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## Review of Interventions to Improve Family Engagement and Retention in Parent and Child Mental Health Programs

**Erin M. Ingoldsby**

Prevention Research Center for Family and Child Health, Department of Pediatrics, University of Colorado Denver, Mail Stop #8410, 13121 E. 17th Ave., Room 5303, Aurora, CO 80045, USA

Erin M. Ingoldsby: erin.ingoldsby@ucdenver.edu

### Abstract

Engaging and retaining families in mental health prevention and intervention programs is critically important to insure maximum public health impact. We evaluated randomized-controlled trials testing methods to improve family engagement and retention in child mental health programs published since 1980 ( $N = 17$ ). Brief, intensive engagement interventions in which providers explicitly addressed families' practical (e.g. schedules, transportation) and psychological (e.g. family members' resistance, beliefs about the treatment process) barriers as they entered treatment were effective in improving engagement in early sessions. The few interventions found to produce long-term impact on engagement and retention integrated motivational interviewing, family systems, and enhanced family stress and coping support strategies at multiple points throughout treatment. Few interventions have been tested in the context of prevention programs. There are promising approaches to increasing engagement and retention; they should be replicated and used as a foundation for future research in this area.

### Keywords

Engagement intervention; Retention intervention; Treatment engagement; Barriers to treatment; Attrition

### Introduction

Low family engagement and retention are significant problems for mental health prevention and intervention programs. Anywhere from 20 to 80% of families drop out prematurely, with many receiving less than half of the prescribed intervention (Armbruster and Kazdin 1994; Gomby 2000; Masi et al. 2003). The consequences of low participation in services are significant: public health benefits are diluted and frequent no-shows and cancellations are costly for service providers (Kazdin 1996; Spoth and Redmond 2000). There is some evidence that individuals at greater risk for poor outcomes (i.e. low-income urban families, those with more severe mental health conditions) are more likely to drop out of treatment programs (Miller and Prinz 1990; Snell-Johns et al. 2004). Thus, in many cases, individuals who may need services the most receive lower doses. The National Institutes of Health has identified low engagement and retention as significant threats to evidence-based interventions (2001).

Keeping families actively engaged in services can be challenging. Even if families are initially motivated to seek mental health services, a myriad of experiences can interfere with the

treatment process leading them to disengage or drop out prematurely. Many investigators have sought to understand these experiences by identifying predictors of family participation patterns and developing and testing theories of family engagement. However, few investigators have conducted randomized-controlled trials (RCTs) of interventions designed specifically to improve family engagement and retention once participants are already enrolled in services (Prinz et al. 2001; Staudt 2007). Three prior reviews (two focused on methods to increase initial attendance and adherence in child therapy outpatient services, and one focused on increasing access and engagement among low-income, minority families), included only seven RCTs testing these types of interventions (Nock and Ferriter 2005; Snell-Johns et al. 2004; Staudt 2003). We build upon these reviews by focusing our evaluation on randomized-controlled trials, and on interventions specifically hypothesized to improve families' on-going engagement and retention in a wider array of mental health service programs.

A large body of research has identified individual family characteristics that predict engagement and retention, but fewer studies examine provider attributes or intervention program factors associated with program participation (McCurdy and Daro 2001). Investigations have frequently explored whether sociodemographic and psychological characteristics discriminate between families who complete the program from those who drop out. In many studies, single-parent status, socioeconomic disadvantage, parent psychopathology, ethnic minority status, and coming from a low-resource neighborhood predict lower rates of engagement in clinical services (Nock and Ferriter 2005; Snell-Johns et al. 2004) and quality of participation in prevention programs (Nix et al. 2009). These types of investigations help identify who may be at highest risk for attrition, but they are less helpful in developing effective intervention approaches, as they offer little information about why families drop out and some risks are not amenable to change (Gross et al. 2001; Kazdin et al. 1997).

When families are asked about why they drop out of services, they frequently cite practical obstacles such as time demands and scheduling conflicts, high costs, and lack of transportation and child care (Garvey et al. 2006; Kazdin et al. 1997; Spoth and Redmond 2000; Stevens et al. 2006). They also raise issues related to the program approach (e.g. goals and activities are not in alignment with families' needs, low perceived benefit and relevance), providers (e.g. perceived as judgmental or not empathic), and program context (e.g. few programs in low-resource neighborhoods; Gross et al. 2001).

Providers have reported employing a variety of interpersonal strategies to engage families, including expressing empathy and validating their feelings about intervention, matching their communication style to the families' needs, and expressing respect for cultural, religious and other beliefs (Beeber et al. 2007). When asked about what they do to improve family retention, providers have indicated that they clarify reasons for treatment, provide clear treatment plans, emphasize achievable gains, reinforce positive change, and address other family needs (Watts and Dadds 2007). These studies have highlighted potential strategies, but few have been incorporated into engagement interventions that have been empirically tested.

A smaller body of research has applied theories to develop frameworks of family engagement. Staudt (2007) posited a theoretical framework involving five components: *treatment relevance and acceptability*; *cognitions and beliefs about treatment*; *daily stresses*; *external barriers to treatment*; and *therapeutic alliance*. *Treatment relevance and acceptability and cognitions and beliefs about treatment* have origins in the health beliefs model (Rosenstock 1966; Spoth and Redmond 1995), theory of reasoned action/planned behavior (Ajzen and Fishbein 1975), expectancies (Morrissey-Kane and Prinz 1999; Nock and Kazdin 2001), and self-efficacy theory (Bandura 1977), which posit that families' perceptions about the treatment process, outcomes, provider, and treatment setting influence their level of engagement. Families who

perceive a strong need for treatment, believe it will result in positive outcomes, and have high confidence in their ability to affect change in their lives will be more likely to engage in the treatment process (Kazdin et al. 1997; Spoth and Redmond 1995). Families also may drop out prematurely when their expectations about the goals and course of therapy do not match the provider's, or are not fulfilled (Morrissey-Kane and Prinz 1999). The transtheoretical model posits that families may be at different stages of "readiness to change." In this model, providers focus on enhancing families' intrinsic motivation to engage in activities to promote their health by helping them to realize how participation in treatment helps them to achieve their ultimate goals (Miller and Rollnick 2002; Prochaska and Velicer 1997).

The third component, *daily stresses*, reflects the finding that when personal stressors (e.g. low social support, family conflicts) are high, families' attention may be focused on these concerns, reducing their commitment and capacity to engage in treatment (Dadds and McHugh 1992; McKay et al. 1996a; Prinz and Miller 1994). In addition, *external barriers to treatment*, such as lack of transportation, scheduling difficulties, high cost, and lack of insurance have been associated with low engagement and premature termination (Kazdin et al. 1997; Spoth and Redmond 2000).

A large literature supports the critical influence of the *therapeutic alliance* on family engagement and retention (Elvins and Green 2008). Families who experience a personal bond with the provider and a collaborative relationship for developing tasks and goals of treatment are more likely to remain engaged in intervention (Thompson et al. 2007).

While not presented in Staudt's model, *family systems* factors have been posited to influence engagement. Family interaction patterns, such as disorganization, poor communication and lack of support for intervention have predicted lower engagement in family therapy (Perrino et al. 2001).

Utilizing *extrinsic rewards* to increase motivation to engage in treatment, such as incentives (e.g. gift certificates, money, transportation, food, etc.) have been hypothesized to increase engagement, particularly if receiving incentives is contingent on completing later treatment sessions or the entire program. Extrinsic motivators have been posited to promote engagement in activities that at first seem unpleasant or inconvenient, such as making difficult behavior changes that are part of engaging in mental health services (Ryan and Deci 2000). Incentives may be especially powerful for engaging low-income families (Fleischman 1979), as they may reduce obstacles to treatment (e.g. paying for childcare during sessions) and serve as positive reinforcement during what can be a difficult therapeutic process.

Provider, program, and community factors also have been posited to affect families' engagement and retention. For example, providers' level of experience and training, cultural competence, and caseload have been associated with family engagement (Kumpfer et al. 2002). In addition, program structure (e.g. frequency and duration of sessions), program content, supervisory support, stability of funding, low provider turnover, and location in a low-resource neighborhood are posited to influence family engagement, although these factors have rarely been systematically studied (Korfmacher et al. 2008; McCurdy and Daro 2001; McGuigan et al. 2003). Few engagement interventions have been developed to modify and test these types of systems-level factors.

In summary, considerable knowledge exists about factors associated with family engagement, and studies have examined theoretical mechanisms and potential intervention targets. In this review, we evaluated interventions to improve family participation in parent and child mental health interventions that have been tested rigorously. We anticipated that the engagement intervention literature would be relatively sparse (e.g. few RCT studies) and that identified studies would vary widely in populations, settings, and study approaches, making it difficult

to provide a quantitative synthesis (i.e. meta-analysis; Lewis et al. 1997). Thus, we employed a qualitative review approach in which we systematically identified intervention RCTs, critically appraised their scientific validity, and carefully interpreted and summarized the emerging evidence across this relatively new area of research.

## Methods

### Scope of Review

We conducted a comprehensive literature search in Pub-Med and PsychInfo to identify experimental studies of engagement and retention interventions that have been published in English since 1980. The following search terms were utilized in combination: *child* or *family* or *adolescent* and *randomized-controlled trial* and *intervention*; with each of the following terms, *retention*, *attrition*, and *engagement*. There were relatively few published studies identified with relevant combined search terms (e.g. combination of the above terms produced 215 studies of which 5 met eligibility criteria). Thus, we also utilized PubMed and PsychInfo options to link to similar articles, reviewed citations in articles that were identified through the literature search, and hand-searched each term to locate eligible studies. We restricted this review to randomized-controlled trials (RCTs) to insure that strong conclusions could be made about the efficacy of the tested interventions. Only studies where engagement and/or retention were primary outcomes and the intervention or prevention program involved some type of mental health service were included. We eliminated RCTs that were poorly reported (e.g. lack of definition of engagement or retention outcomes; insufficient information to determine whether participants were actually randomly assigned).

Given the wide variation in definitions of terms related to program participation (Nock and Ferriter 2005), for the purposes of this review, we operationally defined measures of participation or on-going attendance as *engagement*, and rates of program completion as *retention*. Improving family enrollment in mental health services also is important, but beyond the scope of this review (Snell-Johns et al. 2004). We did not include studies that focused on family enrollment unless the investigators also clearly hypothesized that the intervention would improve on-going engagement or retention. We note, however, when the engagement intervention led to increased enrollment if it was measured. Studies of “treatment adherence,” where adherence reflected completing program homework or adhering to a medication or behavioral protocol, were excluded.

In our evaluation of each study, we considered the extent to which the engagement intervention was based upon a clear theoretical framework and necessary development research was completed (e.g. pilot study to determine feasibility and statistical power) for the conduct of the RCT. Given variation in the design, execution, and reporting of RCTs, we applied a set of evidentiary guidelines for evaluating the integrity of the research methods and reporting (American Psychological Association Publications and Communications Board Working Group on Journal Article Reporting Standards 2008; Consolidated Standards for Reporting Trials, CONSORT, Begg et al. 1996; Society for Prevention Research, Flay et al. 2005), including the extent to which recruitment procedures and sample characteristics were specified, group baseline equivalence was established, and implementation was measured. Given the nature of some outcomes (e.g. attrition), some reporting guidelines may not apply, such as including a CONSORT participant flow chart. We note when critical methodological standards were not met.

## Results

A total of seventeen studies met the inclusion criteria. Tables 1 and 2 present the authors and program developers, research design, population, treatment setting, intervention components,

outcome measures, and a summary of key results for each study. The review is organized by the timing and theoretical approach of the intervention. Following Nock and Ferriter (2005), studies were classified into two categories: those that tested engagement strategies that were implemented prior to, or in the early stages of, treatment (Table 1); and those interventions that incorporated engagement strategies continuously during treatment (Table 2). Each table begins with studies testing relatively simple strategies and graduates to more intensive, complex intervention strategies.

### **Pre- and Early Treatment Strategies to Improve Engagement and Retention**

Eight RCTs in which an engagement strategy was employed prior to or early in the intervention process were reviewed. These studies varied in terms of the populations and types of services examined. Three studies were conducted in outpatient child therapy clinics, four involved early adolescent substance use treatment or prevention programs, and one study tested methods to engage new parents in a substance use treatment program. Engagement methods ranged from providing appointment reminders, addressing parental and child expectations and attitudes about intervention, to resolving intervention barriers. These studies examined early engagement; few assessed long-term engagement and retention.

**Appointment Reminders**—Providing appointment reminders, a commonly used method in clinics, was the simplest strategy tested. Watt and colleagues (Watt et al. 2007) found that providing telephone reminders prior to the first five scheduled sessions for Australian families seeking outpatient therapy for child conduct problems did not lead to greater engagement or retention overall. In a follow-up analysis, appointment reminders led to greater engagement for families with children with high conduct problems than similar control families, but there were no differences across intervention and control families with low conduct problems.

**Brief Interventions to Address Interpersonal or Practical Barriers**—McKay et al. tested strategies designed to help strengthen the initial bond between providers and families, and to reduce or eliminate impediments to engagement for low-income families seeking treatment at an inner-city outpatient therapy clinic (McKay et al. 1996a, b, 1998). In the first study, they found that training providers to support the families' steps to initiate therapy and to address families' expectations about treatment, financial concerns, scheduling, and transportation issues during the first session led to higher enrollment and early engagement than control groups. In a follow-up study, they tested whether a brief 30-min engagement telephone interview, in which an intake worker addressed family concerns and barriers to treatment, or the telephone engagement interview plus the provider engagement-oriented first session, would lead to improved engagement in the first 18 weeks of therapy compared to controls. Families receiving the combined approach completed more visits than the telephone engagement condition or families receiving outpatient therapy as usual. Helping families address practical obstacles may result in greater initial engagement, but the impact on retaining families in long-term intervention was not assessed.

**Family Systems Engagement Approaches**—A more intensive pre-treatment engagement approach, developed and tested by Szapocznik, Santisteban and colleagues (Szapocznik et al. 1988; Santisteban et al. 1996; Coatsworth et al. 2001), demonstrated a large positive effect on family engagement and retention in three studies. The first two studies involved Hispanic adolescents and their parents who were seeking strategic-structural family therapy (Szapocznik et al. 1986) at an outpatient clinic; the third study involved Hispanic and African American parents and adolescents who had been screened for behavior problems and referred to an outpatient clinic for family therapy. The Strategic Structural-Systems Engagement (SSSE) intervention evolved from brief family systems therapy, in which engagement resistance is perceived as an expected process and the first "symptom" to address

in family therapy. SSSE providers contacted family members prior to the first session to assess sources of resistance keeping each family member from engaging in treatment, and then employed methods designed to reduce the type of resistance each member experienced. Methods include “joining” with each family member to understand concerns, values, and interests; encouraging them to keep the initial appointment; establishing a leadership role among family members to facilitate trust in the provider’s abilities to address family problems; and negotiating and reframing problems to instill hope. Across two efficacy trials and a community practice replication trial, approximately 80% of intervention families completed early sessions compared to approximately 60% of control families. Notably, the SSSE intervention had a large impact on retention, with rates of 58–75% in intervention conditions versus 25% in control conditions. The approach is well-integrated into the theoretical model and structure of structural-strategic therapy. This program of research is exemplary in that the intervention was programmatically developed, tested, and replicated across settings, using research designs, methods, and reporting that met high methodological standards.

Dakof et al. (2003) developed a manualized engagement intervention to engage low-income Black mothers of substance-exposed infants into drug abuse treatment programs. These mothers had been reported to the state child welfare department, and had received a referral to community treatment programs (outpatient, day treatment, or residential). For mothers assigned to the “Engaging Moms” (EM) intervention, “engagement specialists” utilized family therapy techniques (e.g. joining, family genograms) to elicit family members’ assistance to engage mothers in treatment programs, and to promote bonding with providers in the beginning stages of treatment (Dakof et al. 2003). The intervention led to significantly greater enrollment and completion of at least 4 weeks of treatment. Once mothers completed 4 weeks of drug treatment, there was no difference across conditions in long-term duration in treatment (i.e. participation in treatment for at least 90 days). The EM program was successful during the active intervention period and may be helpful in getting resistant clients to start treatment. However, once the EM specialist was no longer involved, the mothers did not participate in treatment at greater rates than those who did not receive the intervention.

**Adaptations to Program Delivery**—One investigation tested an intervention consisting of an adaptation of how families with middle school-age children were invited to engage in a program focused on reducing youth substance use. Families were randomized to receive one of two invitation strategies. The first strategy offered families two points at which they could make a decision about their level of involvement in services; these families were first invited to receive a brief assessment and some prevention program content requiring a short time commitment, and then were invited to participate in the full prevention program. Families receiving the second strategy were offered the full 5-session prevention program. Based in the health belief model (Rosenstock 1966), the investigators hypothesized that the first strategy would diminish engagement barriers (time commitment) and increase motivation by clarifying the need and potential benefits of participation. The two strategies led to high enrollment but did not differ in rates of family engagement or retention (Spath and Redmond 1994).

In summary, four pre- and early treatment interventions showed positive effects on engagement, with less consistent evidence for retaining families through program completion once they have initiated services. The majority of pre- and early treatment engagement intervention studies involved families seeking treatment for child behavior problems at outpatient clinics; thus, we are limited in the ability to generalize findings to other populations and settings. For these families, telephone reminders did not facilitate initial or long-term engagement in outpatient treatment. More intensive, personalized interactions in which providers identified and addressed families’ sources of psychological resistance to treatment (e.g. lack of understanding about treatment processes, hopelessness due to perceived past failures in previous treatment) produced larger impacts on engagement and retention in

outpatient services. Families also engaged in treatment more often when providers acknowledged and addressed external impediments such as scheduling, transportation, and financial concerns. Only one RCT tested a pre- or early treatment engagement strategy in a prevention program. Varying the method of inviting families into substance use prevention services did not facilitate initial or long-term engagement. It is unclear whether engagement interventions that were effective for families seeking outpatient clinic treatment would also increase family participation in prevention programs.

### **Continuous and Integrated Strategies to Improve Engagement and Retention**

Nine studies tested engagement and retention methods that were employed continuously throughout treatment (Table 2). These methods fell into two general categories: structural changes in how treatment was delivered (e.g. group vs. individual treatment, offering additional services or incentives, comparing providers with different training and experience) and clinical methods that were integrated into the treatment program itself (e.g. engagement-focused sessions throughout treatment). Six of these studies involved parents or families served at outpatient clinics, two studies were conducted in the context of school-based prevention programs, and one was tested in a home visitation prevention program for expectant mothers.

**Monetary Incentives**—Heinrichs (2006) investigated the impact of monetary incentives and program setting on engagement among low-income families recruited from preschools in Germany to participate in a parent-training prevention program. Families were assigned to either receive a small amount of money for attending each session and completing the program or no payment, and to participate in individual or group program sessions. Families that were offered payment (regardless of whether they participated in group or individual treatment sessions) enrolled at higher rates than non-paid families, but engagement rates were not significantly affected by payment. Only a small number (<5%) of families dropped out of the intervention, so the impact of payment on retention was not able to be subjected to analyses.

**Structural Adaptations or Additions**—As part of the study described above, Heinrich hypothesized that families who received the prevention services in a multiple-family group format would be less likely to participate than families receiving individual family sessions, as they may feel like the other families in the group would intrude on their privacy and judge their parenting behavior. However, there were no differences in engagement across the two conditions. In contrast, Cunningham et al. (1995) hypothesized that delivering a parent-training prevention program in a multiple-family group format would improve participation because the social isolation some families with behavior problems feel would be reduced. They tested whether small (5–7 families) group sessions held in local community centers in the evening led to greater engagement and retention than individual clinic-based family sessions. There was some indication that families who are traditionally less likely to participate in preventive parenting programs (i.e. immigrant, ESL, parents of children with greater aggression) were more likely to enroll in group-based services, but these families were not more likely to have improved long-term participation or retention.

One RCT examined the impact of delivering a home visiting prevention program for low-income, first-time mothers with providers possessing different backgrounds (nurses vs. paraprofessionals; Korfmacher et al. 1999). The study was relatively large with 244 families assigned to paraprofessional visitation and 236 families assigned to receive nurse visitation. The primary aim of this study was to examine program impacts on maternal and child outcomes, but given the clear focus on program engagement and retention, we report their findings here. While mothers rated nurses and paraprofessionals similarly on a measure of therapeutic alliance, nurses completed more visits, had fewer no-shows, and had greater participant retention than paraprofessionals (62% for the nurse-visited group vs. 52% for the

paraprofessional-visited group), which the investigators attributed to the providers' competence in meeting families' needs and expectations.

**Adjunctive Family Support**—Three studies tested engagement interventions in which providers integrated or offered adjunctive treatment sessions aimed at helping parents to address life stressors, including job and financial concerns, relationship conflicts, health problems, worries, and issues related to receiving social services. These three studies tested a family support intervention in the context of a structured child management outpatient treatment program for families with children exhibiting high rates of conduct problems. The investigators hypothesized that these families often experience significant stressors such as financial concerns and interparental conflict that may interfere with parents' energy and resources and distract them from fully participating in treatment. By supporting and helping parents to develop coping skills to address these stressors, the provider-family alliance is hypothesized to be strengthened and parents are expected to have more personal resources to focus on improving child management skills.

Prinz and Miller (1994) tested an intervention in which providers delivering a structured child management treatment curriculum were instructed to elicit parents' concerns that were not directly connected to treatment and to help families to address and resolve problems. Families in the control conditions received the structured child management program, but their providers were instructed to redirect any discussion of these types of concerns back to the child management treatment. They found that the families that received the additional family support engaged in the program at a greater rate than families receiving the standard child management training. The support intervention added only approximately 5% time to sessions, but led to significantly greater retention (71 vs. 53%). However, it should be noted that the measure of engagement was not clearly defined, making it difficult to interpret and compare these findings with other studies.

Kazdin and Whitely (2003) randomized families to receive either parent and child management training plus five parenting support sessions interspersed over the course of treatment, or parent and child management training alone. Because a primary focus of the study was to measure impact of the addition of the family support sessions on parent and child treatment outcomes (i.e. improvement in conduct problems, parenting skills), the authors limited their analyses to the subset of families who completed treatment (completers). They tested whether completer families receiving the support sessions had fewer no-shows or cancelled appointments than control families, and found no differences. However, the support intervention involved additional "stand-alone" sessions delivered to the mother, in which homework assignments were assigned to address external stressors, which extended treatment. The added time and activity demands in this approach may have served to decrease parents' motivation to engage. In addition, restricting analyses to retained families (i.e. not using an intent-to-treat analysis) does not allow one to assess the impact of the engagement intervention on participation patterns for all families randomized to the intervention, and limits generalizability (i.e. retained families may differ in important ways from families who dropped out prematurely).

In the third study involving a family support intervention, Miller and Prinz (2003) sought to understand whether families' expectations and attributions about treatment needs and the type of treatment they receive interact to impact engagement and retention. They hypothesized that parents' attributions about the source of the problem that led them to seek treatment, and the extent to which the structure and goals of treatment match those attributions, affects their motivation to engage in certain types of services. For example, parents with children with conduct problems more often attribute problems to the child's behavior, rather than to parenting factors (Morrissey-Kane and Prinz 1999). For these families, providing child-focused treatment in addition to parent training better aligns with parents' beliefs about treatment needs,



and thus may lead to greater engagement over time. For multiply-stressed families, child and parent-focused treatment in combination with family support sessions may lead to improved engagement and retention because this treatment structure addresses families' needs more comprehensively than parent- or child-focused treatment alone. When treatment expectations and structure are mismatched, families may disengage or drop out at greater rates.

To test these hypotheses, Miller and Prinz (2003) randomly assigned families with children with high rates of conduct problems to receive one of four treatments involving combinations of parent-focused plus family support sessions and two types of child-focused sessions. Family support sessions delivered early in treatment focused on eliciting and addressing parents' expectations and attributions about the treatment process. They also assessed parents' pre-treatment expectations in a coded interview conducted by a research assistant blind to treatment assignments. The combined parent and child treatment conditions had greater engagement and lower dropout than the parent and family support condition alone, but the child treatment-only group had the best engagement and retention outcomes overall. Moreover, parents who reported on pre-treatment measures that they were motivated for treatment because they believed their child needed to change but were assigned to the parent-only condition were more likely to drop out than those families assigned to a treatment structure that matched their beliefs about who should be involved (e.g. families who reported that they and their child could benefit from treatment and were assigned to the combined conditions). The results suggest that assessing families' beliefs early in treatment and matching families' expectancies and needs to program structure and content are beneficial engagement strategies.

**Motivational Interviewing**—Recently, investigators have examined engagement methods that derive from Motivational Interviewing (MI), an approach based upon transtheoretical and self-efficacy models that has produced positive effects on engagement and retention with mental health services for adults (Miller and Rollnick 2002). MI involves a set of clinical approaches designed to address ambivalence that individuals may experience about the treatment process and making behavior changes. MI providers communicate empathy, avoid confrontation and arguments, highlight the discrepancy between present behavior and desired outcomes, elicit self-motivational statements, and collaborate on behavior change plans, which are hypothesized to reduce resistance and strengthen commitment to treatment (Miller and Rollnick 2002; Nock and Kazdin 2005). Three RCTs tested whether incorporating MI improves engagement in family-based intervention programs, although the studies differ in the extent to which MI was adapted to address specific engagement concerns.

Nock and Kazdin (2005) developed a brief engagement intervention and tested it with families requesting parent management training for child conduct problems at an outpatient clinic. Their Participation Enhancement Intervention (PEI) involved three components (providing information about the importance of treatment engagement, eliciting self-motivational statements about participating in treatment from parents, and collaboratively addressing engagement barriers such as lack of support from others, perceptions that treatment is too difficult, and situational demands such as scheduling problems that lead to poor attendance in a behavior change plan worksheet) that were delivered in brief 5–10 min doses at three different points during treatment. The intervention had a large effect: intervention families reported greater motivation and had higher rates of engagement (completing 6.4 vs. 5.2 sessions) and retention in the parent management training program compared to controls (56 vs. 35%). These results suggest that adapting motivational techniques to focus on family engagement in ongoing therapy has promise. Moreover, given the relatively brief and “stand-alone” nature of the PEI, the intervention may have wide application and may be easily integrated into other psychosocial programs.

Another study tested whether incorporating three one hour MI sessions improved engagement in group therapy among low-income mothers mandated to substance use treatment (Mullins et al. 2004). These mothers had tested positive for drug use during pregnancy, and were mandated by state child protective services to participate in a 12-month comprehensive substance use program that offered individual and group therapy, parent training sessions, infant and child assessments, and psychiatric and case management services. They found no differences for participation in substance use group sessions across intervention and control conditions. The investigators did not assess whether the MI sessions led to improved engagement in the other types of services the program provided (e.g. parent training, psychiatric sessions). There are several possible reasons that the MI intervention was ineffective: (1) MI was employed without adapting it to focus on engagement issues specifically; instead, MI sessions focused primarily on behavior change (e.g. developing a plan to decrease drug use); (2) coerced treatment populations may not be ready to change (this was not assessed); and (3) MI sessions were not planned or consistently integrated (providers were allowed to integrate MI when they perceived it to be useful) which makes it difficult to assess whether participants received a therapeutic “dose” of MI.

Grote, Swartz and colleagues tested a multi-component engagement intervention incorporating MI, ethnographic interviewing (EI), and support services in a treatment program for low-income, depressed new and expectant mothers (Grote et al. 2007, 2008, 2009; Swartz et al. 2007). In a pre-treatment engagement session, providers used EI to elicit the mother’s “story” and explore the mother’s values and cultural perspective on treatment. MI was adapted to address engagement challenges. Providers reviewed hopes for treatment, offered consultation about treatment options, collaborated to address practical, psychological (e.g. stigma, lack of interpersonal support), and cultural barriers to participation, and enhanced commitment to treatment using MI clinical tools. Providers also supplied case management services to connect mothers to resources and reduce mothers’ stress. The engagement intervention demonstrated a large positive effect; 67% of mothers in the intervention group completed treatment, compared to only 7% of control mothers. These investigators’ program of research is notable for several reasons: the engagement intervention incorporated strategies developed from models with a strong evidence base (MI, EI, and family support); the approach was comprehensive and well-integrated with the underlying treatment; and the authors detailed the engagement approach (manuals, case studies) and how it is tailored to the populations’ specific engagement needs in their published work. However, the sample size in this study was small ( $n = 53$ ), so it will be important to replicate these results in larger trials, and to examine the generalizability of their findings.

In summary, some strategies that were employed continuously or that were integrated into the treatment process led to improvements in engagement and retention, while others demonstrated mixed or no evidence of efficacy. Monetary incentives may increase families’ initial interest but do not have an impact on later attendance or program completion (Guyl et al. 2003; Fleischman 1979). Offering group-based instead of individual family sessions did not lead to greater participation and retention, but background of visitors in a preventive home visiting program did have significant effects on number of completed home visits, no-shows, and participant retention. Interventions in which families’ motivations, expectations, and needs for treatment were addressed throughout the treatment process were generally successful in improving engagement and retention. Helping families cope with life stressors and identifying and matching families’ motivations to treatment structure and activities appeared especially promising, although these investigations have been limited to services delivered in outpatient clinics to families with child behavior problems.

## Discussion

Our goal with this review was to identify effective methods of improving families' engagement and retention in parent and child mental health programs. Despite the critical importance of this area of research, the empirical literature is relatively sparse. Over the last three decades seventeen randomized-controlled trials of engagement interventions have been reported in the context of child and family mental health programs. Seven general engagement approaches were tested: appointment reminders; brief initial engagement discussions; family systems engagement methods; structural or other adaptations to program delivery; financial incentives; enhanced family support; and motivational interviewing. Studies varied in terms of populations (e.g. depressed mothers, families with youth with conduct problems) and treatment settings (e.g. clinics, neighborhood centers). However, most of these studies tested engagement interventions in a particular context (outpatient mental health clinics serving families with children with conduct problems), with few trials involving families seeking treatment for other problems or seeking preventive intervention services. The majority of the trials were small efficacy studies, with only a few investigations approaching effectiveness trials. Very few of these engagement interventions have been replicated. Despite these limitations, some consistent patterns emerged in this literature. Given the limited populations, contexts, and mental health programs in which these engagement interventions were tested, however, it is difficult to say whether any of the interventions have generalizability. While it is worthwhile to synthesize the findings to date, there is significant need to further develop, test, and replicate tests of engagement interventions.

Four of the seven general approaches demonstrated success in improving families' engagement in treatment programs: brief early treatment engagement discussions, family systems approaches, enhancing family support and coping, and motivational interviewing. The four approaches all shared components that are likely to be "active ingredients" leading to improved engagement and retention. In each of these approaches, the provider directly elicited and addressed engagement issues with the family during the intervention process. Providers who effectively engaged families typically identified the potential benefits of services, discussed family expectations for treatment process and outcomes, and worked with the family to develop a plan to address practical (e.g. scheduling, transportation) and psychological engagement challenges (e.g. other stressors, family member' resistance to treatment). Although the format varied across these different studies, in general, successful engagement methods were (a) individualized and addressed families' particular needs, concerns, and barriers; (b) intensive, addressing engagement at multiple time-points, with multiple family members, and in multiple ways as families progressed in treatment; (c) developed from a strong theoretical framework, and (d) integrated seamlessly into the underlying treatment or prevention program structure.

Taking a personalized and collaborative approach to address families' engagement challenges may reduce families' ambivalence about treatment (Miller and Rollnick 2002) and convey understanding and respect for families' struggles to remain in treatment, which strengthens provider-family alliance. Miller and Prinz's (2003) finding that mismatches in families' pre-treatment expectations about the type and structure of treatment they need and what they received led families to drop out at greater rates, highlights the potential benefit of assessing the full scope of family concerns about treatment at the outset and then adapting and matching to programs that address these concerns. This type of assessment and tailoring of program delivery to specifically fit individual families' needs has not been explicitly tested in a randomized-controlled trial. Korfmacher et al.'s (1999) finding that mothers participated in a home visiting preventive intervention at a greater rate when the program was delivered by nurses compared to paraprofessionals also supports the benefit of matching family expectations and goals to the way programs are delivered; mothers' needs in pregnancy and infancy were better served by providers with greater legitimacy in addressing issues of physical health, a

major concern of pregnant women and parents of infants. The findings from the trials reviewed here suggest that adapting program delivery has considerable promise for improving family participation in services.

Overall, only a few of the engagement interventions were shown to improve families' rates of completing programs, even among programs with an expected short duration (i.e. 5–8 sessions). Improving families' completion rates is important for maximizing the impact of interventions; if families do not receive adequate doses of treatment, the positive benefits are likely to be reduced. The three most promising clinical approaches that were successful in keeping families actively participating through the recommended course of treatment were Szapocznik's et al. SSSE intervention (1988), Miller and Prinz's (2003) adjunctive family support intervention, and interventions utilizing motivational interviewing adapted to address engagement issues (Nock and Kazdin 2005; Grote et al. 2009). These interventions are particularly promising to test in future research with other settings and populations, as they are structured, have been manualized, and could easily be adapted for a variety of programs.

In contrast to the intensive and integrated methods described above, simple approaches (e.g. phone reminders) or where engagement was addressed indirectly showed modest short-term and no long-term benefits. For example, changes to the way in which families are invited to engage in intervention (i.e. through offering assessments prior to enrollment, group versus individual family treatment, or by being paid to attend sessions) did not affect on-going engagement or retention.

There are some populations for which engagement interventions have not been developed and tested, or are underdeveloped. Eleven of the seventeen studies tested engagement interventions that were specifically developed for or tested in clinics serving families with children with conduct problems; they face particular types of adversities and challenges that may not be relevant for families seeking other types of treatment (Kazdin 1996). It will be important to extend engagement intervention research and to replicate these intervention approaches for a wider range of parent and child mental health concerns. In addition, engagement strategies have been tested primarily in treatment (clinic) settings. Only three of the seventeen studies tested engagement interventions in the context of prevention programs; two of these trials tested relatively simple methods (i.e. payment, group sessions, offering assessments prior to program) that were ineffective. Prevention programs face different challenges when trying to engage and retain families in programs given that families are less likely to perceive a need for service, the duration of programs tends to be longer (e.g. lasting several years), and clear benefits may only emerge much later (Becker et al. 2002; Spoth and Redmond 2000). Different engagement strategies across these two settings may be needed; it is currently unclear whether effective methods for clinic-based interventions will work for families in long-term prevention programs. The more intensive, personalized approaches found to be effective with families seeking outpatient treatment have yet to be tested in prevention settings. In many prevention programs, particularly those that are offered widely or universally, intensive approaches may not be feasible given the cost and needed resources. However, some personalized assessment of expectations and needs with tailoring of the prevention program may lead to greater engagement and participation and improve the public health benefit of these programs.

Many researchers have noted challenges in enrolling and retaining ethnic minority families in prevention and treatment programs (Miranda et al. 1996; Snell-Johns et al. 2004). Families from low-income and ethnically-diverse backgrounds are less likely to access and utilize services and more likely to prematurely terminate services, particularly for mental health problems (Vega et al. 1999; Wells et al. 2001). Culture plays a role in how families approach and experience mental health treatment (Cardemil et al. 2005; Prinz and Miller 1994). Although studies have examined cultural adaptations or augmentations to treatments to improve minority

families' engagement (Liddle et al. 2006; Cardemil et al. 2005; Poderefsky et al. 2001), they have not been tested in randomized-controlled trials. There is considerable need to develop and test culturally sensitive engagement interventions for these populations (Dillman et al. 2007; McCabe 2002; Yancey et al. 2006).

One neglected avenue is in developing and testing interventions that address engagement factors at multiple levels of service systems (McCurdy and Daro 2001). Studies examining predictors of family engagement have found that provider attributes (e.g. cultural competence, communication style) and program characteristics (e.g. program inflexibility, staff turnover, service locations) may contribute to families' decisions to seek out and engage in mental health services. Interventions reviewed here were largely focused on altering provider-family interactions or providing additional supportive services to families in conjunction with treatment. The exception was the trial testing the impact of varied provider background in delivering a home visiting preventive intervention, which showed that nurses were more effective than paraprofessionals in engaging and retaining pregnant women and parents of young children (Korfmacher et al. 1999). Interventions in which all program support staff (not just clinicians) are trained on engagement barriers and strategies, or interventions to address systems or program barriers (e.g. duration between initial contact and first appointment, crowded waiting rooms, lengthy intake procedures, complex payment structures) may also facilitate family engagement (Korfmacher et al. 2008; McKay et al. 2004; Staudt 2003). These approaches show promise in quasi-experimental studies but have not yet been tested in RCTs (McKay et al. 2004; Rotheram-Borus et al. 1996).

The seventeen studies reviewed here tested engagement interventions using rigorous research designs (RCT). Strengths across these studies include: developing engagement interventions based in theoretical frameworks; clearly operationalizing the intervention; and assessing fidelity. In particular, Szapocznik et al.'s (1988) and Nock and Kazdin's (2001, 2005) programs of research are notable for having a strong theoretical model and pilot data to develop their engagement interventions, designing their studies to isolate the impact of the intervention approach, and for testing and reporting their results following CONSORT and APA evidentiary guidelines. Three engagement interventions were replicated in separate trials [Prinz and Miller's family support intervention (1994; Miller and Prinz 2003); McKay's engagement interview (McKay et al. 1996a, b), Szapocznik's SSSE intervention (Szapocznik et al. 1988; Santisteban et al. 1996; Coatsworth et al. 2001)], and the latter two were tested in small community effectiveness trials. This type of programmatic research provides strong evidentiary foundations and confidence that the approach will be effective if applied outside of research settings.

Several methodological limitations impede our ability to apply these findings to practice. We set our eligibility criteria in order to evaluate interventions tested with rigorous designs; however, the relatively small number of studies meeting these criteria, and the range in populations and settings across these few studies, make it difficult to draw broad conclusions. In addition, the bulk of these studies were efficacy trials, with small sample sizes (i.e. most averaged 30–75 families per condition). Efficacy trials, typically conducted in controlled contexts with a great deal of investigator involvement, identify promising engagement strategies that have a clear impact for specific populations and settings. However, these interventions need to be replicated and tested in larger effectiveness trials, in order to understand the impact under "real-world" conditions with a greater range in providers, populations, and settings. The relatively small number of eligible studies, and small samples in these efficacy trials, limit statistical power and generalizability of findings.

As this area of research moves forward, it is crucial that engagement methods be evaluated with longer follow-up periods. Most studies assessed early engagement in short-term treatment

programs (i.e. 5–8 sessions); only the SSSE intervention, motivational interviewing intervention, and utilizing providers with experience matched to specific population needs (i.e. nurses in prenatal home visitation) demonstrated evidence for long-term retention. We know very little about how to facilitate family involvement across long periods of intervention. We may need different engagement strategies to keep families actively involved in lengthy mental health interventions and prevention programs (Kazdin 1996).

There was wide variation in the extent to which these studies met evidentiary standards for reporting on RCTs. Operational definitions of engagement and retention measures are sometimes unclear. Two studies utilizing RCT designs were not included in this review, for example, because they assessed “attendance” without defining the term, making it impossible to determine the impact on ongoing engagement in services (Costantino et al. 2001; Tait et al. 2004). In addition, some studies provided insufficient information about sample characteristics, which limits our ability to specify the population that benefits and to assess generalizability. Finally, investigators frequently did not include adequate information about the timing of recruitment and randomization procedures. These elements are important for several reasons: families who are consented prior to randomization may be more likely to drop out because they are unhappy with their assignment, potentially resulting in differences across conditions; and when randomization is not masked or providers are involved in randomization, they may subtly affect group assignments and be influenced by knowledge of characteristics used in the randomization procedure (Olds et al. 2007). These sources of bias may lead to differential drop out across conditions before the intervention is introduced, making it difficult to assess the true impact of the intervention. Moreover, wide variation in both characteristics and quality of these studies, and the relatively small database, limits ability to assess overall impact of engagement interventions quantitatively (i.e. with meta-analysis) with any degree of confidence.

In this review, we identified promising strategies to improve family engagement and retention in mental health intervention and prevention programs. Engaging and retaining families in interventions is a critical translational issue for evidence-based programs, and an important issue to address for programs already in community practice. Systematic research focused on theoretically-based, well-defined and operationalized engagement interventions is needed to strengthen the impact of mental health interventions for vulnerable children and families.

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Randomized-controlled trials of interventions to improve engagement and retention: pre-treatment or early treatment strategies

Table 1

Study	Sample/setting	Intervention	Measures	Impact of intervention on outcomes?	
				Engagement	Retention
Watt et al. (2007)	262 families requesting treatment for conduct problems at two family outpatient therapy clinics in Australia Families scheduling initial appointments were consecutively assigned to groups	Pre-treatment telephone reminders I = call reminder prior to appt. (n not reported) C = outpatient treatment as usual (no reminders) (n not reported)	<i>Engagement</i> % of first 5 appts. attended <i>Retention</i> % of enrolled families who later refused treatment	No I > C for families with higher conduct problems (subgroup analyses)	No
McKay et al. (1996a); McKay and Bannon (2004)	107 low-income, inner-city families requesting child mental health services in urban child outpatient clinic Families scheduling initial appointments were consecutively assigned to providers with training (I) or without training (C)	Brief first session engagement interview I = provider received training to conduct engagement interview to clarify roles and therapy process, identify practical barriers, develop collaborative plan (n = 33) C = outpatient treatment as usual (providers received no training) (n = 74)	<i>Engagement</i> % returning for 2nd session # of completed sessions in 18-week period	Yes I > C (97 vs. 83%) attended 2nd session I > C (7.1 vs. 5.4 completed sessions)	N/A
McKay et al. (1996b)	109 low-income, inner-city families requesting child mental health services in urban child outpatient clinic Randomization in two steps: (1) intake requests were evenly divided among three groups; (2) after intake appointment was scheduled, I & I-2 families were randomly assigned to providers with (I) or without (I-2) engagement interview training	Combined brief telephone and first session engagement interview I = combined condition; intake worker delivered 30-min telephone engagement discussion ? provider addressed engagement in 1st session (n = 35) I-2 = telephone engagement discussion only (n = 35) C = outpatient therapy as usual (no engagement intervention) (n = 39)	<i>Engagement</i> # of completed sessions in 18-week period <vr>% of scheduled sessions completed	Yes I > I-2 & C (7.3 vs. 5.0 vs. 5.9 completed sessions) I > I-2 & C (74 vs. 49 vs. 58% scheduled sessions completed)	N/A
Szapocznik et al. (1988)	108 Hispanic families with adolescents with substance use problems requesting family therapy at University community mental health center No information on type of randomization	Brief telephone and early sessions Strategic Structural-Systems Engagement (SSSE) intervention I = prior to therapy, clinician implemented levels of the SSSE model (n = 56): <b>a.</b> schedule family members for therapy <b>b.</b> minimal joining (encouragement) <b>c.</b> more joining (re: values, interests, issues) <b>d.</b> restructuring (advising on inviting family members; call to engage members) <b>e.</b> lower-level direct engagement (joining and gathering information from many family members) <b>f.</b> higher-level direct engagement (out-of-office visits to family members to engage personally)	<i>Retention</i> % completed treatment	N/A	Yes I > C (77 vs. 25%) (ITT) I > C (83 vs. 59%) (of enrolled families)

Study	Sample/setting	Intervention	Measures	Impact of intervention on outcomes?	
				Engagement	Retention
Santisteban et al. (1996)	193 Hispanic families with adolescents with substance use problems requesting family therapy at University community mental health center No information on type of randomization	C = family therapy as usual (only level a listed above to engage families) ( <i>n</i> = 52)  SSSE (Szapocznik et al. 1988; see above) I = providers delivered SSSE prior to family therapy ( <i>n</i> = 52) C = outpatient family therapy as usual ( <i>n</i> = 67) C-2 = outpatient group-based family therapy as usual ( <i>n</i> = 74)	<i>Engagement</i> % adolescent and 1 family member attended intake and 1 session <i>Retention</i> % completing at least 8 h of therapy and termination assessment	Yes I > C & C-2 (81 vs. 57 vs. 63%) (ITT)	No
Coatsworth et al. (2001)	104 Hispanic and African-American families with adolescents with behavior problems identified by parents or teachers referred to a University child mental health services center and community mental health agency Stratified randomization by ethnicity, after intake assessment	SSSE (Szapocznik et al. 1988; see above) I = providers delivered SSSE ( <i>n</i> = 53) C = outpatient family therapy at community agency as usual ( <i>n</i> = 51)	<i>Engagement</i> For I families, % adolescent and one family member attended intake and 1 session; for C families, % at least one family member attended 1 session <i>Retention</i> % completing clinician's recommended treatment	Yes I > C (81 vs. 61%) (ITT)	Yes I > C (58 vs. 25%) (ITT) I > C (72 vs. 42%) (of enrolled families) For conduct problem families, I > C (subgroup analyses)
Dakof et al. (2003)	103 low income, black mothers of infants exposed to drugs in utero referred to outpatient and inpatient drug rehabilitation clinics Stratified randomization (type of drug treatment, age, HIV status, extent of child welfare involvement)	Brief provider support intervention I = specialist met with mother to enhance therapeutic relationship, review life history, address barriers for 8 weeks; once enrolled, specialist met with mother for 1st 4 weeks of treatment ( <i>n</i> = 51) C = outpatient and inpatient treatment as usual ( <i>n</i> = 52)	<i>Engagement</i> % in treatment after 4 weeks <i>Retention</i> # of days in treatment over 90 day period	Yes I > C (67 vs. 38%) (ITT)	No
Spoth and Redmond (1994)	387 families from 6 low-income rural school districts interested in a substance use prevention program for 6th-7th grade students at a University prevention research center Multiple step randomization: (1) 425 families randomly selected from school district lists and assigned to I or C group; (2) 387 were eligible and agreed to participate in study	Offering partial then full vs. full prevention program I = families invited to participate in brief assessment, then 5-session drug prevention program ( <i>n</i> = 137) C = traditional recruitment (recruited directly into 5 session prevention program) ( <i>n</i> = 250)	<i>Engagement</i> % attending each session <i>Retention</i> % completing program (5 sessions)	No	No

Note: N/A not assessed/not applicable, I intervention condition, C control condition, ITT intent-to-treat analyses. We note when there is more than one intervention condition with I-2, I-3, or I-4

**Table 2**

Randomized-controlled trials of interventions to improve engagement and retention: continuous and integrated strategies

Study	Sample/design/setting	Intervention	Measures	Impact of intervention on outcomes?	
				Engagement	Retention
Heinrichs (2006)	Families who were offered parenting intervention at 15 preschools in disadvantaged neighborhoods in Germany. Preschools matched on size, then randomized at preschool level	Payment and group versus individual family sessions I = payment for each family home-based session and bonus for attending all 8 1-h individual home-based sessions (n = 96) I-2 = payment for each group session and phone contact, and bonus for attending all 4 2-h group sessions (n = 59) I-3 = no payment for individual family home-based sessions (n = 45) I-4 = no payment for group sessions (n = 48)	<i>Engagement</i> # of program hours attended <i>Retention</i> % completed program	No	No
Cunningham et al. (1995)	150 parents of kindergarten children with conduct problems offered treatment in Canadian school district Block randomization (marital status, sex, and severity of aggression)	Group versus individual family sessions I = 12-session neighborhood-based group parent training program (n = 48) C = 12-session individual family clinic-based parent training program as usual (n = 46) C-2 = wait-list control (n = 56)	<i>Engagement</i> % of scheduled sessions attended <i>Retention</i> % families dropped	No	No
Korfmacher et al. (1999)	480 low-income, first-time mothers recruited from prenatal clinics for a 2.5 year home visiting preventive intervention from pregnancy to child age 2 Stratified randomization (race/ethnicity, gestational age, and location)	Type of provider (e.g. training and background experience) I-1 = 2.5 year home visitation program delivered by nurses (n = 236) I-2 = 2.5 year home visitation program delivered by paraprofessionals (n = 244)	<i>Engagement</i> Number of completed visits Number of unsuccessful attempted home visits <i>Retention</i> 7.63 attempted visits in infancy % families dropped	Yes I-1 > I-2 (28 vs. 23 completed visits) I-1 \ I-2 (5.35 vs. 7.63 attempted visits in infancy)	Yes I-1 > I-2 (38 vs. 48%) (ITT)
Prinz and Miller (1994)	147 families with child conduct problems requesting treatment at outpatient family therapy clinic Stratified randomization (single parent status, SES, age of child)	Augmented parent stress and coping skills intervention discussions (n = 72) C = child management therapy as usual (n = 75)	<i>Engagement</i> % completing "some" sessions (undefined) <i>Retention</i> % completed treatment (undefined)	Yes I > C (no % reported)	Yes I > (71 vs. 53%) (ITT)
Kazdin and Whitley (2003)	127 families with children with conduct problems requesting treatment at outpatient child mental health clinic (subgroup of families who completed treatment, n = 84) Consecutive referrals were randomized to conditions	Augmented parent stress and coping skills intervention I = 20-25 sessions of parent and child management treatment and 5 sessions focused on reducing parent stress (n = 70 randomized, unclear n for completer subgroup) C = 20-25 sessions of parent and child management treatment only (n = 57 randomized, unclear n for completer subgroup)	<i>Engagement</i> # of cancellations divided by # of weeks in treatment <i>Retention</i> # of no-shows divided by # of weeks in treatment	No	N/A
Miller and Prinz (2003)	124 families with child conduct problems requesting treatment at University outpatient family therapy clinic Block randomization (SES, age of child)	Augmented parent stress and coping skills intervention in combination with parent and/or child sessions I = 24-session parent training & added parent support discussions (n = 32) I-2 = 24-session child cognitive treatment (n = 31) I-3 = conditions 1 ? 2 (n = 30) I-4 = condition 1 ? child relationship support (n = 31)	<i>Engagement</i> % kept appointments % late arrivals <i>Retention</i> Premature termination (parent declined or missed 3 consecutive appts)	Yes I-2, I-3, I-4 > I (not reported)	Yes I-2, (I-3 ? I-4) \ I (19, 31% vs. 50% dropout) (ITT)

Study	Sample/design/setting	Intervention	Measures	Impact of intervention on outcomes?	
				Engagement	Retention
Nock and Kazdin (2005)	76 families with child conduct problems requesting treatment at outpatient family therapy clinic Block randomization (blocks unreported)	Engagement MI sessions I = 8-session parent training plus three brief MI engagement-focused discussions across treatment ( $n = 39$ ) C = 8-session parent management training as usual ( $n = 37$ )	<i>Engagement</i> # of completed sessions Reported adherence to treatment <i>Retention</i> I > C greater adherence in later sessions Premature termination (8 sessions)	Yes I > C (6.4 vs. 5.2 completed sessions) I > C greater adherence in later sessions (subgroup analyses)	Yes I > C (56 vs. 34%) (ITT) I \ C premature termination
Mullins et al. (2004)	71 low-income women mandated to 12-months outpatient substance use treatment by child welfare due to prenatal drug use at University free mental health clinic Stratified (not reported) randomization	Brief drug-use focused MI sessions I = outpatient group treatment for drug use with 3 MI sessions during early stages of treatment ( $n = 35$ ) C = outpatient group treatment for drug use, 2 educational video sessions and one home visit ( $n = 36$ )	<i>Engagement</i> # of group sessions attended <i>Retention</i> Completion of treatment through the 3 MI sessions (I) or 2 educational sessions plus home visit (C)	No	No
Grote et al. (2007, 2008, 2009); Swartz et al. (2007)	53 low-income, depressed mothers and expectant mothers requesting treatment in an outpatient clinic Block randomization (race)	Multi-component intervention I = MI and ethnographic interviewing engagement session and ongoing case management in addition to adapted Interpersonal Therapy (8 sessions plus as-needed booster sessions) ( $n = 25$ ) C = adapted Interpersonal Therapy (8 sessions plus as-needed booster sessions) ( $n = 28$ )	<i>Engagement</i> # of completed sessions <i>Retention</i> % completed 7–8 sessions	Unclear I > C (# not reported)	Yes I > C (68 vs. 7%) (ITT)

Note: N/A not assessed/not applicable, I intervention condition, C control condition, ITT intent-to-treat analyses. We note when there is more than one intervention condition with I-2, I-3, or I-4