FAMILY PROCESS

Therapists' and Clients' Perceptions of Bonding as Predictors of Outcome in Multisystemic Therapy®

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This longitudinal study examined whether strength of and balance in self-reported caregiver, youth, and therapist emotional bonds in mid- and late treatment predicted outcomes in Multisystemic Therapy of adolescent behavior problems in a sample of 164 caregiver-youth dyads. Strength of and balance in bonds related to outcome in different ways, depending on the source of the report and time. Results showed a limited association between family members' emotional connection with the therapist and treatment outcome, whereas therapists' perceptions of bond with the caregiver showed highly significant associations across time. Caregiver-therapist agreement on emotional connection at both time points predicted therapist evaluation of treatment success and successful termination, but this was largely explained by therapists' level of alliance. Balance in bonds with the therapist between caregiver and youth had no significant associations with any outcome. The study major limitations such as examining only one component of alliance and possible implications are discussed.

Keywords: Alliance; Bond; Perception; Multisystemic Therapy

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The therapeutic alliance has been referred to as the "quintessential integrative variable" in psychotherapy (Wolfe & Goldfried, 1988), and is one of the most-often cited common factors in psychotherapy process (e.g., Davis, Lebow, & Sprenkle, 2012; Karver, Handelsman, Fields, & Bickman, 2005). Meta-analytic studies have found modest but consistent relationships between alliance and outcome across adult treatments and clinical problems (e.g., Fluckiger, Del Re, Wampold, Symonds, & Horvath, 2012; Friedlander, Escudero, Heatherington, & Diamond, 2011). At the same time, the alliance-outcome association in youth therapy appears to vary across studies and treatments (Karver,

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Handelsman, Fields, & Bickman, 2006) and may be moderated by problem type, treatment mode, and other variables (McLeod, 2011). This warrants more studies of the alliance-outcome nuances in different treatments focused on youth.

Most conceptualizations of therapeutic alliance and its measurement include two primary components: "task and goal oriented" and "bond" (Elvins & Green, 2008; Webb et al., 2011). "Bond" refers to the relational aspect or emotional connection and trust between client and therapist, whereas the "task" component of alliance pertains to agreement on the goals and methods of treatment. While there is a consensus that therapist-client bond is a key ingredient in therapeutic process (e.g., Norcross & Wampold, 2011), it is rarely studied separately from task aspects of alliance in the context of youth evidence-based treatments. Karver et al. (2006) concluded their meta-analysis of associations between therapeutic relationship variables and treatment outcomes in youth treatments with the suggestion that combining alliance components in one measure may result in loss of information about therapy process and different components may be differentially important at different stages of treatment. They suggested that more research is needed to discover the specific role of the bond component.

Affective bond, trust, and a sense of collaboration between the therapist and clients are important components of alliance (Kindsvatter & Lara, 2012; Rait, 2000). The client's relationship with the therapist may have a direct curative effect as well as play a mediating role in increasing participation in treatment (Shelef, Diamond, Diamond, & Liddle, 2005) and/or other therapy processes that lead to positive outcome (Karver et al., 2005). Establishing and sustaining a trusting and collaborative relationship with the therapist are considered to be both critical and especially challenging in treatments of youth externalizing behaviors since youth are usually mandated to treatment or treatment is initiated by adults (Shelef et al., 2005). This challenge may be present in individual treatment but be especially difficult in family based treatments in which the therapist interacts with multiple family members who come to therapy with different motivations, expectations, and goals.

Family therapists have long acknowledged that the role of alliance requires consideration of additional complexities and dimensions in family treatment: group level (the therapist's relationship with each subsystem and with the family as a whole) and within-family alliance (the shared sense of purpose among family members; see Friedlander et al., 2011). Simultaneously, a therapist forms a therapeutic relationship with each family member, resulting in multiple individual alliances that may interact synergistically over the course of treatment to enhance or undermine the overall family therapist alliance (Pinsof, 1994). Each form of alliance may matter and impact treatment process and outcome (Kindsvatter & Lara, 2012). Consideration of individual alliances can be especially important in modalities that include both individual and family sessions. An unbalanced alliance (also referred to as discrepant or split alliance; Bartle-Haring, Glebova, Gangamma, Grafsky, & Ostrom Delaney, 2012; Friedlander et al., 2011; Muniz De La Pena, Friedlander, & Escudero, 2009; Robbins, Turner, Alexander, & Perez, 2003) occurs when family members differ in their strength of alliance with the therapist. Robbins and colleagues (Robbins et al., 2003, 2006, 2008) examined within-family differences in alliance in the context of Brief Strategic Family Therapy (BSFT), Functional Family Therapy (FFT), and Multidimensional Family Therapy (MDFT) for adolescents with substance abuse or behavioral problems. Robbins et al. (2003, 2006, 2008) found that balance in alliance across family members early in treatment significantly predicted retention in BSFT, FFT, and MDFT. Their findings also suggested that different dimensions of alliance may affect treatment in different ways for different family based treatment models. Specifically, *balance* in alliance predicted retention in family therapies that work mostly in a conjoint format (BSFT, FFT), whereas the *strength* of alliance (rather than balance) predicted

retention in treatment that uses individual and conjoint formats (MDFT; Robbins et al., 2008).

Most studies on balance in alliance have focused on alliance measured early in treatment. However, alliance strength and balance may play different roles later in treatment than earlier in treatment. In most family therapies, especially therapies used with youth externalizing behaviors (e.g., BSFT, FFT, MDFT, MST), early treatment sessions concentrate on establishing positive bonds between the therapists and family members to engage and retain families in treatment (Tuerk, McCart, & Henggeler, 2012). Once a therapeutic bond has been established, therapists work on altering parenting behaviors and family interactions linked to antisocial behavior. Maintaining bonds during mid-treatment, when the demands of treatment are at their greatest, may be particularly important for treatment outcome. Some (e.g., Stoolmiller, Duncan, Bank, & Patterson, 1993) have suggested that mid-treatment may be a time of "rupture and repair" in the therapeutic relationship: repair of ruptures in the relationship rather than maintaining a smooth relationship throughout treatment propels treatment toward a successful conclusion. Other evidence supports the idea that the active stage of therapeutic change is not necessarily a smooth one, and that various components of family alliance evolve differently for different clients, and that timing of alliance assessments is important. Sotero, Major, Escudero, and Relvas's (2016) recent study of the observed family alliance at sessions 1 and 4 in brief systemic therapy showed that voluntary and involuntary clients differed on all alliance dimensions in the beginning of therapy; however, by the fourth session the differences disappeared for all components except engagement. Clients also reported an unexpected decrease in the safety and shared purpose components of family alliance over time. Engagement increased and emotional connection with the therapist did not significantly change in mid-treatment. The question remains, however, whether strength of and balance in the bonds between therapists and family members at different points in family treatment of youth delinquent behaviors predict treatment outcome beyond retention.

This study extended Robbins and colleagues' examination of balance in alliance by focusing specifically on bonding aspects of alliance in another family based treatment, Multisystemic Therapy (MST; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009). While having many similar features, various evidence-based treatments for delinquent adolescents utilize somewhat different theories of change and formats. Thus, the role of different alliances may also differ from treatment to treatment. MST is one of the most well-validated, evidence-based treatments for youth exhibiting serious clinical problems and antisocial behavior (Henggeler & Schaeffer, 2016; National Institute on Drug Abuse, 1999; President's New Freedom Commission on Mental Health, 2003). Derived from Bronfenbrenner's theory of social ecology, the MST theory of change rests on two primary assumptions: (a) Adolescent antisocial behavior (e.g., criminal offending, drug use) is the result of the bidirectional and synergistic interaction of risk factors across multiple systems of influence (individual, family, peer, school, community), and (b) Caregivers are key to youth behavioral change. The MST theory of change suggests that therapist adherence to MST treatment principles results in improved caregiver and family functioning (e.g., parental discipline, monitoring, and family relations), which decreases in an adolescent's association with deviant peers (a major risk factor in antisocial behavior), which leads to decreases in antisocial behavior (Henggeler & Schaeffer, 2016; Huey, Henggeler, Brondino, & Pickrel, 2000).

One major difference in MST compared to many other evidence- and family based interventions is that MST involves a combination of individual and conjoint family sessions, with most sessions including only the therapist and caregiver, with a particular emphasis on caregiver's engagement in treatment (see Cunningham & Henggeler, 1999; Henggeler et al., 2009). Treatment is individualized for each case based on the unique needs of each

youth and family, so frequency and duration of sessions with different family members can vary, with the primary caregiver serving as a core participant throughout therapy. Because of the primacy of the caregiver in MST treatment, the MST theory of change would suggest that therapist alliance with the caregiver is more important to treatment outcome, relative to that of the adolescent.

While MST treatment varies, it uses the home-based model of service delivery and provides 24-hour-a-day, 7-day-a-week service availability. Such intensive services are available for each family for 3–5 months, and while intentionally brief each family may receive 60 hours or more of direct contact between the therapist and family (for a complete description of MST clinical processes see Henggeler et al. 2009). Furthermore, the duration, frequency, focus, and who attends MST treatment sessions also vary as a function of changing family and clinical circumstances, needs, and treatment progress (Henggeler, Schoenwald, Rowland, & Cunningham, 2002). Thus, for example, at the start of MST treatment, therapists are assessing family structure and family functioning and may meet multiple times a week with all family members to observe family interactions, with sessions lasting from 1 to 3 hours. As treatment progresses, however, therapist may meet individually with family members to teach and practice new skills (e.g., meet with the caregiver to teach a particular parenting skill).

The only study to date that has examined the relation between alliance and outcomes in MST (Granic et al., 2012) found that therapists' ratings of strength of early alliance predicted changes in adolescent externalizing behavior while mothers' ratings of alliance did not. Granic et al. (2012) investigated overall alliance (goals, tasks, and bonds). This study extended Granic et al.'s work by (a) focusing on alliance assessed later in treatment (at mid-treatment and at termination), (b) following Karver and colleagues' recommendation to separate alliance constructs by focusing only on bonding (the perceived emotional connection between the therapist and family members), and (c) by examining both strength of bonds and similarity in bonding (as an indicator of balanced alliance) as predictors of treatment outcome. We also (d) included youth reports on alliance with the therapist, since an unbalanced alliance with the therapist in one subsystem (in our case, in a caregiver-youth dyad) may impact outcome (Kindsvatter & Lara, 2012). Also, we wanted to investigate the relationship between youth perception of bond with the therapist and outcome in the context of a family treatment in which the main focus is on working with a caregiver.

Specifically, this study used archival data from a longitudinal study of MST process to examine whether (a) strength of therapist, youth, and caregiver bond predicted MST outcomes, and (b) similarity in within-family (caregiver-youth) and therapeutic relationship (caregiver-therapist) bond predicted MST outcomes. Because an unbalanced alliance means that one person views the therapeutic relationship more positively than another, we also examined whether (c) relationships between similarity in bonding and outcomes could be explained by strength of bond rated by the participants. Finally, we explored whether (d) participants' bond and bond similarities showed different relationships with outcome in mid-treatment versus at the end of treatment. Based on the literature on alliance in family therapy and in MST that shows that trust, affective bond, and a sense of collaboration between the therapist and clients are important components of alliance and may have direct and indirect effects on treatment outcomes (e.g., Karver et al., 2005; Kindsvatter & Lara, 2012; Rait, 2000; Shelef et al., 2005), we hypothesized that strength of bond between therapist and caregiver as well as between therapist and youth would predict MST outcomes. We also hypothesized that more similarity in caregiver-youth bond with the therapist (i.e., more balanced family alliance) would predict improved treatment outcome at termination. Because MST training and supervision emphasize engagement between caregiver and therapist, we also expected that greater therapist-caregiver bond similarity would predict better treatment outcomes.

METHOD

Participants

Data for this study came from a longitudinal evaluation of MST provided by licensed MST provider organizations in community settings. MST therapists (N = 52), caregivers, and youth (N = 185 families) were recruited from four agencies in Denver, Colorado, licensed to provide MST services to youth and families. Families were eligible for the study if: (a) the youth was referred to one of the participating agencies for antisocial behavior problems (e.g., physical aggression, delinquency, substance abuse), (b) the youth had been living in the caregiver's home for at least 1 month prior to treatment, and (c) at least one caregiver was willing to participate in treatment.

Twenty-one cases were excluded because either the caregiver or therapist changed during treatment. Excluded cases did not differ significantly from the rest of the sample on age, gender, ethnicity, socioeconomic status, and pretreatment levels of youth externalizing behaviors, delinquency scores, and parental monitoring. Of the remaining 164 families, 106 (64.6%) of the youth were male with an average age of 15 years (SD = 1.31). Participating caregivers were mostly female (86.6%), with a mean age of 43 (SD = 8.56). Slightly more than half of the caregivers indicated that they were White (51%), with the remainder Latino/a (26%), Black (20%), or "other" (3%). Socioeconomic status (SES) averaged 30.44 on the Hollingshead (1975) scale (SD = 11.25, range 6–58), indicating that the average family was either lower middle class or middle class. Of the 46 therapists who provided data, 74% were female; and 84% were White (2% Black, 4% Latino/a, 9% other). Therapists reported an average age of 31 years (SD = 7.46), and 9.8 months of experience delivering MST (SD = 12.86). Most (82%) had master's degrees in service provision fields (e.g., Social Work, Counseling, Marriage and Family Therapy).

Procedures

The study was approved by the IRBs at each of the investigators' institutions. Caregivers and therapists signed informed consent forms and youth completed assent forms affirming their willingness to participate voluntarily in the study. Research assistants administered measures to therapists, youths, and caregivers at four time points: immediately after starting treatment (T1), after 8–10 weeks of treatment (T2), after 12–14 weeks of treatment (T3), and at termination (T4). Therapists completed questionnaires assessing demographic information when they enrolled in the study. For this study, we used data from the T2 (mid-treatment) and T4 (termination) assessments. Data from T1 were also used to control for pretreatment levels of parental monitoring and youth delinquency. Family measures were computer-administered in the family's home; therapist measures were administered over the telephone or by computer.

All participants received MST in accordance with MST quality assurance procedures (see Henggeler et al., 2009). Therapists carried low caseloads and were available 24/7 to meet with family members as needed. Sessions were typically held in family homes at times convenient to families and in community locations (school, recreation center) within the youth's natural environment. In addition, supervision was provided throughout to assist in maintaining adherence to MST treatment principles. On average, MST treatment lasted 17 weeks (SD = 7.45 weeks, range 3.14–43.43 weeks). Therapist records (available for 98 families) indicated that therapists and families met for 24 sessions on average (SD = 12, range 4–64). The primary caregiver was present on average for 18 sessions, youth for 17, and other individuals (e.g., other caregiver or family member, teacher, etc.) for 10.

Measures

Working alliance inventory (WAI), bonding subscale

Caregivers, therapists, and youths completed the 12-item emotional bond subscale of the WAI (Horvath & Greenberg, 1989) at T2 and T4. Caregivers and youths each rated their bond with the therapist, and therapists rated their bond with the caregiver. WAI scores correlate significantly with other measures of similar constructs and predict client outcome in adult treatment (Horvath & Greenberg, 1989). Internal consistencies for this sample were 0.82 (T2) and 0.87 (T4) for caregiver scores; 0.87 (T2) and 0.86 (T4) for youth scores; and 0.90 (T2) and 0.91 (T4) for therapist scores.

Scores for the WAI were calculated by averaging the items to provide an index of strength of alliance for each participant. To measure balanced alliance, or "alliance similarity," we calculated intraclass correlations (ICC) between (a) the caregiver's and therapist's reports on WAI items, and (b) the caregiver's and youth's reports on WAI items. Although a variety of approaches have been used to calculate differences in perceptions of alliance (see Bartle-Haring et al., 2012), we followed Kenny, Kashy, and Cook's (2006) recommendations for choosing an appropriate dyadic assessment of the correspondence between two sets of scores. The ICC reflects similarities in levels and profiles of measures (in our case, WAI items), regardless of absolute levels, and is normalized by the spread: 1.0 indicates exact similarity, −1.0 indicates maximal dissimilarity, and 0 indicates chance similarity (see Table 1 for means and *SD*s).

Outcome variables assessed at termination (T4) included measures of youth antisocial behavior, therapist perception of treatment outcome, and termination success. In addition, we examined caregiver and youth reports of parental monitoring, as changes in parenting are core targets of MST treatment, and parental monitoring is an established mediator of MST outcomes (e.g., Henggeler et al., 2009; Huey et al., 2000). Because of the effort required by caregivers to change parenting behavior, we suspected that changes in parenting practices might be particularly susceptible to weak or unbalanced alliances.

Externalizing scores, child behavior checklist

The Externalizing Score of the CBCL (Achenbach, 1991) is based on 33 behavior problem items rated on a 0–2 scale. Log-transformed T1 and T4 externalizing scores were used in this study to satisfy regression analysis assumptions as raw externalizing scores were skewed. CBCL externalizing scores have been found to have strong reliability and validity (Achenbach, 1991). The coefficient alphas for externalizing scores for participants in this study were .94 (T1) and .95 (T4).

TABLE 1

Means (and Standard Deviations) for Study Variables at Mid-treatment (T2) and Termination (T4)

	Mid-treatment (T2)	**Termination (T4)**
Therapist WAI, Bonding Subscale	5.64 (.91)	5.80 (.93)
Caregiver WAI, Bonding Subscale	6.03 (.80)	5.89 (.98)
Youth WAI, Bonding Subscale	5.13 (1.17)	5.16 (1.19)
Agreement (ICC), Therapist-Caregiver WAI	.59 (.31)	.61 (.34)
Agreement (ICC), Youth-Caregiver WAI	.44 (.32)	.44 (.33)
CBCL Externalizing	N/A	14.96 (12.95)
Self-Report Delinquency	N/A	2.17 (3.73)
TPTO	N/A	3.30 (.97)
Caregiver report, Parental Monitoring, Alabama Parenting Scale	N/A	3.58 (69)
Youth report, Parental Monitoring, Alabama Parenting Scale	N/A	3.66 (.79)

Self-report delinquency scale

The Self-Report Delinquency Scale (SRD; Elliott, Ageton, Huizinga, Knowles, & Canter, 1983; Elliott, Huizinga, & Ageton, 1985) taps covert and overt antisocial behavior. Its 47 items ask respondents about how many times he/she has committed a specific overt or covert offense within the last 90 days. Huizinga and Elliott (1986) provided good evidence for validity based on comparisons of SRD scores and arrest records. Scoring was based on Rasch analyses (Chapman, personal communication, 2010), due to the skewed distribution of the summed SRD scores. Specifically, the item scores were dichotomized and the numbers of items endorsed were summed. Internal consistency of the SRD was .89 at both T1 and T4.

Therapist perception of treatment outcome – Youth antisocial behavior (TPTO –YAB)

The TPTO – YAB (Crandal et al., 2015) examines therapist judgments of treatment success. Therapists rate 14 items regarding youth problem behaviors and caregiver involvement, parenting, and attitudes toward the youth on a 1–6 Likert scale. The 1–6 scale was collapsed to a 1–5 scale (by combining "slightly agree" and "slightly disagree" ratings) based on outcome of Rasch analyses (see Crandal et al., 2015; for details) and scores for the 14 items were averaged. TPTO scores correlate significantly with SRD and CBCL scores, supporting the validity of these scores (Crandal et al., 2015). The T4 TPTO scores for participants in the present analyses showed excellent internal consistency ($\alpha = .96$).

Case discharge summary (CDS)

The CDS assessed successful versus unsuccessful termination (Schoenwald, Sheidow, Letourneau, & Liao, 2003). Therapists completed two termination questions on the CDS: the reason termination occurred and who made the decision to terminate. Families who met treatment goals and terminated treatment based on agreement between the therapist and the family were designated as a termination success; others were classified as nonsuccess. The CDS has been associated with validation measures (e.g., therapist adherence during treatment) in anticipated directions (Schoenwald et al., 2003). Among all families who completed T4 assessments, termination success was not significantly related to T4 youth SRD scores, but correlated significantly with T4 CBCL externalizing behavior scores, $r = -.31$, $p < .001$, and T4 therapist TPTO scores, $r = .55$, $p < .001$.

Alabama parenting questionnaire (APQ)

The APQ (Frick, 1991) assesses parenting practices (e.g., monitoring/supervision, positive parenting techniques, inconsistent discipline). In this study, the caregiver and youth independently completed the APQ poor monitoring subscale at T1 and T4. Total scores were created by averaging the items; items were reverse-scored as needed so that high scores indicate higher levels of monitoring/supervision. Hawes and Dadds (2006) found good evidence for convergent validity of the parent report APQ subscales among youth diagnosed with Oppositional Defiant or Conduct Disorder. Internal consistencies (coefficient alphas) for monitoring/supervision subscales were .79 and .77 at T1, and .76 and .79 at T4 for caregivers and youth involved in the current analyses, respectively.

RESULTS

Preliminary Analyses

Because therapists treated more than one family, we first examined whether therapist nonindependence accounted for sufficient variance to require multilevel analyses using two-level intraclass correlations (ICCs) (families at Level 1 nested within therapists at

Level 2) for each outcome variable. Therapists' report of termination success and TPTO scores had ICCs above .15, indicating the need for multilevel analyses; all other ICCs were less than .03. Thus, multilevel regression analyses (using HLM v. 6.08) were used to examine termination success and TPTO scores, with hierarchical linear regressions (SPSS v. 19) used for the other outcome measures (Externalizing CBCL Score, SRD, APQ). The assumptions of normality and homoscedasticity of residuals for linear and HLM regressions were met. Analyses were run with and without potentially influential outliers included, with no meaningful differences found.

To identify potential statistical confounds, relationships between outcome and demographic variables (ethnicity, gender, age, ethnic match between the caregiver and therapist, family SES, receipt of financial assistance) were examined using ANOVAs and correlational analyses. Demographic variables that showed significant associations with the outcome variables were included in regression analyses as controls. These consisted of youth's age (negatively correlated with youths' and caregivers' perceptions of parental monitoring and the CBCL externalizing score, rs = −.16, −.21, and −.18, respectively, ps < .05); caregiver's age (positively correlated with youths' perceptions of parental monitoring, r = .18, p < .05), White youth ethnicity (TPTO scores were lower for White youth than for youth of other ethnicities, B = −5.71, SE = 2.89, p = .05); Latino caregiver ethnicity (log-transformed CBCL externalizing scores reported by Latino/a caregivers were lower than the scores reported by other caregivers; M = .86, SD = .53 and M = 1.08, SD = .42, respectively, t(151) = 2.34, p < .05); therapist age (TPTO scores were higher for older therapists, B = .52, SE = .20, p < .05); and receipt of financial assistance (caregivers' parental monitoring scores were higher at T4 for those who received financial assistance than for those who did not; M = 3.76, SD = .69, and M = 3.45, SD = .66, respectively, t (150) = 2.92, p < .01). Participant gender and ethnic match between the therapist and caregiver were not significantly associated with outcome variables. We also controlled for pretreatment levels of SRD and CBCL scores.

Missing data

Data were missing at T2 and T4 for various reasons. Some families (n = 26) terminated prior to T2. Families also missed assessments at T2 and T4 due to problems scheduling the family within the required assessment time period, a respondent declining the assessment, and occasional equipment failures. There were no significant differences in any demographic variables or pretreatment levels of outcome variables between (a) those who completed versus who did not complete TPTO or termination measures, and (b) those who missed versus provided assessments at T2. Families who missed the T4 assessment (n = 16) differed significantly from those who completed it on T1 externalizing scores (M = 8.27, SD = 8.09 and M = 23.04, SD = 13.23, respectively), t(162) = 3.65, p < .001; T1 parental monitoring scores reported by the caregivers (M = 4.03, SD = .46 and M = 3.59, SD = .62, respectively), t(162) = 2.31, p < .05; and by the youth (M = 4.10, SD = .54 and M = 3.52, SD = .76, respectively), t(160) = 2.50, p < .05, and youth ethnicity (more Latino youth missed the assessment, $\chi^2(1, N = 164) = 6.73$, p < .01).

Descriptive statistics for the study variables are presented in Table 1. On average, caregivers reported the strongest bonding with the therapist at both time points: More than half of the caregivers reported scores higher than 6 (WAI Bonding scores could range from 0 to 7). Respondents' T2 ratings of bonding were highly correlated with their T4 ratings (rs = .68, .58 and .56 for therapist, caregiver and youth, respectively; ps < .01). The caregivers' and youths' perceptions of their bonding with the therapist correlated weakly at T2 (r = .17, p < .05) and moderately at T4 (r = .37, p < .01). Therapists' reports of bonding did not correlate significantly with either caregiver or youth ratings of bonding at any time point (rs ranging from −.11 to −.01).

To control for Type I experimentwise error in multiple analyses, Benjamini–Hochberg (B-H; Benjamini & Hochberg, 1995) adjustments to alpha levels were used. With the B-H method, the investigator orders a set of findings from lowest to highest *p* values, then compares each value with a critical value set for that finding using the B-H formula (see Thissen, Steinberg, & Kuang, 2002, for formula). B-H corrections were applied to each set of related analyses (i.e., one set of corrections for correlations between caregiver WAI scores and outcomes, another for therapist WAI correlations, etc.). Results that met the conventional $p < .05$ level of significance are presented in the tables but only those that met the B-H critical alpha levels are discussed in the text.

Strength of Bond

Our first aim was to examine whether strength of bond predicted treatment outcomes. We conducted two-level hierarchical linear modeling analyses (HLM v. 6.08 software) predicting TPTO scores and therapists' report of termination success (CDS). We used the Bernoulli distribution model (Raudenbush & Bryk, 2002) for termination success (a binary outcome variable with a value of either zero or one), using unit-specific estimates. The TPTO model included control variables (White youth ethnicity and therapist's age). The CDS model had no control variables. Predictors were modeled as fixed effects and grand mean centered.

Regression analyses (SPSS) examined strength of each participant's reported bonding at T2 and T4 as predictors of CBCL externalizing scores, SRD scores, youths' and caregivers' perceptions of parental monitoring. The relevant bonding score and any controls were entered simultaneously. Results (Table 2) showed that stronger therapist-reported bond at both time points predicted more favorable therapist perception of overall family response to treatment (TPTO) and termination success ($p = .001$ for both time points, B-H critical value $p = .00138$). Strength of caregiver bond level significantly predicted only one outcome: Stronger T4 bond predicted more positive caregiver perception of parental monitoring at the end of treatment ($p = .001$, B-H critical value $p = .00138$). Several findings involving youth alliance reached conventional levels of significance but not the B-H threshold.

Bond Similarity

Our second goal was to explore whether similarities in bond predicted outcome, and whether any significant findings for similarities in bond could be explained by strength of bond reported by members of the dyad. We investigated similarities in caregiver-therapist bond with each other using three regression models:

Model 1: outcome variable = similarity index (caregiver, therapist) + control variables
Model 2: outcome variable = similarity index (caregiver, therapist) + caregiver bond strength (WAI score) + control variables
Model 3: outcome variable = similarity index (caregiver, therapist) + therapist bond strength + control variables

Thus, Model 1 estimated an effect of similarity in caregiver and therapist bond on outcome variables. Model 2 estimated its effect after controlling for caregiver level of bond and Model 3 estimated its effect after controlling for therapist level of bond. Separate models were run to disentangle the effects of strength of bond reported by different respondents. The same models were run for caregiver-youth similarity and levels of bond. Results are presented in Tables 3 and 4.

TABLE 2

Strength of Caregiver, Therapist, and Youth Bonding at Mid-treatment (T2) and Termination (T4) as Predictors of MST Outcomes

	Mid-treatment (T2) bonding			Termination (T4) bonding		
Outcome	**Caregiver**	**Therapist**	**Youth**	**Caregiver**	**Therapist**	**Youth**
TPTO	−.17* (.08)	.53*** (.09)	−.11 (.07)	−.03 (.09)	.68*** (.10)	−.18** (.06)
Termination Success	−.09 (.21)	1.03** (.28)	−.17 (.16)	.13 (.17)	1.08** (.33)	−.17 (.12)
CBCL Externalizing	−.03 (.04)	−.03 (.04)	−.06* (.03)	−.03 (.03)	−.04 (.03)	−.06* (.03)
SRD Delinquency	.54 (.40)	−.05 (.36)	−.32 (.26)	−.26 (.33)	.02 (.32)	−.37 (.25)
Monitoring (Y rept.)	−.03 (.08)	.11 (.06)	.12* (.05)	−.04 (.06)	.01 (.06)	.08 (.05)
Monitoring (CG rept.)	.12 (.07)	.01 (.05)	.06 (.04)	.15** (.05)	−.03 (.05)	.06 (.04)

Note. Numbers represent regression coefficients (unstandardized *B*s), controlling for relevant demographic variables. Standard errors in parentheses. Control variable results not presented here.
*$p < .05$.
**$p < .01$.
***$p < .001$.

TABLE 3

Caregiver-Therapist Bonding Similarity at Mid-treatment (T2) and Termination (T4) as Predictor of MST Outcomes Before and After Controlling for Strength of Bonding

	Mid-treatment (T2)			Termination (T4)		
	Model 1 similarity index	**Model 2 similarity index, controlling for CG bonding**	**Model 3 similarity index, controlling for Th bonding**	**Model 1 similarity index**	**Model 2 similarity index, controlling for CG bonding**	**Model 3 similarity index, controlling for Th bonding**
TPTO	.76* (.32)	.61* (.26)	−.31 (.38)	.98*** (.23)	1.05*** (.32)	−.06 (.16)
Termination success	2.14** (.71)	1.83* (.75)	.87 (.92)	1.79* (.75)	1.87* (.72)	.59 (.80)
CBCL Externalizing	−.12 (.11)	N/A	N/A	−.10 (.09)	N/A	N/A
SRD Delinquency	.28 (1.16)	N/A	N/A	.27 (.91)	N/A	N/A
Monitoring (Y rept.)	.13 (.20)	N/A	N/A	−.30 (.17)	N/A	N/A
Monitoring (CG rept.)	.20 (.17)	N/A	N/A	.12 (.14)	N/A	N/A

Note. Numbers represent regression coefficients (unstandardized *B*s), controlling for relevant demographic variables. Standard errors in parentheses. Control variable results not presented here.
*$p < .05$.
**$p < .01$.
***$p < .001$.

Similarity in caregiver and therapist bond at T2 predicted termination success ($p = .004$, B-H critical value $p = .0042$) but after controlling for either caregiver bond levels (Model 2) or therapist bond level (Model 3), this finding was no longer significant. Similarity in caregiver and therapist bond at T4 predicted TPTO scores ($p = .001$, B-H critical value $p = .0042$) (see Model 1, Table 3) and remained significant after controlling for caregiver bond levels (Model 2). However, after controlling for therapist bond level

(Model 3), this finding was no longer significant. Thus, the similarity finding was largely due to variations in therapist reports of the strength of the therapeutic alliance. Caregiver-youth similarity showed different patterns (Table 4). After the B-H correction (B-H critical value $p = .0042$) there were no significant associations between similarity in caregiver and youth bonding with therapist and any outcome variables.

DISCUSSION

This study extends the process and outcome research in family therapy by examining one component of therapeutic alliance—its relational aspect or perceived emotional connection between client and therapist in mid- and late treatment as a predictor of treatment outcomes. We analyzed strength of and balance in caregiver, youth, and therapist emotional bonds in a racially diverse sample of families who received MST services in community agencies.

On the basis of the literature on the importance of the relational component of alliance for treatment success, we hypothesized that stronger perception of bonding by all treatment participants would be related to the outcomes. Contrary to predictions, youth reports of the strength of their bond with the therapist were not significantly related to any outcome measures of this study. Caregivers' perception of bonding with the therapist at the end of treatment predicted only one outcome variable—improved parental monitoring (reported by the caregiver). Only therapists' perceptions of bond with the caregiver showed significant and consistent effects across time and were positively associated with treatment outcome, although only with those outcomes reported by the therapist: therapist evaluation of treatment success and successful termination by the end of treatment.

TABLE 4

Caregiver-Youth Bonding Similarity at Mid-treatment (T2) and Termination (T4) as Predictor of MST Outcomes Before and After Controlling for Strength of Bonding

	Mid-treatment (T2)			Termination (T4)		
	Model 1 similarity index	**Model 2 similarity index, controlling for CG bonding**	**Model 3 similarity index, controlling for Y bonding**	**Model 1 similarity index**	**Model 2 similarity index, controlling for CG bonding**	**Model 3 similarity index, controlling for Y bonding**
TPTO	.05 (.26)	N/A	N/A	.54* (.21)	.56* (.23)	.64** (.22)
Termination success	.78 (.66)	N/A	N/A	1.17* (.57)	1.10 (.59)	.92 (.61)
CBCL Externalizing	−.10 (.10)	N/A	N/A	.00 (.09)	N/A	N/A
SRD Delinquency	−1.17 (1.08)	N/A	N/A	.51 (.98)	N/A	N/A
Monitoring (Y rept.)	.02 (.21)	N/A	N/A	−.14 (.19)	N/A	N/A
Monitoring (CG rept.)	.16 (16)	N/A	N/A	−.09 (.16)	N/A	N/A

Note. Numbers represent regression coefficients (unstandardized *B*s), controlling for relevant demographic variables. Control variable results not presented here. Standard errors in parentheses.

*$p < .05$.

**$p < .01$.

These mixed associations between strength of bonds and outcome could be an indication that individual alliances may not tell the full story in the context of family based treatment, where multiple relationships may work synergistically to affect outcome. The second goal of our study was to examine this issue by exploring whether similarities in emotional bonds predicted treatment outcome over and above the levels of individual bonds. Different patterns emerged, depending on whether imbalances in the family versus therapeutic relationship were considered. In terms of the therapeutic relationship, caregiver-therapist agreement on strength of their bonds at both time points predicted therapist evaluation of treatment success and successful termination, but this was largely explained by therapists' level of alliance. Family alliance similarity (between caregiver and youth) had no significant associations with any outcome variables after controlling for number of analyses conducted.

Findings should be interpreted considering the nature of MST treatment as well as the study context and its methodology. Specifically, findings may be unique to MST, to the fact that many therapists in the study were relatively inexperienced, and to the fact we examined only one aspect of alliance, emotional bonding. Nonetheless, some findings were consistent with previous research on overall alliance (Friedlander et al., 2011; McLeod, 2011). This study results suggest that strength of and balance of emotional bonds relate to MST outcome in different ways, depending on the source of the report (therapist or family members).

One way in which MST differs from many other family models lies in its focus on the caregiver, with youth usually being less directly involved in treatment. Caregivers' perception of bonding with the therapist was associated with their perception of better parental monitoring. Improved parenting, including monitoring, is an established mediator of MST outcomes (e.g., Henggeler & Schaeffer, 2016; Henggeler et al., 2009; Huey et al., 2000). The fact that this association was found only at the end of treatment can be interpreted in two different ways. On the one hand, keeping emotional connection with the therapist through the challenges of treatment may serve as a foundation for changes in caregivers' behaviors by the end of treatment. Alternatively, the caregiver's sense of more trust and connection with the therapist can be a result of desired behavioral change (improved parenting) during treatment (DeRubeis, Brotman, & Gibbons, 2005). The lack of association between caregiver level of bond and other treatment outcome variables might have been a function of ceiling effects (and associated range restriction), as overall levels of caregiver bonding were quite high. This would be expected given MST's special emphasis on caregiver treatment engagement.

Findings involving youth bond strength and similarity with the caregiver seemed to support the idea that youth emotional bond with the therapist may not be particularly important in the MST process, as findings did not reach the B-H threshold for significance. We do not think this conclusion is warranted without additional research. Several results involving youth bonding were significant according to conventional standards but not when alpha corrections were applied. Although some of these were counterintuitive, several were consistent with previous literature, and may reflect small effects rather than chance findings.

While this study results did not support our hypotheses regarding the role of unbalanced family alliances in the mid and end of treatment in predicting outcome, they were consistent with findings of previous studies that the association of individual and family level alliances and outcome may be unique for different family treatments (Robbins et al., 2003, 2006, 2008). *Balance* in alliance may be more important in family therapies that work mostly in a conjoint format (BSFT, FFT), whereas the *strength* of alliance is more important in treatments that use individual and conjoint formats such as MDFT (Robbins et al., 2008) and MST. It is also possible that unbalance in family members' alliances with

the therapist is more important for retention in the beginning of family therapy than later in treatment. Unfortunately, we did not collect T1 alliance data from caregivers and youths, so we could not examine whether patterns differed in our sample from the beginning to middle of treatment. In addition, in Robbins and colleagues' studies (2003, 2006, 2008) alliance was measured using observational instruments whereas we used self-reports. Finally, we measured only one aspect of alliance—bonding—and findings may differ from those of others because of our narrow focus on this single aspect of the broader construct.

Although results showed a limited association between self-reported family members' emotional connection with the therapist and treatment outcome, therapists' perceptions of bond with the caregiver in mid- and late treatment showed highly significant associations with treatment outcome evaluated by the therapist. These results accord with Granic et al.'s (2012) findings that therapists' (but not mothers') perceptions of alliance in MST predicted lower levels of therapist-rated externalizing behaviors at posttreatment. Both sets of findings could be a function of shared method/informant variance. The fact that T2 and T4 assessments were separated in time makes transient bias (such as a global judgment that affected all ratings at a particular time point) less likely, however. Alternatively, analyses of measures of symptoms and parenting controlled for pretreatment levels of these variables, and thus evaluated their change over time, not solely how the youth or family was functioning at termination. In contrast, therapist reports captured how well the family was functioning at termination regardless of the pretreatment level. Perhaps alliance relates in different ways to change versus overall levels of functioning at termination.

Alternatively, therapists may be more willing than caregivers to report problems in the therapeutic bond. In this study, as in Granic et al.'s (2012), therapist and caregiver reports did not correlate significantly, indicating that caregivers and therapists view the strength of the therapeutic bond differently, and caregivers reported higher levels of bonding generally than did therapists. Future research using observational measures of alliance collected in mid-treatment could help to clarify these findings.

Another possibility is that therapists who perceived more connection with the caregiver in the middle of treatment may have been more engaged and hopeful in treatment and perceived more progress in the family. This can be especially relevant to novice therapists such as those providers in this study. However, whether positive views of the relationship are the cause or effect of family improvement cannot be determined from the analyses here. Several recent studies (e.g., Zilcha-Mano et al., 2015) demonstrated that therapists' reports of alliance had limited association with outcome after controlling for prior symptomatic change, suggesting that perhaps therapist views of alliance become more positive as clients improve rather than the reverse.

There are other possible explanations of the findings of limited associations of relational component of alliance and treatment outcome. Some have proposed that therapeutic alliance in family based treatment goes beyond family members' individual relationships with the therapist and their similarities or differences. Systemic alliance includes multiple systems interactions (Sexton & Datchi, 2014) such as "group-therapist" (the client's perception of "therapist and us" relationship) and "within-system" (the clients' perception of alliance between family members) alliances (Pinsof, 1994; Pinsof, Zinbarg, & Knobloch-Fedders, 2008). These aspects of alliance, as well as aspects of safety within the therapeutic system and family shared sense of purpose (see more in Friedlander et al., 2011), may play important roles in family treatment of adolescent risk behaviors, but were not assessed in this study. Another explanation may be that bonding (emotional connection) with a therapist is a necessary, but not sufficient condition, for outcome achievement in MST. Alternatively, bonding may impact outcome indirectly through other processes.

Some have recommended studying alliance components (tasks/goals and bond) separately (Karver et al., 2006). We studied just one component, emotional connection, in isolation, a limitation of the study. In part we focused on bonding because aspects of alliance related to establishing joint agreement on goals is part of MST adherence, and we did not want to confound adherence with the task and goal orientation aspects of alliance. Nonetheless, the absence of a more complete assessment of alliance did not allow us to examine how this bonding might work together with the other components of alliance. In a study of simultaneous associations of two alliance components and outcome in adult individual cognitive therapy, Webb et al. (2011) found that therapist-patient agreement on the tasks and goals of therapy predicted symptom reduction while therapist-patient bond did not and, moreover, was predicted by the prior symptom change. More research is needed to explore the nuances of the interplay between different aspects of alliances and their associations with outcome in family based treatments.

The present findings may also have implications for debates about whether a set of "common factors" might underlie successful family therapy, regardless of specific treatment model. A common factors approach emphasizes the overall importance of the therapeutic alliance, whereas a treatment-specific (i.e., specific effects) hypothesis would suggest that the strength of alliance or agreement on alliance among family therapy participants may function idiosyncratically depending on the type of family therapy treatment under investigation. Findings of this study support the idea that type of treatment may be important to consider when investigating the alliance-outcome association in family therapy (Friedlander et al., 2011; McLeod, 2011; Sexton & Datchi, 2014). Previous research on balances in alliance in family based treatments of youth with externalizing behaviors suggests different mechanisms of operation in different therapies: Balance in alliance may be particularly important in treatments that use principally conjoint formats, whereas strength is important when the family treatment involves some individual sessions as well (Robbins et al., 2008). MST uses a combination of individual and conjoint sessions, with most sessions including only the therapist and caregiver. Both individual levels and balances in emotional component of alliance were related to treatment success and outcome in MST, but the associations depended on the source of the report (therapist or family members).

As with all studies, these results should be interpreted with caution. We used archival data from a study that was not designed as a treatment process study per se. For this reason, as noted earlier, we did not have a measure of the varied components of alliance (e.g., task, goals), therapist perception of alliance with youth, more systemic measures of family alliance, or observational measures of alliance. Nor did we have measures of alliance from all participants early in treatment, which would have provided interesting information on how the relationship between emotional component of alliance and outcome evolves over time. In addition, findings warrant replication, especially in light of the number of analyses conducted.

This study has limits to external validity as well. We only studied a single treatment model that was implemented under conditions designed to promoted fidelity in the community. The study also included many novice therapists, and results might not generalize to therapists with more MST and family therapy experience. Most caregivers reported high bonding, so results may not generalize to situations in which caregivers are less engaged in treatment.

The results of this study, particularly those that were consistent with others' findings, have several clinical implications. First, therapist perception of emotional bond with the caregiver in mid- and late treatment positively predicts how the therapist later views the success of treatment in the context of MST. As such, clinical supervision should entail reviewing therapist perception of family alliance, especially during mid-treatment when

the demands of treatment are at their peak. Therapist perception of a weaker bond with a caregiver may indicate impeded progress in treatment. Those cases should receive special attention of supervisors and therapists, including observations of sessions and development of strategies to increase a connection between therapist and client. This recommendation may be particularly relevant for training novice therapists, more often than not the ones found in community-based settings in a real-world practice. Second, our findings and those of others support the suggestions that clinicians and supervisors attend to possible imbalances in the family members' alliance with the therapist and try to resolve them by the end of treatment, as well as assessing clients' perceived emotional connection with the therapist. Because MST primarily focuses on caregiver alliance, lack of treatment progress during mid-treatment may suggest that therapists and supervisors take a closer look at youth alliance, and if such alliance is lacking, focus on increasing youth alliance (i.e., a balanced alliance). This is especially true in families where youth are "in control" and who may actively work at undermining a treatment like MST that focuses on empowering parents to improve structure and limit setting. Third, therapists should evaluate their own perceptions of their emotional connection with family members, especially with caregivers, and when that connection wanes, seek additional supervisory support. In the context of working with populations that have historically been seen as difficult to treat (e.g., substance abusers, serious and chronic delinquents), this would suggest that supervisors help therapists develop strategies to address their own reactivity or emotional vulnerabilities with particular clients, especially when treatment is not progressing as expected.

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