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Child–therapist alliance and clinical outcomes in cognitive behavioral therapy for child anxiety disorders

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Background: Few studies have examined the link between child–therapist alliance and outcome in manual-guided cognitive behavioral therapy (CBT) for children diagnosed with anxiety disorders. This study sought to clarify the nature and strength of this relation. **Methods:** The Therapy Process Observational Coding System for Child Psychotherapy – Alliance scale (TPOCS-A; McLeod, 2005) was used to assess the quality of the child–therapist alliance. Coders independently rated 123 CBT therapy sessions conducted with 34 children (aged 6–13 years) diagnosed with anxiety disorders. Parents reported on children's symptomatology at pre- mid-, and post-treatment. **Results:** A stronger child–therapist alliance early in treatment predicted greater improvement in parent-reported outcomes at mid-treatment but not post-treatment. However, improvement in the child–therapist alliance over the course of treatment predicted better post-treatment outcomes. **Conclusions:** The quality of the child–therapist alliance assessed early in treatment may be differentially associated with symptom reduction at mid- and post-treatment. Results underscore the importance of assessing the relation between alliance and outcome over the course of therapy to clarify the role the child–therapist alliance plays in child psychotherapy. **Keywords:** Alliance, CBT, child anxiety disorders, therapy process.

Over the past two decades the child therapy field has generated efficacious interventions for children with anxiety disorders. The best-supported psychosocial intervention for child anxiety disorders at this time is cognitive-behavioral therapy (CBT) (Silverman, Pina, & Viswesvaran, 2008; Weisz, Jensen, & McLeod, 2005). Despite evidence that CBT for child anxiety is efficacious (e.g., Kendall et al., 1997; Wood, Piacentini, Southam-Gerow, Chu, & Sigman, 2006), not all children respond to CBT. Approximately 43.5% of children who receive CBT in controlled trials continue to meet diagnostic criteria for a primary anxiety disorder at post-treatment (Cartwright-Hatton, Roberts, Chitsabesan, Fothergill & Harrington, 2004). Unfortunately, relatively little is known about the treatment processes, such as the therapeutic alliance, that facilitate clinical improvement in CBT for child anxiety (Chu et al., 2004; Creed & Kendall, 2005; Kendall & Ollendick, 2004). This represents an important gap in the field, since identifying specific treatment processes that promote positive child outcomes is essential to understanding how to optimize the delivery and impact of CBT for child anxiety (Chu et al., 2004).

Researchers and clinicians alike suggest that the therapeutic alliance is a treatment process that warrants empirical attention in child therapy (Chu et al., 2004; Kendall & Ollendick, 2004). A therapist's ability to (a) cultivate a relationship with a child marked by warmth and (b) promote the child's participation in therapeutic activities is believed to be crucial to the success of child psychotherapy (McLeod & Weisz, 2005; Shirk & Saiz, 1992). These alliance dimensions, termed *bond* and *task*, are hypothesized to be important for treatment outcomes because children are more engaged in the process of therapy when these elements are present.

A strong child–therapist alliance (herein called *child alliance*) is also believed to be instrumental in promoting positive outcomes in CBT for children with anxiety disorders for at least two reasons. First, most CBT interventions emphasize skill-building, which relies upon active child involvement for success (Chu et al., 2004). Second, a strong child alliance is posited to facilitate exposure tasks, considered the active ingredient of CBT for child anxiety, since exposure tasks are challenging and emotionally demanding (Kendall & Ollendick, 2004). A child who feels connected to the therapist and motivated in the intervention program is presumably more likely to engage in both skill-building exercises and difficult exposure tasks, which in turn, may promote optimal clinical improvement. Thus, understanding the role of the child alliance in CBT for anxiety disorders may help researchers identify how to optimize the impact and delivery of CBT for youths with anxiety disorders.

Although the child alliance is hypothesized to play a facilitative role in CBT, a conclusive alliance–outcome link has not been established in CBT for childhood anxiety. In the adult psychotherapy literature, the therapeutic alliance is one of the most

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consistent predictors of successful psychotherapy outcome across theoretical orientations (Martin, Garske, & Davis, 2000). However, only a handful of studies have examined the alliance–outcome association in child psychotherapy (Karver, Handelsmen, Filds, Bickman, 2006). The strength of the alliance–outcome relation in the 10 studies conducted in the child psychotherapy literature was .21 (Karver et al., 2006), which is comparable to the correlation reported in the adult literature (weighted $r = .22$; Martin, Garske, & Davis, 2000). Although the alliance may account for a smaller proportion of outcome variance in comparison to therapeutic techniques (see McLeod & Weisz, 2005), these findings suggest that the alliance may play an important role in child therapy. Unfortunately, the role of the alliance in CBT for children with anxiety has yet to be clarified.

Only two studies have examined the association between some facet of the child alliance and outcome in psychotherapy for child anxiety disorders (see Kendall, 1994; Kendall et al., 1997), and neither found a significant association. Though no significant findings emerged, it is possible that restricted variability in the child-report alliance measure (ratings were all high) used in these studies precluded the detection of a significant association (Chu et al., 2004). Thus, the question of whether the child alliance predicts clinical outcomes in CBT for anxiety disorders remains open. Clearly, more research is needed to clarify the strength of the alliance–outcome association in CBT for child anxiety disorders.

In this report, we address the question of whether the child alliance predicts outcome in manual-guided CBT for children with anxiety disorders. To assess the alliance–outcome relation, we employed five methodological features intended to strengthen the interpretability of our findings. First, this study evaluated the alliance–outcome association in an efficacious intervention (see Shirk & Karver, 2003). Second, this study relied upon ratings of the child alliance by trained observers to minimize potential sources of measurement bias (e.g., demand characteristics) (McLeod & Weisz, 2005). Third, the child alliance was assessed during treatment rather than at post-treatment to help establish temporal precedence of the alliance and outcome variables (Feeley, DeRubeis, & Gelfand, 1999). Fourth, outcome was assessed at pre-, mid-, and post-treatment to examine the alliance–outcome association over the course of treatment. Fifth, alternative third-variable explanations that may account for the alliance–outcome relation were evaluated.

This study used the Therapy Process Observational Coding System for Child Psychotherapy – Alliance scale (TPOCS-A; McLeod, 2005; McLeod & Weisz, 2005) to assess child alliance among youth with anxiety disorders who received CBT as part of a randomized clinical trial (RCT; see Wood, Piacentini, Southam-Gerow, Chu, & Sigman, 2006). The TPOCS-A is based on independent evaluators' ratings of actual therapy sessions and has been found to have good psychometric properties in past studies (see McLeod & Weisz, 2005).

Method

Participants

Participants included 34 children and their families pulled from a larger RCT of 40 children comparing child-focused CBT (CCBT) and family-focused CBT (FCBT) for children with anxiety disorders (see Wood et al., 2006, for details of the sample). The 34 child participants (16 CCBT, 18 FCBT) met the following criteria: (a) availability of audible therapy tapes; (b) no missing data; and (c) child completed treatment. Six participants from the original sample were excluded (2 had no audible therapy tapes; 2 had missing data; 2 dropped out). This study was IRB approved. Parents provided written informed consent, and children gave written or verbal assent to participate in this study.

The 34 children (24 males, 10 females) averaged 9.74 years of age (SD = 2.14; range 6–13). Approximately 62% (61.8%) were Caucasian, 5.9% Latino, 2.9% Asian/Pacific Islander, 2.9% African American, and 26.5% mixed (e.g., Latino/Caucasian). Most parents had at least a 4-year college degree (66.7%), 15.1% had some college education, and 18.2% were high school graduates without college education. At intake, participants received a primary anxiety disorder diagnosis (separation anxiety disorder (SAD), $n = 15$, social phobia (SP), $n = 14$, generalized anxiety disorder (GAD), $n = 5$) on the basis of a semi-structured clinical interview conducted with the parent and child (see below). Annual family income was under $40,000 for 7.4%, $40,000 to $90,000 for 44.5%, and over $90,000 for 48.1%. Most (87.9%) families were intact; families had a mean of 1.72 ($SD = .34$) children.

Therapists. Eight clinical psychology doctoral students and one doctoral-level clinical psychologist delivered treatment (3 males, 6 females). Therapists ranged in age from 24 to 30 years ($M = 26.33$, $SD = 1.80$); 55.6% were Caucasian, 11.1% Latino, and 33.3% Asian/Pacific Islander. All therapists received training in CCBT and FCBT that involved reading the treatment manual, attending a workshop, and conducting a supervised training case. To help ensure treatment integrity, therapists attended weekly group supervision meetings.

Alliance coders. The coding team consisted of three undergraduate psychology students, one master's level student, and one doctoral student (1 male, 4 females). All coders were naive to treatment outcome and study hypotheses.

Summary of findings from the clinical trial

In the Wood et al. (2006) clinical trial, children were randomly assigned to CCBT and FCBT. At post-treatment, 10 of 19 (52.6%) CCBT treatment completers no longer met diagnostic criteria for an anxiety

disorder (i.e., SAD, SP, or GAD), whereas 15 of 19 (78.9%) FCBT treatment completers no longer met diagnostic criteria for an anxiety disorder.

Treatments

Children in both treatments received 12 to 16 sessions with each session lasting 60–80 minutes. Therapists in the CCBT condition followed a treatment manual (Kendall, Kane, Howard, & Siqueland, 1990). Treatment progressed through two phases: (a) skills training and (b) graded exposure. During the skills training phase, children learned techniques such as relaxation, reappraisal of the danger of feared situations, and self-reward. In the graded exposure phase, a hierarchy was created in which feared situations were ordered from least to most distressing. Children faced increasingly difficult tasks on the hierarchy and were rewarded as they completed these activities.

Therapists in the FCBT condition followed the Building Confidence treatment manual (Wood & McLeod, 2008). In FBCT, children progressed through the CCBT procedures described above, with the addition of parent training. In the parent training component, parents were taught communication techniques such as giving choices when children are indecisive, allowing children to struggle and learn by trial and error rather than take over for them, labeling children's emotional responses, and promoting children's acquisition of novel self-help skills.

In the present study, the CCBT and FCBT conditions did not differ in treatment dosage or fidelity. The number of sessions in the CCBT and FCBT groups was not significantly different (*Ms* = 14.25 and 14.94, *SDs* = 1.34 and 1.16, respectively; t (32) = 1.62, *ns*). Wood and colleagues (2006) assessed treatment fidelity for CCBT and FCBT and found that the therapists adhered to the respective treatment manuals.

Child alliance measure

The Therapy Process Observational Coding System for Child Psychotherapy – Alliance Scale (TPOCS-A; McLeod, 2005) was used to measure the quality of the child alliance. The TPOCS-A consists of 6 items that assess affective elements of the client–therapist relationship (e.g., 'to what extent does the client demonstrate positive affect toward therapist'), and 3 items that assess client participation in therapeutic activities ('to what extent does the client not comply with tasks'). Coders listen to entire therapy sessions and then rate each item on a 6-point scale ranging from 0 (not at all) to 5 (a great deal). In a previous study that reported upon the development and validation of the TPOCS-A, the measure demonstrated adequate interrater reliability, internal consistency, and convergent validity (see McLeod & Weisz, 2005).

Assessment procedure

Children and their parents completed pre-, mid- (after session 7), and post-treatment assessments. The pre- and post-treatment assessments included diagnostic interviews and parent-report forms; the mid-treatment assessment entailed completing parent-report forms. The post-treatment assessment also included a parent-report consumer satisfaction questionnaire. Parents and children each received an honorarium for participating ($10 for the pre- and mid-treatment; $20 for post-treatment).

TPOCS-A scoring and session sampling procedures

To ensure that coders were properly trained and to minimize coder drift, the following procedures were employed to generate scores on the TPOCS-A.

Coder training. The coding team trained over a 3-month period. Training consisted of reading the TPOCS-A coding manual, attending training meetings, reviewing specific session segments, and practice coding. Coding commenced once coders met adequate pre-study reliability (ICC > .59; Cicchetti, 1994). Following Cicchetti (1994), ICCs below .40 reflect 'poor' agreement, ICCs from .40 to .59 reflect 'fair' agreement, ICCs from .60 to .74 reflect 'good' agreement, and ICCs .75 and higher reflect 'excellent' agreement. During coding, regular reliability assessments were performed and the results were discussed in weekly meetings to help minimize coder drift (Margolin et al., 1998).

Sampling of therapy sessions. Individual therapy sessions were randomly assigned to each coder. Sessions 2 and 4 were coded for the early treatment stage; sessions 8 and 10 were coded for the late treatment stage. When an audiotape from a session was not available, the subsequent or preceding session was used.

Scoring of therapy sessions. A total of 123 sessions were coded (65 for early and 58 for late). For early alliance, 31 participants had two coded sessions and three participants had one coded session. For late alliance, 27 participants had two coded sessions, 4 participants had one coded session, and 3 participants had no audible sessions. Each of the 123 therapy sessions was double coded. The five coders scored 51, 57, 57, 57, and 24 sessions respectively.

Other measures

Children's DSM-IV disorders were assessed using the Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent Versions (ADIS-C/P; Silverman & Albano, 1996), a semi-structured interview schedule with favorable psychometric properties (Silverman, Saavedra, & Pina, 2001; Wood, Piacentini, Bergman, McCracken, & Barrios, 2002). Trained clinical psychology graduate students naive to treatment condition conducted the interview. Child diagnoses were obtained through combined parent- and child-report.

Parents completed the parent-report version of the Multidimensional Anxiety Scale for Children (MASC; March, Parker, Sullivan, Stallings, & Conners, 1997; also see Wood et al., 2002), a 39-item, 4-point Likert-type scale assessing child anxiety with excellent psychometric properties. For the three assessments, the P-MASC alphas ranged from .79–.93. T-scores are not available for the P-MASC so raw scores were used for the analyses.

Parents also completed the Child Behavior Checklist (CBCL; Achenbach, 1991), a widely used and psychometrically sound measure. The 118 items assess symptoms across a broad range of clinical problems. CBCL raw scores are converted to T-scores. In the current investigation, the Internalizing scale was used.

Parents completed the Consumer Satisfaction Form (CPSAT; March, 1999) at the post-treatment assessment only. The CPSAT is an 11-item measure assessing parent reported satisfaction with the intervention. Items are scored on a Likert-type scale ranging from 1 to 7.

Data reduction

Each case contributed up to four alliance observations – two sessions 'early' in treatment and two sessions 'late' in treatment. From these observations, TPOCS-A scores were produced for 'early' alliance by calculating the mean score for sessions 2 and 4 (r = .67) from a case on each of the TPOCS-A items and then averaging together items to produce a score on the 6-point scale. A 'late' alliance score was produced by using the same procedure to combine sessions 8 and 10 (r = .41).[1] We calculated a single alliance score by averaging ratings from two or more sessions to produce a more reliable estimate than from only one observation (Kazdin, Whitley, & Marciano, 2006).

Early and late alliance scores were considered separately for two reasons. First, we used early alliance ratings to predict outcomes to minimize a potential confound between alliance scores and improvement in symptomatology over treatment (see Feeley et al., 1999; Shirk & Karver, 2003). Second, assessing early and late alliance allowed us to address a knowledge gap in the field – how alliance formation over the course of treatment affects child outcomes (Shirk & Karver, 2003). In each analysis, we used a single alliance score per case – either early alliance only or *shifts* in alliance over treatment (early alliance minus late alliance (change scores between alliance coded in the early and late stages of treatment)).

Data analysis

We adopted a six-step approach to data analysis. First, we calculated the interrater reliability for the TPOCS-A items in this sample using intraclass coefficients (ICC; Shrout & Fleiss, 1979). Second, independent samples t-tests were used to examine whether the treatment conditions differed in their impact upon child alliance. Third, a series of OLS regressions were used to examine whether early child alliance (mean TPOCS-A score for sessions 2 and 4) predicted mid- and post-treatment symptomatology (P-MASC, CBCL Internalizing scale), as well as post-treatment parent treatment satisfaction (CPSAT). Fourth, a series of OLS regressions were used to explore the effect of alliance formation during treatment on outcomes by regressing post-treatment outcomes (P-MASC, CBCL Internalizing scale) on *shifts* in the alliance as represented by change scores between early and late alliance (see *Data reduction,* above). Fifth, we attempted to rule out potential alternative explanations of the observed child alliance–outcome associations by testing the strength of the association between alliance scores and three client characteristics (child age, gender, and minority status) using product–moment correlations. Sixth, a series of OLS regressions were used to examine the direction of effects between child alliance and outcomes by regressing late child alliance on change in symptomatology (change scores between pre- and mid-treatment P-MASC and CBCL Internalizing scale scores). Last, in order to compare our findings to past meta-analytic findings, effect sizes for the alliance–outcome relation were estimated by calculating product–moment correlations between early alliance and mid- and post-treatment outcomes.

Results

See Table 1 for the descriptive data on the TPOCS-A and the primary outcome measures.

TPOCS-A psychometric properties

Interrater reliability for each TPOCS-A item was based upon the full sample of tapes (N = 123). In the present sample, interrater reliability (ICC) ranged from .49 to .85 (M = .71, SD = .13); 4 of the 9 items fell in the 'excellent' range, 3 items fell in the 'good' range, and 2 items fell in the 'fair' range (see Cicchetti, 1994).

Next, we assessed the internal consistency of the TPOCS-A early and late scores. The internal consistency was acceptable for the early (α = .92) and late (α = .91) TPOCS-A scale scores. In sum, the reliability of the TPOCS-A was acceptable.

Effect of treatment condition on child alliance

When comparing mean alliance scores for the CCBT and FCBT conditions, no significant differences in TPOCS-A early, t (32) = .32, *ns*, or late, t (29) = 1.19, *ns,* scale scores emerged between groups. These analyses indicate that the treatment groups did not exert a systematic impact upon the quality of the child alliance.

Child alliance–outcome analyses

To examine child alliance–outcome associations, we first examined relations between early child alliance and outcome assessed at mid- and post-treatment. For each OLS regression analysis, baseline measurement was entered with early alliance to control for initial severity, except for the treatment satisfaction analysis. Regression analyses predicting

[1]Because the correlation between session 8 and 10 was below .5 (r = .41), we took steps to assess whether averaging scores across sessions 8 and 10 influenced the alliance–outcome findings. Each analysis using the late alliance score was repeated with two change scores: (a) early alliance minus session 8 alliance, and (b) early alliance minus session 10 alliance. Using this approach, all of the alliance–outcome findings originally reported remained significant (all p-values < .05).

Table 1 Means and standard deviations for predictor and outcome measures

	Pre-treatment		Mid-treatment		Post-treatment	
Measure	*M*	*SD*	*M*	*SD*	*M*	*SD*
P-MASC	63.43	12.62	59.70	14.88	54.73	15.94
CBCL Internalizing	63.76	9.47	59.00	10.27	55.45	10.69
	Early TPOCS-A		Late TPOCS-A		Alliance Shift	
Whole sample	3.48	.79	3.41	.87	–.06	.75
CCBT	3.52	.70	3.59	.78	.03	.63
FCBT	3.43	.88	3.22	.91	–.14	.84

Note. Raw scores are reported for the P -MASC. *N* ranged from 33 to 34. P-MASC = Parent-report Multidimensional Anxiety Scale for Children. CBCL Internalizing = Child Behavior Checklist Internalizing Subscale. Early TPOCS-A = The Therapy Process Observational Coding System for Child Psychotherapy – Alliance scale for Sessions 2 and 4. Late TPOCS-A = The Therapy Process Observational Coding System for Child Psychotherapy – Alliance scale for Sessions 8 and 10. Alliance Shift = (Late TPOCS-A – Early TPOCS-A). CCBT = Child-Focused Cognitive Behavioral Therapy. FCBT = Family–Focused Cognitive Behavioral Therapy.

Table 2 OLS regression analyses for early alliance predicting mid- and post-treatment outcome

Variable	*B*	*SE B*	B	*t*	*p*<
Mid-treatment					
P-MASC					
Pre-treatment measurement	.78	.14	.66	5.52	.001
Early TPOCS-A	–6.53	2.24	–.35	–2.91	.01
CBCL Internalizing					
Pre-treatment measurement	.71	.15	.66	4.86	.001
Early TPOCS-A	–3.64	1.75	–.28	–2.08	.05
Post-treatment					
P-MASC					
Pre-treatment measurement	.5 8	.20	.49	2.91	.01
Early TPOCS-A	–4.35	3.14	–.22	–1.38	*ns*
CBCL Internalizing					
Pre-treatment measurement	.63	.17	.57	3.72	.01
Early TPOCS-A	–1.06	2.06	–.08	–.52	*ns*

Note. Raw scores are reported for the P-MASC. *N* ranged from 33 – 34 for each regression analysis. P-MASC = Parent-report Multidimensional Anxiety Scale for Children. CBCL Internalizing = Child Behavior Checklist Internalizing Subscale. Early TPOCS-A = The Therapy Process Observational Coding System for Child Psychotherapy – Alliance scale from Sessions 2 and 4.

outcome measures from early alliance are shown in Table 2. Early alliance was significantly related to mid-treatment scores on the P-MASC (β = –.37, p < .01) and the CBCL Internalizing scale (β = –.29, p < .05). At post-treatment, early alliance was significantly related to parent-reported treatment satisfaction (β = .35, p < .05), but no other significant relations were found. Taken together, these results suggest that a strong child alliance assessed early in treatment was associated with a reduction in symptomatology at mid-treatment, and treatment satisfaction at post-treatment.

As noted above in the *Data analysis* section, change scores between early and late alliance (early minus late) were calculated (i.e., were calculated to produce indices of *alliance shifts*). Change scores revealed a significant spread ranging from –1.39 to 1.50 with a mean overall alliance shift of –.06 (*SD* = .75).

Table 3 OLS regression analyses for alliance shifts predicting post-treatment outcome

Variable	*B*	*SE B*	β	*t*	*p*<
P-MASC					
Pre-treatment measurement	.62	.19	.52	3.20	.01
Alliance Shift	–2.42	3.46	–.14	–.70	*ns*
CBCL Internalizing					
Pre-treatment measurement	.54	.17	.47	3.10	.01
Alliance Shift	–4.80	2.14	–.34	–2.24	.05

Note. Raw scores are reported for the P- MASC. *N* = 30 for each regression analysis. P-MASC = Parent-report Multidimensional Anxiety Scale for Children. CBCL Internalizing = Child Behavior Checklist Internalizing Subscale.

OLS regressions predicting outcome from alliance shifts are shown in Table 3. At post-treatment, a positive alliance shift was significantly related to scores on the CBCL Internalizing scale (β = –.34, p < .05). However, no significant association emerged for post-treatment P-MASC scores. These results suggest that a positive shift improvement in the alliance during therapy from the early to late stages of therapy from the early to late stages of theraphy was related to a reduction in parent-reported internalizing symptomatology at post-treatment.

Examining alternate explanations

Given the correlational nature of our analyses, it is important to rule out alternate explanations of the significant alliance–outcome relations (Feeley et al., 1999). We examined whether a series of client or case characteristics acted as third variables. The client characteristics were (a) *age*: alliance formation may be more difficult for adolescents because, compared to children, it is developmentally appropriate for adolescents to express autonomy (DiGiuseppe, Linscott, & Jilton, 1996), (b) *gender*: child gender may act as a third variable because past research has suggested that girls derive a greater benefit from therapy (Weisz, Bahr, Han, Granger, & Morton, 1995), and (c) *minority status*: differences in

treatment goals and expectations between ethnic groups may hinder alliance formation for particular ethnic groups (Yeh, Eastman, & Cheung, 1994). To examine whether any of these factors acted as third variables we assessed whether they were associated with scores on the TPOCS-A. No significant correlations emerged between TPOCS-A scores and the client characteristics. Given the client characteristics were not significantly associated with the TPOCS-A scores, these variables were ruled out as potential confounds to the extent possible with our data.

Direction of effects

We evaluated the direction of effects linking alliance and outcome to better understand the role child alliance plays in CBT for anxiety disorders. Mid-treatment scores on the P-MASC and CBCL Internalizing measures were subtracted from pre-treatment scores to provide an index of symptom change in the first half of treatment. No significant findings emerged when late alliance was regressed on change in the outcome measure (e.g., pre-treatment CBCL – mid-treatment CBCL), suggesting that greater reduction in parent-reported symptomatology was not related with a stronger child alliance later in treatment.

Comparing the present findings with meta-analytic findings

To compare our findings to past meta-analytic findings (Martin et al., 2000; Karver et al., 2006), effect sizes (ES) for the alliance–outcome relation were estimated. ES estimates were produced by calculating product-moment correlation coefficients (r) between early alliance and mid- and post-treatment outcomes. The ES for mid-treatment was .27 (SD = .12, range .18 to .35) and post-treatment was .12 (SD = .14, range .02 to .22). These findings indicate that in the present study the alliance–outcome association at post-treatment is slightly weaker than ESs reported in prior research with children (r = .21; Karver et al., 2006) and adults (weighted r = .22; Martin et al., 2000).

Discussion

Although meta-analytic findings indicate a modest overall effect of the therapeutic alliance on symptom reduction in child psychotherapy, the strength of the child alliance–outcome association in CBT for child anxiety has not been established. The present study was designed to help clarify the nature and strength of this relation. Higher ratings of the child alliance, measured early in treatment, were associated with greater mid-treatment symptom reduction. Further, a positive shift in the child alliance from early to late stages of treatment was associated with greater internalizing symptom reduction at post-treatment. These findings have clinical and empirical implications.

The current study offers several possible insights about the nature and strength of the alliance–outcome association in CBT for child anxiety. The timing of outcome assessment seems to have some bearing on the strength of this relation. A strong child alliance assessed early in treatment predicted a significant reduction in child anxiety and internalizing symptoms at *mid-treatment* and treatment satisfaction at *post-treatment*. Interestingly, these findings are consistent with past studies of CBT that have found no relation between child alliance and *post-treatment* symptom reduction (see Kendall, 1994; Kendall et al., 1997). The alliance–outcome association reported in the current study (ES = .12) is similar to Kendall's two clinical trials (weighted r = .00, Kendall, 1994; weighted r = .12, Kendall et al. 1997; see Shirk & Karver, 2003). Some have suggested that restricted variability in alliance measures (a ceiling effect) may account for past null findings (e.g., Chu et al., 2004). However, despite variability in our alliance measure we found no significant relations between alliance and post-treatment outcomes. Converging evidence therefore suggests that the quality of the child alliance may not, in fact, predict post-treatment clinical outcomes in CBT for child anxiety.

Unlike previous studies, however, we also tested the relation between early child alliance and mid-treatment symptom reduction. On average the children experienced symptom improvement by mid-treatment – i.e., 50% of overall symptom reduction – indicating that a strong alliance developed early in treatment may contribute to meaningful symptom reduction by mid-treatment. Clinically, these findings suggest that therapists who develop a relationship with a child characterized by warmth and child participation in initial therapy sessions may help promote meaningful early symptom reduction in CBT for child anxiety.

This study also raises new questions about the nature of the child alliance–outcome association in CBT for child anxiety. A positive shift in the child alliance was related to improvement in internalizing symptoms at post-treatment. These findings parallel a prior research finding that increases in child involvement were significantly related with post-treatment clinical outcomes in CBT for child anxiety (Chu & Kendall, 2004). Together, these findings suggest that the trajectory of child alliance and involvement may play an instrumental role in promoting positive child outcomes in CBT for child anxiety.

A few limitations of the present study warrant attention. First, observational methods do not provide access to the child's perspective about the alliance, which may be more directly assessed with self-report measures. Second, although we attempted to address some potential third variables (i.e., age, gender, and minority status), this study cannot

rule out the possibility that other factors, such as therapist and/or other client characteristics, contributed to the alliance–outcome relations. Third, although FCBT and CCBT did not differ in the quality of the child alliance, it is plausible that the conditions may have differed on other treatment processes, such as the parent–therapist alliance (see McLeod & Weisz, 2005), that accounted for variation in outcomes. Fourth, because results were based solely upon parent report of child symptomatology, future studies might examine whether similar findings emerge for outcomes assessed from multiple perspectives (e.g., child, parent). Fifth, given that the present sample was comprised of children diagnosed with anxiety disorders receiving CBT, these findings might not generalize to other disorders or treatment approaches. Finally, the small sample size may have limited the ability to find convergent results for all of our analyses.

Despite these limitations, the current investigation has multiple strengths. The present study used interventions with established efficacy to study the child alliance and employed a validated observational measure rated by independent evaluators. Additionally, clinical outcomes were assessed at multiple time points (e.g., mid- and post-treatment), attempts were made to rule out possible third variables accounting for the alliance–outcome relations, and the direction of effects were investigated. These method features helped reduce reporter bias and minimize the chances of alternative explanations accounting for the findings.

Conclusions

This study contributes to a growing area of inquiry on the treatment processes that can enhance the impact of child psychotherapy. These findings suggest that although the child alliance may play a facilitative role in CBT for child anxiety, the alliance–outcome association may be weaker in CBT for child anxiety compared to treatments for other child emotional and behavioral problems. Our findings indicate that efforts to clarify the nature of the alliance–outcome association in CBT for child anxiety would benefit from evaluating how treatment processes develop and unfold over time. Evaluating treatment processes and outcomes at one time point may not adequately capture how these factors influence the process and outcome of CBT for child anxiety disorders. To help clarify this relation, future studies will need to assess both factors multiple times throughout treatment.

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References

Achenbach, T.M. (1991). *Manual for the Child Behavior Checklist 4–18 and 1991 Profile*. Burlington, VT: University of Vermont Department of Psychiatry.

Cartwright-Hatton, S., Roberts, C., Chitsabesan, P., Fothergill, C., & Harrington, R. (2004). Systematic review of the efficacy of cognitive behaviour therapies for childhood and adolescent anxiety disorders. *British Journal of Clinical Psychology*, *43*, 421–436.

Cicchetti, D.V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment*, *6*, 284–290.

Chu, B.C., Choudhury, M.S., Shortt, A.L., Pincus, D.B., Creed, T.A., & Kendall, P.C. (2004). Alliance, technology and outcome in the treatment of anxious youth. *Cognitive and Behavioral Practice*, *11*, 44–55.

Chu, B.C., & Kendall, P.C. (2004). Positive association of child involvement and treatment outcome within a manual-based cognitive behavioral treatment for children with anxiety. *Journal of Consulting and Clinical Psychology*, *72*, 821–829.

Creed, T.A., & Kendall, P.C. (2005). Therapist alliance-building behavior within a cognitive-behavioral treatment for anxiety in youth. *Journal of Consulting and Clinical Psychology*, *73*, 498–505.

DiGiuseppe, R., Linscott, J., & Jilton, R. (1996). Developing the therapeutic alliance in child–adolescent psychotherapy. *Applied and Preventive Psychology*, *5*, 85–100.

Feeley, M., DeRubeis, R.J., & Gelfand, L. (1999). The temporal relation of adherence and alliance to symptom change in cognitive therapy for depression. *Journal of Consulting and Clinical Psychology*, *67*, 578–582.

Karver, M.S., Handelsman, J.B., Fields, S., & Bickman, L. (2006). Meta-analysis of therapeutic relationship variables in youth and family therapy: The evidence for different relationship variables in the child and adolescent treatment outcome literature. *Clinical Psychology Review*, *26*, 50–65.

Kazdin, A.E., Whitley, M., & Marciano, P.L. (2006). Child–therapist and parent–therapist alliance and therapeutic change in the treatment of children referred for oppositional, aggressive, and antisocial behavior. *Journal of Child Psychology and Psychiatry*, *47*, 436–445.

Kendall, P.C. (1994). Treating anxiety disorders in children: Results of a randomized clinical trial. *Journal of Consulting and Clinical Psychology*, *62*, 100–110.

Kendall, P.C., Flannery-Schroeder, E., Panichelli-Mindel, S.M., Southam-Gerow, M., Henin, A., & Warman, M. (1997). Therapy for youths with anxiety disorders: A second randomized clinical trial. *Journal of Consulting and Clinical Psychology*, *65*, 366–380.

Kendall, P.C., Kane, M., Howard, B., & Siqueland, L. (1990). *Cognitive-behavioral treatment of anxious children: Treatment manual*. Ardmore, PA: Workbook Publishing.

Kendall, P.C., & Ollendick, T.H. (2004). Setting the research and practice agenda for anxiety in children and adolescence: A topic comes of age. *Cognitive and Behavioral Practice*, *11*, 65–74.

March, J.S. (1999). *Consumer Satisfaction scale*. Unpublished scale developed at Duke University.

March, J.S., Parker, J.D.A., Sullivan, K., Stallings, P., & Conners, K. (1997). The Multidimensional Anxiety Scale for Children (MASC): Factor structure, reliability, and validity. *Journal of the American Academy of Child and Adolescent Psychiatry*, *36*, 554–565.

Margolin, G., Oliver, P.H., Gordis, E.B., Elana, B., O'Hearn, H.G., Medina, A.M., Ghosh, C.M., & Morland, L. (1998). The nuts and bolts of behavioral observation of marital and family interaction. *Clinical Child and Family Psychology Review*, *1*, 195–213.

Martin, D.J., Garske, J.P., & Davis, M.K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, *68*, 438–450.

McLeod, B.D. (2005). *The Therapy Process Observational Coding System for Child Psychotherapy – Alliance Scales*. Richmond, VA: Virginia Commonwealth University.

McLeod, B.D., & Weisz, J.R. (2005). The Therapy Process Observational Coding System – Alliance Scale: Measure characteristics and prediction of outcome in usual clinical practice. *Journal of Consulting and Clinical Psychology*, *73*, 323–333.

Shirk, S.R., & Karver, M. (2003). Prediction of treatment outcome from relationship variables in child and adolescent psychotherapy: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, *71*, 452–464.

Shirk, S.R., & Saiz, C.C. (1992). Clinical, empirical, and developmental perspectives on the therapeutic relationship in child psychotherapy. *Development and Psychopathology*, *4*, 713–728.

Shrout, P.E., & Fleiss, J.L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, *86*, 420–428.

Silverman, W.K., & Albano, A.M. (1996). *The Anxiety Disorders Interview Schedule for DSM IV-Child and Parent Versions*. San Antonio, TX: Graywind Publications.

Silverman, W.K., Pina, A.A., & Viswesvaran, C. (2008). Evidence-based psychosocial treatments for phobic and anxiety disorders in children and adolescents. *Journal of Clinical Child and Adolescent Psychology*, *37*, 62–104.

Silverman, W.K., Saavedra, L.M., & Pina, A.A. (2001). Test–retest reliability of anxiety symptoms and diagnoses with anxiety disorders interview schedule for DSM-IV: Child and parent versions. *Journal of the American Academy of Child and Adolescent Psychiatry*, *40*, 937–944.

Weisz, J.R., Bahr, B., Han, S.S., Granger, D.A., & Morton, T. (1995). Effects of psychotherapy with children and adolescents revisited: A meta-analysis of treatment outcome studies. *Psychological Bulletin*, *117*, 450–468.

Weisz, J.R., Jensen, A.L. & McLeod, B.D. (2005). Development and dissemination of child and adolescent psychotherapies: Milestones, methods, and a new deployment-focused model. In E.D. Hibbs & P.S. Jensen (Eds.), *Psychosocial treatments for child and adolescent disorders. Empirically based strategies for clinical practice* (pp. 9–39). Washington, DC: American Psychological Association.

Wood, J.J., & McLeod, B.D. (2008). *Child anxiety disorders: A family-based treatment manual for practitioners*. New York: Norton.

Wood, J.J., Piacentini, J.C., Bergman, R.L., McCracken, J., & Barrios, V. (2002). Concurrent validity of the anxiety disorders section of the Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent Versions. *Journal of Clinical Child and Adolescent Psychology*, *31*, 335–342.

Wood, J.J., Piacentini, J.C., Southam-Gerow, M., Chu, B.C., & Sigman, M. (2006). Family cognitive behavioral therapy for child anxiety disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, *45*, 314–321.

Yeh, M., Eastman, K., & Cheung, M.K. (1994). Children and adolescents in community health centers: Does the ethnicity or the language of the therapist matter? *Journal of Community Psychology*, *22*, 153–163.

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