e.g., comorbid psychiatric disorders, relapse to drug use, financial and housing crises,) warranted more intensive and comprehensive treatment approaches (Black et al., 1994; Huebner, 2002; Schuler et al., 2002). The common occurrence of comorbid psychiatric disorders, in particular, highlights the necessity for psychiatric diagnostic services and legal medication. The complex interrelations among ongoing risks associated with maternal drug abuse and poverty warrant further attention in intervention research.

Emotional Regulation as a Point of Intervention

The majority of the programs conceived of maladaptive parenting as an absence of appropriate child behavior management skills, knowledge about child development, and access to services. These areas of deficit were, respectively, addressed using cognitive behavioral, psychoeducational, and case management intervention strategies. Although improvements in maternal adjustment were evident, only one program (Field et al., 1998) led to improvements in mother-child interactions; this intervention focused more strongly on reciprocity and mutual regulation in the mother-child relationship. Maladaptive parenting among drug-abusing women may therefore be a function of problems achieving mutual regulation and contingency in the mother-child dyad in addition to problems managing children's misbehavior.

During early childhood, when children rely primarily on their parents for assistance with emotional regulation and gradually learn to regulate emotions and behavior, parents must be particularly attuned to children's emotional states in order to assist them with managing uncertainty and stress (Bowlby, 1982). A weakness of the majority of approaches that have been tried to date may be that they do not focus on improving the mother's capacity to sensitively respond to children's emotional distress. Cognitive behavioral conceptions of parenting interventions may not sufficiently take into account the central function of the mother-child relationship in children's developing capacities for emotional regulation.

For drug-abusing mothers in particular, emotional regulation is problematic as evidenced by their frequent use of illicit drugs as a form of self-medication in the presence of emotional distress (Khantzian, 1997). Parenting interventions may need to be conceived with a focus on assisting mothers to enhance their own affect regulation first, before they can effectively assist their children with affect regulation. Although none of the programs previously described specifically targeted maternal affect regulation, the more promising findings of the Seattle Birth to Three programs (Ernst et al., 1999), which strongly emphasized the therapeutic alliance and acceptance of maternal ambivalence, may indicate that acknowledging and supporting the mother's affective experience (particularly seldom-acknowledged painful or negative affect) may not only help the mothers stay engaged in treatment but also assist them in promoting their children's emotional development.

Relational models of parenting interventions—and attachment models in particular—may provide a more useful conceptualization for treating maladaptive parenting relationships in which maternal drug abuse is a factor. Specifically, a strong emphasis on the mother's role in making accurate inferences about affective states—her own and her child's—may serve as a better foundation upon which to build programs that aim to improve the quality of emotional relationship between mother and child that ultimately support children's emotional development. Below, we describe an innovative parenting program currently being developed for mothers in drug abuse treatment that incorporates each of these elements.

The Mothers and Toddlers Program

Theoretical Overview

The Mothers and Toddlers Program (MTP) is an individual therapy intervention currently being developed by the authors for mothers in outpatient drug abuse treatment caring for children 18 – 36 months of age. Conceptually, the program is based on psychosocial and neurobiological mechanisms of attachment and addiction. Originating with the ideas of John Bowlby (1982), attachment theory stresses the importance of the primary caregiver's sensitivity to children's behavioral cues signaling emotional distress, particularly during infant and toddler years (for an overview of attachment research, see Karen, 1994). Attachment research during the past 30 years has generally shown that children whose caregivers accurately perceived and sensitively responded to their emotional cues during early caregiving years have been more likely to express their emotional distress directly to the caregiver and to develop greater capacities for self-regulation in response to stress. This self-regulatory capacity is thought to serve as a protective factor promoting social competence and reducing risk for behavior problems during school age and adolescent years (Sroufe, Carlson, Levy, & Egeland, 1999). Children reared by sensitive caregivers are generally thought to develop representations of the caregiving relationship that are balanced in terms of positive and negative affect, whereas, children reared by insensitive caregivers are thought more likely to develop mental representations characterized by denial or distortion of painful negative affect (Slade & Cohen, 1996).

In observations of drug-abusing mothers and children, mothers have shown difficulties accurately perceiving and sensitively responding to their children's signals of emotional distress (Mayes & Truman, 2002). Attachment theorists commonly view these parental misconceptions of children's emotional distress as a function of parents' own distorted or denied affect related to their own early experience (Suchman et al., 2004). According to attachment theory, in order for a mother to accurately perceive her child's cues, she must first have developed the capacity to recognize her own denied or distorted affect about her child and their relationship. Otherwise, the mother is thought more likely to misattribute affective states to herself and her child and respond noncontingently or insensitively. For example, a mother who is unable to recognize her child's fear of separation is thought more likely to fail to reassure her child, before departing, that she will return. Likewise, a mother who does not

recognize her own feelings of loneliness is thought likely to misattribute them to her child and be overly intrusive. Similarly, a mother who does not recognize her own fears for safety is expected to respond with overprotection to her child's natural bids for independence.

The intergenerational transmission of representations characterized by denial or distortion is thought to be mediated by a caregiver's inability to recognize the intentionality underlying his or her child's behavior or "reflective functioning" (Fonagy, Gergely, Jurist, & Target, 2002; Fonagy & Target, 1997). For example, a mother who denies or distorts her own or her child's painful experiences is thought likely to have difficulty recognizing the mental states that underlie her child's behavior. Instead, the mother is expected to misattribute the behavior to inaccurate perceptions (i.e., distortions) of mental states or to attribute the child's behavior to global personality characteristics or external factors (i.e., denial of mental states). Without the capacity to recognize mental states that underlie a child's behavior, a mother is expected to have difficulty making sense of and responding effectively to her child's behavior. In turn, the child is thought more likely to develop a limited understanding of his/her own mental states that may transmit patterns of distorted or denied intentionality to the next generation.

Maternal reflective functioning has been empirically linked with sensitive parenting behavior in at-risk parents (Fonagy et al., 2002; Fonagy & Target, 1997). The absence of maternal reflective functioning has been linked with maladaptive parenting behavior (e.g., withdrawal, hostility, intrusiveness) and with young children's limited ability to express emotional distress directly (Grienenberger & Slade, 2004; Slade, Grienenberger, Bernbach, Levy, & Locker, 2001). Maternal reflective functioning has also been found to mediate associations between maternal cocaine use and psychosocial capacities (e.g., attention, social skills, and withdrawal) of young children (Levy & Truman, 2002).

The Role of Drug Abuse in the Attachment System

Drug abuse has been conceived by Khantzian (1997) as an attempt to self-medicate in the presence of painful or difficult affect that has not otherwise been psychologically contained or regulated. In other words, drug abuse has been understood as an effort to compensate for deficits in emotional regulation. Therefore, it is possible that, as a mother's capacity to contain and regulate her own and her child's painful affect increases, her desire to return to drug use as a source of emotional comfort may also diminish (Khantzian).

Many abused substances (e.g., cocaine, heroin) have been shown to affect the dopaminergic pathways in the brain, areas that are associated with initiation of behavior, hedonic reward and motivation (Koob, 1996; Koob & LeMoal, 1997). These central dopaminergic pathways are also thought to be critically involved in an adult's capacity to invest in the care of their children (Edelman & Tononi, 1995). Drug abuse has therefore been viewed as a co-optation or hijacking of this endogenous value system (Leckman & Mayes, 1998). As a consequence, once this system is co-opted by repeated drug use, competing investments in craving the drug versus caring for the infant may reduce the caregiver's capacity to invest in caring for the infant. Conversely, as a caregiver's desire to invest in his/her child is enhanced, a concomitant decrease in the reward derived from drug use may also occur. New treatment models that help parents invest in their children, rather than substances, may therefore "reset" the focus of the reward system (Pajulo et al., in press; Suchman et al., 2004). Specifically, they may help facilitate and enhance the parent's satisfaction with positive interaction experiences with his/her child, leading the parent, in turn, to become less focused on the relationship with, and craving for the drug, and more focused on and invested in caring for the child.

Theoretical Mechanisms of Change

Based on the preceding attachment theoretical framework, the MTP intervention aims to “undo” affective distortion and/or denial at the representational level and improve a caregiver’s understanding of children’s intentionality. These improvements at the metacognitive level are, in turn, expected to lead to an increase in mothers’ sensitivity to toddlers’ emotional cues. In turn, better caregiver sensitivity is expected to lead to toddlers’ increased open expression of emotional bids for comfort and development of the capacity for self-regulation: A capacity that is essential for optimal psychosocial development.

As mothers’ capacity to make reasonable inferences about their toddlers’ emotional states increases, and as mothers’ distorted attributions of their children decrease, the mothers are expected to develop a mental model of their children’s behavior as driven by intentional states (e.g., thoughts, wishes, emotions) within a developmental context (e.g., reasonable expectations depending on the child’s age). Mothers’ evolving mental models of their toddlers’ behavior are expected to assist the mothers in responding with increasing accuracy, sensitivity and flexibility to their children’s emotional cues. As mothers become more sensitive to their children’s cues, their children, in turn, are expected to increase their open emotional bids to their mothers, using the mothers as “safe havens” to assist in their return to an emotionally regulated state.

Maternal desire for illicit drugs and investment in the child are also conceived as competing elements in the same reinforcement system. Over time, as mothers’ investment in their children and the caregiving relationship increases in response to the MTP intervention, maternal desire for illicit drugs is expected to decrease. Because synchronous interactions can be highly gratifying to both mothers and children, as synchronicity increases, the mothers’ investment in their children is expected to increase, and mothers’ cravings for drugs are expected to diminish. Decreased maternal cravings are also expected to coincide with the improvement in abstinence from illicit drug use (Bevins & Bardo, 2004).

As the mothers’ investment in children’s well-being increases, mothers are also expected to more actively pursue and be receptive to developmental guidance about their children and the caregiving relationship. Consistent with a Harm Reduction perspective (Denning, 2000), the MTP intervention’s focus on increasing maternal investment in the child is also expected to play an important role in the reduction of behaviors associated with drug abuse that are harmful to the child, the mother, and their family. This process of replacing maternal desire for illicit drugs with investment in the child is viewed as a gradual process that takes place as the caregiver moves through several intervention phases.

The MTP Intervention

The primary goals of MTP have been to assist drug-abusing mothers in (a) developing more balanced mental representations of their children and the caregiving relationship, (b) developing greater capacities to make accurate inferences about their own and their children’s intentional states (e.g., thoughts, wishes, feelings), and (c) understanding their children’s intentions and behaviors within a developmental context. We expect that improvement in these three maternal domains will lead to an increase in maternal sensitivity to children’s emotional cues, increased expression of open bids for comfort by the child to the mother, and increased abstinence from illicit drug use.

Mothers who have entered treatment for cocaine, heroin, marijuana, and/or alcohol abuse or dependence and who do not have significant cognitive impairment or psychiatric instability are eligible to enroll in MTP. Mothers have typically enrolled for up to 20 weeks during which they meet weekly with a therapist on-site at the drug treatment clinic. The MTP intervention

has been conducted in conjunction with drug abuse treatment so that mothers can simultaneously acquire a better understanding of drug addiction and skills to prevent future relapses. MTP has been conducted on-site at the outpatient drug abuse treatment clinic where mothers have had direct and immediate access to support for a wide range of psychiatric, pragmatic, and social concerns. Services have included motivation-based group or individual therapy for drug abuse, group and individual therapy for trauma, assessment of psychiatric disorders and prescription of legal psychotropic medications by a psychiatrist who specializes in substance abuse, case management and advocacy for legal, housing, financial, and vocational needs, and physician care for medical needs.

MTP pilot study—A pilot trial of the MTP was recently completed in New Haven, Connecticut, at an outpatient drug abuse treatment program for women. The intervention was conducted by the principal author, N.S., and two M.S.W. therapists who were trained by N.S. Over 17 months, 25 mothers referred by their primary clinicians were enrolled in the MTP. Demographically, the majority of women in the study were in their mid-30's, Caucasian or African American, single, high school educated, unemployed, caring for two children, and reporting cocaine as their primary drug problem.

The aims of the pilot study were (a) to determine the feasibility of conducting the program on site at the drug clinic, (b) collect preliminary data on maternal reflective functioning, and (c) develop a description of the therapeutic approach illustrated by vignettes from actual sessions. The procedures and results for objectives (a) and (b) are reported elsewhere (see Suchman, Altomare, Moller, Slade, & Mayes, 2003; Suchman et al., 2004).

Methodological process for describing therapeutic approach—Each therapy session conducted as part of the pilot trial was videotaped for training and supervision purposes. Mothers' consent to videotape was obtained prior to enrollment. As is commonly done in reports of newly piloted clinical interventions, a subset of sessions was used to develop clinical vignettes illustrating the therapeutic approach (see Barrows, 1999; Marvin, Cooper, Hoffman, & Powell, 2002; Reynolds, 2003; von Klitzing, 2003). Nine sessions covering a wide range of attachment themes (e.g., recognizing children's emotional cues, identifying distortions in maternal representations, managing separations and reunions) at each stage of treatment (e.g., early sessions focusing on therapeutic alliance, later sessions focusing on affect recognition and developmental guidance) were also transcribed. Permission was obtained from participants to include direct quotations and anecdotes from therapy sessions with assurances that individual privacy would be protected by changing names and identifying information. What follows is the intervention description and illustrative vignettes.

Reinforcing maternal investment—The intervention generally began with a focus on the strengths of the emotional relationship that was already present between the mother and her child. Mother-toddler pairs were invited to participate in videotaped play sessions, some of which were structured (e.g., mother is asked to teach her child a new skill, mother and child together explore novel toys) and some of which involved free play in a developmentally appropriate playroom. The mothers and therapists met weekly to review videotaped segments of the play sessions that were cued ahead of time by the therapists to interactions in which the mothers appeared to be most in sync with and sensitive to their children's cues. The therapists asked the mothers to focus on these "shining moments" and encouraged them to elaborate on their feelings and, with the therapists' help, draw accurate inferences about their children's mental states. During these moments, the therapists also emphasized the importance of the mothers to their children and the children to their mothers. By expanding on the pleasure and gratification that mothers and children derived from each other during these moments, the therapists supported the mothers' investment in their relationships and commitment to their children.

For example, during a fourth session of the pilot trial, the therapist (N.S.) invited a mother of a 15-month-old girl to bring her daughter with her for the first half hour. The therapy room contained age-appropriate toys and the mother was instructed to choose a toy and play with her child as she ordinarily would at home. The therapist sat close by on the floor and joined in the play session. For most of the session, the child sat contentedly on her mother's lap as the mother taught her to place colored rings of various sizes on a wooden dowel. The mother was genuinely enthusiastic, first demonstrating the task with the child sitting on her lap facing her, and then prompting her child to try. The mother and daughter took turns, and the mother clapped and cheered each time her daughter succeeded bringing an immediate smile and expression of delight to her daughter's face as she clapped and cheered, in turn. The daughter remained engaged in the task for a considerable time (approximately 20 min). Later, when the mother viewed the tape with the therapist, the mother commented on how surprised she was to see "how much was going on" between her daughter and herself. She had "never even thought about" the ways that she positively influences her daughter and had always thought of her daughter as having a "short attention span" and of herself as having "little patience" for her daughter. The therapist also noted how secure, relaxed, content, and engaged the child seemed to be with the mother, and how responsive the child was to the mother's warmth, encouragement, and demonstrations. Noticing the mutual enjoyment and harmony between her daughter and herself reinforced the mother's sense of herself as important to her child's development and well-being.

Therapeutic alliance—Early in the intervention, the therapists focused on building a therapeutic alliance that would allow the mothers to explore their own and their children's affective experiences in the caregiving relationship. The alliance was fostered through the therapists' efforts to understand the mothers' feelings and concerns about their children and parenting, even if they seemed somewhat aberrant. Although providing assistance with concrete tasks (e.g., completing paperwork for public assistance) or advice about parenting (e.g., how to discipline children) may be of little therapeutic benefit to the mothers at this early stage of treatment, therapists sometimes joined the mothers in problem-solving immediate situations in early sessions in the service of strengthening the therapeutic alliance (e.g., helping her to locate community services, contact a Department of Children and Families (DCF) worker, find child care, or complete a job application). The therapists were also careful to be clear about the limits of the therapeutic relationship (e.g., the therapist's role as a mandated reporter of child abuse and neglect, the limits of therapist availability to mothers during the week).

Making inferences about maternal affective states—As the therapeutic alliances developed, the mothers and therapists continued to review moments of interaction in the mother-child dyad that appeared to be more difficult and stressful to mothers and children. They viewed segments of videotaped play sessions together during which the mothers appeared to be less in sync with their children's cues. They also focused on stressful interactions that occurred during the week and were recounted by mothers during the therapy sessions. The therapists supported the mothers in developing awareness of their own affect toward the child and its true source (e.g., affect toward another adult or relative that was displaced on to the child, affect related to the mother's own experiences of trauma and loss). The therapists also supported mothers in recognizing the impact of displaced or distorted affect on their children.

For example, a mother was telling her therapist early in the program about how worried she was to find out that her 5-year-old son was the only child in the clinic day care room that day. She was beside herself with worry for his safety and was concerned that he might be snatched up and kidnapped by an intruder entering the clinic. Her anxiety led her to scold the child for staying in the room alone and to threaten the day care worker. During the therapy session when the mother was recounting the incident, the therapist asked her if anything like this had ever

happened to her as a child. The mother acknowledged that she had been a victim of sexual molestation at about the same age. The therapist acknowledged her deepest regret that this had happened to the mother and then encouraged her to think about aspects of her concern for her child that were more related to her own trauma than what her child was likely experiencing in the playroom. By continuing to explore such instances that are most emotionally distressful to the mother, teasing apart aspects of the mother's affect that are distorted from those that are realistically attuned to the child and the situation, the therapist assists the mother to recognize and regulate her own distress and replace distorted emotions toward the child with more balanced emotions relevant to the child and situation. This process assists the mother in attending to her own inner experiences, coping with her own difficult emotions when needed, and responding more accurately and sensitively to her child's needs.

Making inferences about children's intentional states—The therapists also encouraged the mother to focus on their children's affective experiences and make inferences about what their children might be thinking and feeling in different situations drawn from play sessions or the mothers' experiences with children at home. Specifically, the therapists encouraged mothers to be curious and wonder aloud about their children's thoughts, wishes, and feelings underlying their behaviors, particularly during stressful interactions. As needed, the therapists provided timely developmental guidance to mothers about their children's cues, developing capacities, emotional needs, and ways the mothers could support these growing capacities through interactions with their children. The therapists also explored with the mothers moments when they were misreading their children's cues and helped them identify distortions or denial of certain aspects of their children's experience.

Early in the pilot trial, for example, a mother of an active 2-year old was describing her child's excitement and activities during a cookie baking session to the therapist. "He had the flour and the spoon and he was just making a big old mess. There was flour everywhere!" Although the mother seemed to want to convey to the therapist her own exuberance about this moment, there was also clear disappointment and exasperation in her tone. After the therapist noted the disappointment, the mother continued to elaborate on her own feelings of frustration that her son was not yet able to meet her expectations for tidiness. The therapist's effort first focused on accepting, empathizing with, and thus containing the mother's feelings of aggravation. When the mother appeared calm again, she and the therapist together explored inferences about the child's experience, such as how intensely involved the child was in the activity, how the child would not be focused on the same concerns for tidiness as the mother at his age, and how important the mother was to her child as a play mate in that moment.

Through repeated exploration of instances that are most stressful to the mother, the therapist and mother tease apart the mother's and the child's own mental and emotional experiences. Together we examined the mother's potential misattributions of the child's emotions and intentions, and gradually worked to support the development of a more balanced, coherent, and realistic representation of the child.

Timely developmental guidance—As mothers appeared to become increasingly invested in and curious about their children's development and asked for more developmental guidance, the therapists assisted the mothers in understanding their children's evolving needs and capacities. The therapists also encouraged mothers to make inferences about their children's developmental tasks, about emotional states driving their children's "misbehaviors," and offered concrete information about what the mothers can expect from their children as they grow older. Metaphors of children as "scientists" who are "very curious about the physical and social world around them" were often used. Also used were the metaphors of the mothers as "secure bases" or "safe harbors" where the children could return for emotional "refueling" and then leave with confidence and calmness to explore new toys, activities, and

people. This positive reframe of children's behavior that often can be experienced as annoying or naughty by their mothers (e.g., pulling the cat's tail, repeatedly opening and closing doors) seemed to help place the children and their interactions in a more understandable, developmental context as well as a more positive light.

Stage I therapy development study—We are currently developing a therapy manual that will be used in a randomized clinical trial with 60 mothers to test the efficacy of MTP in comparison with behavioral parent skills training. We are assessing three primary outcomes directly targeted by the new intervention at Weeks 1, 12, and 20. We are using the Working Model of the Child Interview (WMCI) (Zeanah & Benoit, 1993) to assess change in distortion and denial in maternal mental representations of the child, the Parental Development Interview (PDI) (Slade, Aber, Berger, Bresgi, & Kaplan, 2002) to assess change in maternal reflective functioning (i.e., capacity to recognize intentional states underlying behavior), and the Knowledge of Infant Development Interview—Toddler Version (KIDI) (MacPhee, 2002) to assess change in mothers' knowledge of child development. Indirectly targeted change at the behavioral level is also being assessed at Weeks 1, 12, and 20. The NCAST (Barnard & Eyres, 1979) is being used to assess change in maternal sensitivity to children's emotional cues. A novel situation paradigm is being used to assess change in the child's bids for comfort in uncertain circumstances (Mayes, Carter & Stubbe, 1993). In this novel event, children explore a box of novel toys with their mothers. Indirectly targeted change in maternal drug abuse, psychiatric distress, attendance in drug abuse treatment, and use of ancillary services outside the clinic will also be assessed.

Conclusions

Cognitive behavioral parent skills training and advocacy programs have not yet demonstrated measurable improvement in quality of mother-child interactions or children's developmental outcomes in families affected by maternal drug abuse. Among the intervention approaches reviewed here, programs that demonstrated the most promise focused on improving the quality of relationship between mother and child or between mother and therapist. We believe that there is value in further exploring relational approaches to parenting interventions for drug-abusing women and their young children, particularly interventions that target change at the representational as well as behavioral levels. Conceiving of parenting and child development as an intentional process that occurs "from the inside out" allows interventionists to focus on emotional aspects of caregiving relationships that are critical to sustained improvements in children's long-term psychosocial development. The intervention we propose here aims to (a) shift maternal representations of their children and the caregiving relationship toward greater balance and (b) strengthen mothers' capacity to recognize a broader range of their own emotional states and their children's emotional needs during stressful interactions. We expect that changes at the representational and metacognitive levels of functioning, in conjunction with timely developmental guidance, provided in a clinic setting where comprehensive services are available, will lead to improvements in the quality of the mother-child relationship that will, in turn, support children's psychosocial development in the short and long term.

This approach is not without its limitations. Clinicians must be carefully trained and supervised to implement the intervention. Specifically, clinicians must be aware that overwhelming affect can serve as a trigger for relapse to drug abuse and/or withdrawal from treatment. The counselors for the drug abuse treatment program also need to understand and support a therapeutic approach, which may differ from standard approaches to drug abuse treatment, that involve more confrontation. The MTP is particularly well suited to clinical programs that adopt Motivational Interviewing as the primary treatment approach. Objectives must be carefully explained to clients in terms that are relevant to their own experiences and motivations as parents. It is imperative that the intervention be conducted on site at a clinic where

comprehensive services (e.g., drug abuse treatment, medical and psychiatric care, public assistance, day care, housing, and vocational counseling) are available. Clinicians must work as part of a well-coordinated team that closely monitors mothers' and children's progress. The intervention does not currently involve partners or relatives caring for the child. We are currently examining ways to incorporate other adults into the treatment program. Finally, sustained efforts to intervene with a highly vulnerable population often lead to frustration, hopelessness, and burnout among the clinic staff. Supportive supervision, ongoing training, and sufficient personal time for other rejuvenating activities are essential to preventing negativity and hopelessness in the therapeutic milieu or the enactment of negative countertransference toward the clients. Limitations notwithstanding, we believe this approach holds promise for addressing problems in mother-child relations and children's development in a population where these issues are often viewed as intractable.

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Table 1

Overview of Parenting Interventions for Drug Using Mothers

Program Name	Theoretical Approach	Treatment Format	Study Design	Target Population	Sample	Outcome Measures and Results		
						Parent	Parent-Child	Child
1. Systematic Training for Effective Parenting (STEP; Huebner, 2002).	Cognitive behavioral skill building.	Weekly 2-hr group sessions conducted at pediatric clinic for 8-week duration; concurrent drug treatment.	Nonrandom assignment to three intervention groups (one drug treatment and two nondrug treatment).	Parents at risk for child maltreatment due to poverty, low social support, poor education, substance abuse, and/or domestic violence with children from birth to 36 months of age.	200 parents (57 in drug treatment) recruited from inner-city pediatric clinics for low-income families; <i>M</i> age = 28 years; 95% female; 89% single; 35% Caucasian, 32% African American; <i>M</i> education = 12 years.	<p><i>Attendance:</i> Mothers in the drug-treatment group attended at least 38% of the sessions.</p> <p><i>Drug use:</i> Serious problems reported during and after intervention.</p> <p><i>Parental adjustment:</i> Parenting Stress Inventory (Abidin, 1995); At 8 weeks postenrollment, mothers in drug-treatment group reported lower levels of parental distress.</p>	<p><i>Maternal sensitivity:</i> Nursing Child Assessment Teaching Scale (NCAST; Barnard, 1978); At 8 weeks postenrollment, mothers in drug-treatment group showed no improvement in maternal sensitivity to child cues, but their children were more expressive with cues and more responsive to mothers. Home Observation Measurement of the Environment (HOME; Caldwell & Bradley, 1978); No improvement in maternal avoidance of punishment or opportunities for stimulation.</p>	
2. Focus on Families (FOF; Catalano et al., 1997, 1999).	Behavioral parent skills training; home-based case management to reinforce parenting skills; dual focus on addiction and parenting.	32 parent skills group sessions conducted or 16 weeks; 0 – 5 hr per week of home-based case management for 9 months; methadone maintenance concurrent.	Random assignment to FOF + methadone treatment versus methadone treatment alone.	Parents enrolled in methadone maintenance with children 3 – 14 years of age.	144 parents recruited from two methadone maintenance clinics; <i>M</i> age = 35 years; 75% female; 80% single; 77% Caucasian; 78% high school educated; 66% unemployed.	<p><i>Attendance:</i> 50% of FOF parents attended half of the parenting groups, and 75% attended a third of the case management sessions.</p> <p><i>Drug use:</i> At 6 months postenrollment, no group differences in parent reports of family bonding, conflict, or meetings, and FOF children reported that parents were less involved. At 12 months postenrollment, FOF parents reported more household rule initiation; no group differences in parents' reports of family bonding, conflict, or meetings or children's reports of family relations.</p>	<p><i>Family relations:</i> At 6 months postenrollment, no group differences in parent reports of family bonding, conflict, or meetings, and FOF children reported that parents were less involved. At 12 months postenrollment, FOF parents reported more household rule initiation; no group differences in parents' reports of family bonding, conflict, or meetings or children's reports of family relations.</p>	Child outcomes not assessed for children younger than 6 years of age.

Outcome Measures and Results

Program Name	Theoretical Approach	Treatment Format	Study Design	Target Population	Sample	Parent	Parent-Child	Child
3. Home-based intervention using the Carolina Preschool Curriculum and Hawaii Early Learning Program (Black et al., 1994).	Case management for personal needs; cognitive behavioral parent skills training; psychoeducation about child development; drug treatment encouraged, not required.	2 weekly home visits from pregnancy to 18 months postpartum. Drug treatment encouraged.	Random assignment to home-visit intervention versus no intervention control group.	Pregnant women with histories of prenatal cocaine and/or heroin use	60 women recruited from hospital prenatal clinics in metropolitan teaching hospital; <i>M</i> age = 26 years; 97% single; 89% African American; <i>M</i> education = 11 years; 72% retention in study.	<i>Attendance</i> : Intervention attendance not reported. No group differences in compliance with primary care. <i>Drug use</i> : At 18 months postpartum, no group differences; 57% of total sample continued drug use. <i>Parental adjustment</i> : Parenting Stress Index (Abidin, 1990): At 3 months postpartum, intervention and control groups report elevated stress. Child Abuse Potential Inventory (CAPI; Milner, 1986): At 18 months postpartum, intervention group total scores did not differ from normative scores reported by Milner and control group scores were higher than normative scores. Intervention group had significantly elevated scores on two of six subscales and control group had significantly elevated scores on six of six subscales.	HOME Scales (Caldwell & Bradley, 1979): Intervention group scored higher on two of six subscales, (maternal emotional and verbal responsibility and opportunity for variety in daily stimulation).	Bayley Infant Development Scales (Bayley, 1969): No group differences at 6, 12, and 18 months postpartum.
4. Home-based intervention using Infant Health and Development Program (Schuler et al., 2000, 2002).	Case management and empowerment for personal needs; psychoeducation about interactions with child.	2 weekly home visits in first year postpartum; parent skills group and child attendance at development center in second year postpartum. Drug treatment encouraged	Random assignment to home-visit intervention versus tracking-visit control group.	Mothers with histories of prenatal cocaine and/or heroin use caring for newborn infants.	127 women with cocaine or heroin use recruited from inner-city university hospital; <i>M</i> age = 27; 94% single; <i>M</i> education = 11 years. 98% unemployed 95% African American. 126 polydrug-using adolescent mothers recruited from a vocational high	<i>Attendance</i> : 66% attended 1–60% of visits. <i>Drug use</i> : At 6 months postpartum, no group differences; 46% of total sample continued drug use. At 18 months postpartum, no group differences; 43% continued drug use. <i>Parental adjustment</i> : Child Abuse Potential Inventory (CAPI; Milner, 1986). <i>Attendance</i> : Not reported. <i>Drug use and repeated pregnancies</i> : Lower rates for drug-treatment	Mother-infant feeding interaction ratings (Cowan & Cowan, 1992; Hutcheson et al., 1997): No group differences at 6 or 18 months postpartum.	Not assessed.
5. Multicomponent intervention for teen mothers and their infants	Psychoeducational and cognitive behavioral approach for addiction and social rehabilitation; developmental	Mothers attended vocational high school in morning; 4-h daily intervention based on site at high	Nonrandom assignment. Mothers with no drug use history were assigned to	Polydrug-using adolescent mothers who used illicit drugs (cocaine, opiates, or			Feeding and Play Interactions (Field, 1980): At 3 months postpartum, drug-treatment and nondrug-control	<i>Infant stress</i> : Salivary cortisol levels: At 3 months postpartum, infant cortisol

Outcome Measures and Results

Program Name	Theoretical Approach	Treatment Format	Study Design	Target Population	Sample	Parent	Parent-Child	Child
(Field et al., 1998).	guidance about child milestones; interaction coaching with mother-child dyad.	school with nursery designed for multilevel infant enrichment for 4 months. Drug treatment concurrent.	non-drug user control group; mothers with drug use history were assigned to intervention group or drug-user control group.	marijuana) during pregnancy.	school; <i>M</i> age = 18 years; 64% African American; <i>M</i> education = 10 years; <i>M</i> Hollingshead <i>SES</i> = 4.4	group than drug-control group. <i>Parental adjustment</i> : Beck Depression Inventory (BDI); Beck, Ward, Mendelson, Mach, & Erbaugh, 1961); At 3 months postpartum, drug-treatment and drug-control groups scored higher than nondrug-control group. At 6 months postpartum, drug-treatment and nondrug-control groups had similar scores. At 12 months postpartum, drug-treatment group score lower than drug-control group score. <i>Maternal stress indicated by salivary cortisol levels</i> : At 3 months postpartum, cortisol levels for mothers in drug treatment and nondrug groups were lower than levels for drug-control group. At 6 months postpartum, levels for drug treatment and nondrug-control groups were lower than drug-control group levels.	groups had higher ratings than drug-control group. At 6 months postpartum, drug-treatment group scores similar to nondrug-control group scores.	levels for drug-treatment and nondrug group were lower than drug-control group levels. At 6 months postpartum, infant cortisol levels for drug-treatment and nondrug groups were lower than drug-control group levels. Early Social Communication Scales (Seibert & Hogan, 1982; Seibert, Hogan, & Mundy, 1987) At 12 months, infants in drug-treatment group scored higher than infants in drug-control group. Bayley Infant Development Scales (Bayley, 1969): At 12 months, infants in drug-treatment group had better scores on Mental Health Scale than infants in drug-control group but lower scores than infants in nondrug-control group. Bayley Infant Development Scales (Bayley, 1969): At 36 months, both groups below clinical norms.
6. Seattle Birth to Three Program (Ernst et al., 1999).	Case management stressing therapeutic alliance; Motivational interviewing to promote treatment engagement.	1 home visit per week from birth to 6 weeks, 2 home visits per week from 6 weeks to 36 months. Drug	Random assignment to home-visit versus tracking-visit control group.	Mothers with heavy alcohol and drug use during pregnancy.	65 mothers identified at 1 month pre- to 1 month postpartum; <i>M</i> age = 27 years; 77% single; <i>M</i>	<i>Attendance</i> : 38% attended 32/36 months; 51% attended 9 – 31/36 months. <i>Drug use</i> : At 32 months, mothers receiving home visits were more likely to	Not assessed.	

Outcome Measures and Results							
Program Name	Theoretical Approach	Treatment Format	Study Design	Target Population	Sample	Parent-Child	
		treatment encouraged.			education = 11 years; 48% African American; 29% Caucasian	<p>Parent</p> be enrolled in drug treatment and to have longer periods of abstinence than control group mothers.	<p>Child</p> Health care: At 36 months, children in both groups had adequate care.