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Relation of the alliance with outcomes in youth psychotherapy: A meta-analysis

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ABSTRACT

The goal of this meta-analytic review was to provide a reliable estimate of the alliance–outcome relation in youth psychotherapy. Previous meta-analyses focused upon the alliance–outcome association in youth and adult psychotherapy have produced effect size (ES) estimates above $r = .20$. In the current study, meta-analytic methods were applied to the largest study sample collected ($N = 38$) to date in the youth psychotherapy field and the mean weighted ES estimate was $r = .14$, which is smaller than previous estimates. The child- and parent-therapist alliances were not differentially associated with outcomes. However, the alliance–outcome association did vary across theoretical (i.e., child age, problem type, referral source, and mode of treatment) and methodological (i.e., source and timing of alliance assessment; domain, technology, and source of outcome assessment; single vs. multiple informants) variables. Existing client-, therapist-, and observer-report alliance measures evidenced adequate reliability; however, substantial variability exists in how the alliance is conceptualized and measured. Though the magnitude of the ES estimate raises questions about the role that the alliance may play in youth psychotherapy, the findings also suggest that the extant literature represents a heterogeneous group of studies whose effects vary according to theoretical and methodological factors. Addressing existing knowledge and measurement gaps in the field may therefore lead to a more robust estimate of the alliance–outcome association in youth psychotherapy.

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Researchers and clinicians both assert that the alliance — defined as the affective and collaborative aspects of the client–therapist relationship (Elvins & Green, 2008; Shirk & Saiz, 1992) — is a critical component of successful psychotherapy with youth and their families (Chu et al., 2004; Kazdin, Siegel, & Bass, 1990; Kendall & Ollendick, 2004; Shirk & Karver, 2003). Yet drawing general conclusions regarding the nature and strength of the alliance–outcome association in youth psychotherapy is difficult. Recent reviews of alliance research in the youth field have revealed that the literature is fairly sparse and not very programmatic (Elvins & Green, 2008; Karver, Handelsman, Fields, & Bickman, 2006; Shirk & Karver, 2003). As a result, the nature and strength of the alliance–outcome association remains an open question. This represents an important knowledge gap since identifying specific treatment processes linked with treatment effectiveness, such as the alliance, may promote understanding of how to optimize the delivery and impact of interventions for youth and their families (Chu et al., 2004; Kazdin, 2007).

The relational aspects of treatment have long been emphasized as critical elements of psychotherapy. Within this literature, the alliance has garnered much attention. However, over the years researchers have defined the alliance in many ways — e.g., therapeutic bond, therapeutic alliance, working alliance, and helping alliance (see Elvins and Green, 2008 for a review). Each term has carried a slightly different definition, so providing a precise definition of this construct is important. Bordin (1979) was the first to provide a definition of the alliance that could be applied across different theoretical orientations. He conceptualized the alliance as being comprised of three related, but distinct, dimensions: bond, tasks, and goals. *Bond* refers to the affective aspects of the client–therapist relationship. *Tasks* constitute agreement and participation in the activities of therapy. *Goals* represent the agreement between the client and therapist on goals of treatment. Presently, most definitions of the alliance in youth psychotherapy focus upon the affective and collaborative aspects of the client–therapist relationship outlined by Bordin (Elvins & Green, 2008). For this paper, *alliance* will be used unless distinctions among the alliance dimensions need to be made.

Research has established that the alliance is linked with clinical outcomes in adult psychotherapy. Indeed, hundreds of studies in the adult field have evaluated the alliance–outcome relation (Horvath & Bedi, 2002). Findings generated by this large, comprehensive body of research indicate that the quality of the client–therapist alliance is a consistent predictor of successful psychotherapy outcome across a variety of psychotherapy orientations and outcome measures (Horvath & Bedi, 2002; Martin, Garske, & Davis, 2000). In fact, based upon the accumulated evidence, Division 29 of the American Psychological Association concluded that the alliance represents an important component of evidence-based practice (Norcross, 2002a,b). The accumulated evidence in adult psychotherapy therefore suggests that the alliance is a common factor that helps promote positive clinical outcomes across therapeutic approaches.

Alliance research in youth psychotherapy has lagged behind the adult field. Until recently, most studies in the youth psychotherapy field had focused upon the broad category of the therapeutic relationship. The therapeutic relationship encompasses a wide range of variables including treatment involvement and therapist responsiveness (Shirk & Karver, 2003). In an important meta-analysis, Shirk and Karver (2003) reported on the relation between the therapeutic relationship and clinical outcomes in youth psychotherapy. The study set encompassed 23 studies; however, fewer than half of the studies ($n=9$) used measures specifically designed to assess the child and/or parent alliance. Across the 23 studies, the mean weighted effect size (ES) was $r=.22$, which is consistent with estimates of the alliance–outcome association produced in adult psychotherapy ($r=.26$, Horvath & Symonds, 1991, $r=.21$; Martin et al., 2000). However, because the 23 studies did not focus exclusively upon the alliance it is unclear whether this estimate is a function of the alliance or more general therapeutic relationship variables such as therapist empathy and child involvement in session.

In a more recent meta-analysis, Karver et al. (2006) addressed this limitation. Karver and colleagues again focused upon the relation between therapeutic relationship variables (e.g., empathy and alliance) and outcome in youth psychotherapy. The study set encompassed 49 studies; however, only 10 of the studies (i.e., one more than Shirk & Karver, 2003) reported upon the strength of the alliance–outcome association. Karver and colleagues produced a separate ES estimate for the 10 studies that focused upon the alliance–outcome association. The magnitude of the weighted mean ES ($r=.21$) was consistent with the ESs reported in adult psychotherapy (Horvath & Symonds, 1991; Martin et al., 2000). Thus, the preliminary evidence based upon a handful of studies suggests that the strength of the alliance–outcome association in youth psychotherapy may be comparable to the adult field.

Though these important reviews have produced encouraging results, there are at least two reasons why it is important to exercise caution when interpreting the findings. First, the ES estimates were based upon a handful of studies. Since estimates based upon small samples are more likely to produce aberrant ES estimates, caution is warranted when interpreting these findings. Second, substantial study-to-study differences exist across the studies in how the alliance is conceptualized and from whose perspective alliance (child, parent, therapist, and observer) is assessed (McLeod & Weisz, 2005). For example, only one measure was used in multiple studies (i.e., The Child's Perception of Therapeutic Relationship (CPTR); Kendall, 1994; Kendall et al., 1997). This variability in measurement makes comparing results across the studies difficult (Chu et al., 2004). Overall, the methodological variability, combined with the small number of studies, makes it hard to draw a firm conclusion about the strength of the alliance–outcome association in youth psychotherapy (Begg, 1994; Begg & Berlin, 1988). It therefore is unclear whether the alliance is a robust predictor of successful outcomes across orientations and outcome measures in child psychotherapy.

The time is ripe for a new meta-analytic synthesis of the alliance literature. Providing a reliable estimate of the alliance–outcome association in youth psychotherapy is an important goal for the field. A number of new studies have been published since the meta-analytic reviews (Karver et al., 2006; Shirk & Karver, 2003). Employing meta-analytic methods to synthesize the growing literature can provide a more precise estimate of the alliance–outcome association, and an opportunity to assess the extent to which methodological features influence the alliance–outcome association. Indeed, meta-analytic

methods can ascertain whether specific theoretical or methodological variables moderate the alliance–outcome association, which would inform theory development and provide direction for future research.

Beyond clarifying the strength of the alliance–outcome association, the field would also benefit from a critical review of how the alliance construct is defined and measured (Elvins & Green, 2008). The youth psychotherapy field has yet to coalesce around a common definition of the alliance (Shirk & Karver, 2003). There is little consensus regarding which alliance dimensions (e.g., bond, task, and goal) are relevant for youth psychotherapy (DiGiuseppe, Linscott, & Jilton, 1996; Shirk & Saiz, 1992). Moreover, some have asserted that the way in which the alliance is conceptualized may need to differ across the child-, parent, and family-based treatment modes represented in youth therapy (Friedlander et al., 2006). As a result, alliance measures used in youth therapy vary in the dimensions they are designed to assess (Elvins & Green, 2008; McLeod & Weisz, 2005; Shirk & Saiz, 1992). Using empirical findings to produce a common definition of the alliance in youth psychotherapy may benefit the field (Elvins & Green, 2008). Thus, a goal of the present study is to identify how alliance measures conceptualize the alliance and ascertain whether the dimensions are differentially associated with outcome.

The psychometric characteristics and qualities of the alliance measures in youth psychotherapy also warrant attention. The length, comprehensiveness, and focus of the measures developed to assess alliance have varied significantly. Many alliance measures used in youth psychotherapy represent downward extensions of adult measures (Elvins & Green, 2008). Moreover, the same measure is rarely used in multiple studies, which makes it difficult to assess the psychometric strength of particular measures (Elvins & Green, 2008; Shirk & Karver, 2003). As the field grows, it will be important for researchers to attend to the conceptual underpinnings and the psychometric properties of existing measures and identify measures with strong psychometric properties relevant to the study of the alliance in youth psychotherapy. Thus, another goal of the current review is to report upon the psychometric properties of existing alliance measures to facilitate this process.

In the present study, a meta-analysis of studies examining the linkage between alliance and outcomes in youth psychotherapy is conducted to provide a more definitive statement about the nature and strength of this association. The primary goal of the present study is to generate a reliable estimate of the alliance–outcome association in youth psychotherapy. Given the significance of the child– and parent–therapist alliance in youth psychotherapy, comparing their relative contribution to clinical outcomes is an important focus of these analyses. Another focus of the analyses is reporting upon how the alliance is conceptualized as well as the psychometric properties of the alliance measures being used in the field.

1. Method

1.1. Selection of studies

To identify relevant studies, the following methods were employed. First, a computer based information search covering up to March 2010 was conducted on (a) PsychInfo, (b) Medline, and (c) Dissertation Abstracts International. To identify relevant studies, the terms *alliance* and *therapeutic relationship* were crossed with *child* and *adolescent*. Second, relevant research reviews (e.g., Elvins & Green, 2008; Karver, Handelsman, Fields, & Bickman, 2005; Karver et al., 2006; Shirk & Karver, 2003) were used to initiate reference trails, and issues of journals (e.g., *Journal of Consulting and Clinical Psychology*, *Journal of Clinical Child and Adolescent Psychology*, *Journal of Child Psychology and Psychiatry*) dated 2005 and later that reported relevant studies were hand-searched to locate studies not yet incorporated into the electronic databases. These steps produced an initial pool of 3587 articles and 739 dissertations, which were reduced in a stepwise fashion using title, abstract, method section, and result section, to produce a pool of 38 studies that met inclusion requirements.

1.1.1. Inclusion/exclusion criteria

To ensure that the study findings were comparable to past meta-analyses the inclusion criteria were based upon those used by Horvath and Symonds (1991), Martin et al. (2000), and Shirk and Karver (2003). First, the study had to include a measure of the child and/or parent alliance (e.g., therapeutic alliance, working alliance, helping alliance, therapeutic bond, and alliance). Independent judges reviewed each study to determine if a measure was included that assessed one or more components of the alliance. In making this determination, judges read the description of the measure provided in the study or the actual measure in order to determine if the measure assessed the affective (i.e., bond) and/or collaborative (e.g., task and/or goal orientation) components of the alliance (see Elvins & Green, 2008). Though the child field has yet to settle upon a uniform definition of the alliance, Bordin's (1979) conceptualization underlies many of the measures used in the field (DiGiuseppe et al., 1996; Elvins & Green, 2008; Shirk & Saiz, 1992). Thus, the bond, task and goal dimensions were used to categorize alliance measures. Second, the relation between alliance and outcome (assessed at post-treatment) had to be tested statistically. Thus, studies that did not assess outcome at the end of treatment were excluded (e.g., Hawley & Garland, 2008). Third, the study had to be clinical and not analog. Fourth, the study had to include more than five participants. Fifth, the study had to include an intervention designed to alleviate psychological distress, reduce maladaptive behavior, or enhance adaptive behavior through counseling, structured or unstructured interaction, a training program, or a predetermined treatment plan. Thus, studies that focused upon participants presenting with a medical problem (e.g., asthma) were excluded (e.g., Gavin, Wamboldt, Sorokin, Levy, & Wamboldt, 1999; Glueckauf et al., 2002). Sixth, the study needed to be presented in English. Finally, the mean age of the child participants had to be below 19 years.

The inclusion criteria departed from previous meta-analyses in four ways. First, the current study focused exclusively upon the alliance, which differs from Shirk and Karver (2003) who focused upon the broader category of the therapeutic relationship. Second, the current study focused upon the alliance between a client (child or parent) and a single therapist (i.e., child–therapist alliance, parent–therapist alliance). This criteria differs from previous meta-analyses (i.e., Shirk & Karver, 2003) and was designed to exclude studies (a) that focused upon the alliance between multiple clients at once ("family–therapist" alliance) or clients and multiple therapists at once (e.g., Colson et al., 1991), or (b) in which the target therapist was not clearly defined (e.g., Florsheim, Shotorbani, Guest-Warnick, Barratt, & Hwang, 2000). Third, child- (e.g., Kendall, 1994), parent- (e.g., Kazdin, Marciano, & Whitley, 2005), and family-focused interventions (e.g., Pereira, Lock, & Oggins, 2006) were included. Fourth, alliance measures were not required to be administered prior to outcome measures. The third and fourth criteria facilitated comparisons with the two previous meta-analyses in youth psychotherapy (Karver et al., 2006; Shirk & Karver, 2003) since they utilized the same criteria; however, these criteria depart from those used in the adult psychotherapy literature (see Horvath & Symonds, 1991; Martin et al., 2000). Studies included in the meta-analysis are denoted with asterisks in the References section.

1.2. Coding of the studies

Each study was independently coded by two coders using a coding manual available from the author. Inter-coder agreement is reported below. Reliability was computed with Kappa for categorical codes and intraclass correlations coefficients (ICCs) for continuous codes. Final codes were determined via discussion during coding meetings. The following information was extracted from each study.

1.2.1. Study level codes

Information about the following variables was extracted from each study: (a) child age (ICC = 1.00), (b) child gender (percent male; ICC = .96), (c) child race/ethnicity (ICC = 1.00), and (d) referral source (recruited; clinic-referred; required via court/justice system; not reported; κ = .84).

1.2.2. Target problem

The following information regarding the target problem was recorded: (a) target problem for which the sample was selected and treated (externalizing, internalizing, substance abuse, eating disorders, and mixed problems; κ = 1.00), (b) method of assessment (diagnosis given for target problem: yes/no; κ = .60), and (c) reliability of assessment (standardized diagnostic assessment: yes/no; κ = .62).

1.2.3. Treatment characteristics

Studies were coded on the following treatment characteristics: (a) treatment dose (number of sessions (ICC = .98), number of weeks (ICC = .92)), (b) treatment integrity (pre-therapy training (yes/no; κ = .74); treatment manual (yes/no; κ = .87); adherence checks (yes/no; κ = .68)), (c) level of care (unknown, inpatient, residential, jail, outpatient, school, and community/home; κ = .78), (d) treatment type (behavioral/non-behavioral; κ = 1.00), (e) treatment mode (child-focused, family-focused, parent-focused, and multisystemic (e.g., multisystemic therapy and multi dimensional family therapy), combination (e.g., child- and parent-focused), not defined (e.g., usual clinical care; κ = .72)), and (f) therapist type (professionals, graduate students, and paraprofessionals; κ = .80).

1.2.4. Alliance measures

Each alliance measure was coded on the following categories: (a) alliance dimensions (bond, task, and goal; κ = .86)[1], (b) measurement technology (self-report, other-report, and behavioral observations; κ = .93); (c) source (child, parent, therapist, and observers; κ = 1.00), (d) subject of ratings (child alliance and parent alliance; κ = .96), (e) timing of alliance assessment (early, middle, late, averaged, and post-treatment; κ = .77), and (f) reliability information (type of reliability indices (e.g., alpha, ICC; κ = 1.00) and score; ICC = 1.00).

1.2.5. Outcome measures

Each outcome measure was coded on the following categories: (a) measure of target problem (yes/no; κ = .87), (b) domain (symptoms, child functioning, environmental impact of treatment, consumer satisfaction, engagement; κ = .90), (c) measurement technology (self-report, other-report, behavior counts, and life event data; κ = .94), (d) source (child, parent, sibling, peer, teacher, therapist, and other; κ = .86), and (e) subject (child, parent, sibling, peer, teacher, therapist, and other; κ = .88).

1.3. Meta-analytic method

Studies reported the relation between the alliance and outcome in terms of the Pearson's product-moment correlation (*r*) and mean difference between groups. Following Rosenthal (1994), the effect size (ES) *r* was used to express the association between alliance and outcome because it is easier to interpret compared to *d*-type ES indices. ES values were calculated for each association of interest within each study — separate ES values were calculated within each study for all pairings between each alliance measure and each outcome measure. If a study did not provide enough information to compute an ES the authors were contacted in an attempt to gain access to the data. If authors did not provide the data, ES values were derived from inferential statistics reported in the study, using procedures recommended by Rosenthal (1994). When such efforts failed the common, conservative strategy of assigning an ES of 0 was used (Pigott, 1994).

Once ES values were calculated within each study, data were analyzed across studies. One goal of these analyses was to obtain unbiased ES estimates. Each ES was weighted by the inverse of its variance (Shadish & Haddock, 1994). This approach is based upon the statistical principle that larger sample sizes produce more precise estimates of population parameters so higher weights are assigned to studies with larger sample sizes. This approach adjusts ES estimates for heterogeneity of variance across observations. Of note, positive correlations mean that a stronger alliance was associated with positive clinical outcomes (e.g., fewer symptoms and better functioning). The resulting ESs were interpreted following Cohen's (1988) guidelines: *r* is a "small" effect when at least .10, *r* is a "medium" effect when at least .24, and *r* is a "large" effect when at least .37. Another goal of the analyses was to examine the homogeneity of the ES estimates. The homogeneity estimate (*Q*) approximates a chi-square distribution with $k-1$ degrees of freedom (Hedges, 1994). A significant effect indicates that the variation may not be due to sampling error (i.e., that variation across weighted mean ESs is greater than chance) and that moderators may explain the variability. To ensure independence of observations, each study contributed only one ES to the study-level analysis by averaging across all alliance and outcome comparisons contained within each study.

Additional analyses were conducted to examine potential moderators of the association between alliance and outcome. To ensure independence of observations for the moderator analyses, each study was allowed to contribute only one ES to each moderator level by averaging across all alliance and outcome comparisons up to the level of analysis. Analyses were therefore performed at the most conservative level appropriate to each analysis such that tests used one ES per group (e.g., child alliance and parent alliance) from each study. These analyses, which used weighted ES estimates, first examined whether any theoretical variables moderated the alliance–outcome association. Then, analyses examined whether a series of methodological variables associated with the way in which alliance and outcome were measured moderated the alliance–outcome association. Because these variables were categorical, procedures analogous to analysis of variance (ANOVA) were used for the analyses — i.e., ES values were grouped according to each moderator to test for differences between the levels (Hedges, 1994). For these analyses, two homogeneity estimates were produced (Hedges, 1994); a between-groups Q (termed Q_b) was calculated to test for significant variability across groups (e.g., child alliance vs. parent alliance), and a within-group Q (termed Q_w) was calculated to test for significant variability within a group (e.g., variation within the child alliance category). For follow-up contrasts, standardized contrasts (*g*) were calculated from the difference in ES values (Hedges, 1994). The significance of each contrast was determined by first dividing the contrast value by the pooled variance, which produces a critical value equivalent to the chi-square distribution with one degree of freedom. The critical value for the contrasts was set at $p < .05$.

2. Results

2.1. Sample characteristics

Table 1 shows sample characteristics and ES values for the 31 studies (published in 30 articles) and seven dissertations that met inclusion criteria. The 38 studies, which included 45 different treatment groups, were completed between 1992 and 2009 with 30 studies completed after 2003. The studies included a total of 2800

[1] Bordin's conceptualization of the alliance (i.e., bond, task, and goals) was used to develop most alliance measures contained within the study set (see Elvins & Green 2008). As a result, the bond, task, and goal dimensions were used to categorize the dimensions assessed by each alliance measure. It is, however, important to note that although Bordin's dimensions were used to describe the alliance dimensions assessed by each alliance measure this does not mean that all the measures contained within the study set were designed to assess the working alliance.

Table 1
Reviewed studies, sample characteristics, methods of assessment, and study ES.

Study	Target problem	Mean age (years)	% male	Tx. type	Outcome domain	Alliance measure	Alliance rel.	n[a]	Mean *r*
Auerbach, May, Stevens, and Kiesler (2008)	Sub	15.76	90.50	ND	S,F	Working Alliance Inventory[b]	CT	36	−.02
Cavell, Elledge, Malcolm, Faith, and Hughes (2009)	Ext.	8.19	58.70	CO	S	Mentor Alliance Scale[b]	CT	75	−.03
Champion (1998)[c]	Mixed	8.50	57.89	ND	S	Child Therapy Bond Scale[b]	CT	19	.35
Chiu, McLeod, Har, and Wood (2009)[d]	Int.	9.74	70.58	C, CO	S,TS	Therapy Process Observational Coding System for Children — Alliance Scale[b]	CT	34	.13
Creed (2007)[c,d]	Int.	11.20	57.35	C	S	Therapeutic Alliance Scale for Children[b]	CT	68	.15
Darchuk (2007)[c]	Sub.	16.62	64.20	ND	S,F,E	Working Alliance Inventory[b]	CT	43	.06
Diamond et al. (2006)	Sub.	15.70	81.00	CO	S,E	Working Alliance Inventory[b]	CT	356	.06
Eltz, Shirk, and Sarlin (1995)	Mixed	15.00	34.21	ND	S	Penn Helping Alliance[b]	CT	38	.31
Faw, Hogue, Johnson, Diamond, and Liddle (2005)	Sub.	12.50	49.00	MS	S,EN,E	Adolescent Therapeutic Alliance Scale[b]	CT	51	.13
Flicker, Turner, Waldron, Brody, and Ozechowski (2008)[e]	Sub.	15.70	84.00	MS	E	Vanderbilt Therapeutic Alliance Scale — Revised[b,f]	CT	43	−.22
							PT	43	.10
Flicker et al. (2008)[g]	Sub.	15.70	84.00	MS	E	Vanderbilt Therapeutic Alliance Scale — Revised[b,f]	CT	43	.14
							PT	43	−.24
Harvey (2008)	Mixed	7.95	63.63	ND	S	Therapeutic Alliance[f]	PT	18	.52
Hawley and Weisz (2005)	Mixed	11.90	58.50	ND	S,TS,E	Therapeutic Alliance Scale for Children[b,f]	CT	65	.17
							PT	65	.21
Hintikka, Laukkanen, Marttunen, and Lehtonen (2006)	Mixed	15.60	36.00	ND	S,F,E	Working Alliance Inventory[b]	CT	45	.25
Hogue, Dauber, Stambaugh, Cecero, and Liddle (2006)[d]	Sub.	15.47	81.00	C, MS	S	Vanderbilt Therapeutic Alliance Scale — Revised[b,f]	CT	100	−.10
							PT	44	.11
Holmqvist, Hill, and Lang (2007)	Ext.	17.17	100.00	ND	S	Helping Alliance Ques.[b]	CT	34	.15
Karver et al. (2008)[d]	Int.	14.60	15.00	C,C	S	Alliance Observational Coding System[b]; Working Alliance Inventory[b]	CT	23	.09
Kaufman, Rohde, Seeley, Clarke, and Stice (2005)	Mixed	15.10	51.60	C,C	S,E	Working Alliance Inventory[b]	CT	93	.04
Kazdin et al. (2005)[d]	Ext.	7.20	74.59	C,P	S,TS,E	Therapeutic Alliance Scale for Children[b]; Working Alliance Inventory[f]	CT	75	.37
							PT	185	.21
Kazdin, Whitley, and Marciano (2006)	Ext.	9.60	75.32	CO	S	Therapeutic Alliance Scale for Children[b]; Working Alliance Inventory[f]	CT	77	.31
							PT	77	.26
Kazdin et al. (2006)	Ext.	7.00	75.68	CO	S	Working Alliance Inventory[f]	PT	218	.26
Kendall (1994)	Int.	11.00	52.00	C	S,E	Child's Perception of Therapeutic Relationship[b]	CT	47	.02
Kendall et al. (1997)	Int.	11.00	58.00	C	S,E	Child's Perception of Therapeutic Relationship[b]	CT	94	0
Kim (2007)[c]	Mixed	13.10	48.00	F	F	Relationship Rating Scale[b,f]	CT	18	−.20
							PT	22	.15
Liber et al. (2010)[d]	Int.	10.22	57.69	C,C	S	Therapy Process Observational Coding System for Children — Alliance Scale[b]	CT	48	.06
McLeod and Weisz (2005)	Int.	10.30	40.91	ND	S	Therapy Process Observational Coding System for Children — Alliance Scale[b,f]	CT	22	.21
							PT	21	.29
Pereira et al. (2006)	ED	15.10	9.00	F	S,E	Working Alliance Inventory Observer[b,f]	CT	28	.03
							PT	28	.05
Robbins, Turner, Alexander, and Perez (2003)	Sub.	15.00	58.82	MS	E	Vanderbilt Therapeutic Alliance Scale — Revised[b,f]	CT	34	−.04
							PT	34	−.38
Robbins et al. (2006)	Sub.	14.93	80.00	MS	E	Vanderbilt Therapeutic Alliance Scale — Revised[b,f]	CT	30	0
							PT	30	0
Robbins et al. (2008)	Sub.	15.46	70.96	MS	E	Vanderbilt Therapeutic Alliance Scale — Revised[b,f]	CT	23	.44
							PT	23	.22
Sarlin (1992)[c]	Mixed	14.91	37.50	ND	S,F	Penn Helping Alliance Ques.[b]; Penn Therapist Facilitating Behaviors Ques.[b]	CT	46	.21
Shelef et al. (2005)	Sub.	16.00	85.00	MS	S,E	Vanderbilt Therapeutic Alliance Scale — Revised[b,f]; Working Alliance Inventory[b]	CT	74	.11
							PT	71	.12
Shelef and Diamond (2008)	Sub.	16.00	85.00	MS	S,E	Vanderbilt Therapeutic Alliance Scale — Short Form[b,f]	CT	56	.12
							PT	56	.12
Shirk et al. (2008)[d]	Int.	15.80	33.33	C	S,E	Therapeutic Alliance Scale for Adolescents[b]	CT	50	.20
Smith (1999)[c]	Mixed	13.67	60.00	ND	S	Penn Helping Alliance Ques.[b]; Penn Therapist Facilitating Behaviors Ques.[b]	CT	55	.21
Tetzlaff et al. (2005)	Sub.	16.00	83.00	ND	S	Working Alliance Inventory[c]	CT	434	.12
Van Orman (1996)[c]	Mixed	14.50	47.00	F	S	Family Therapy Alliance Scale[b,f]	CT	26	.31
							PT	30	.08
Zaitsoff et al. (2008)[d]	ED	16.10	2.50	C,F	S	Helping Relationships Ques.[b]	CT	80	.00

Note. Positive ES values indicate that a strong alliance is associated with positive outcomes (e.g., fewer symptoms). Tx = Treatment; Rel. = Relationship; Ext. = Externalizing; Int. = Internalizing; Sub. = Substance abuse; ED = Eating disorders; Mixed = Mixed problems; C = Child-focused treatment; P = Parent-focused treatment; F = Family-focused treatment; MS = Multisystemic treatment; CO = Combination treatment; ND = Not defined treatment; S = Symptoms; TS = Treatment satisfaction; EN = Environmental impact; E = Engagement; F = Functioning; CT = Child–therapist alliance; PT = Parent–therapist alliance. Ques. = Questionnaire.

[a] Sample size reflects the number of participants included when computing effect sizes. As the number of participants sometimes varied across alliance and outcome measures, these sample sizes are averaged across all measures included.

[b] Measure used to assess child–therapist alliance.

[c] Indicates dissertation.

[d] One or more treatments contained in the study met the same criteria for inclusion (i.e., individual therapy, alliance measured prior to outcome) used in the adult psychotherapy meta-analyses (i.e., Horvath & Symonds, 1991; Martin et al., 2000).

[e] Flicker et al. (2008) reported findings for Caucasian sample.

[f] Measure used to assess parent–therapist alliance.

[g] Flicker et al. (2008) reported findings for Latino sample.

participants ($M = 73.68$, $SD = 87.48$; range 18–434), produced 274 correlations and 19 group-comparisons.

The mean age of the youth ranged from 7.00 to 17.17 years ($M = 13.30$, $SD = 3.02$), and the samples were comprised of approximately 59.80% ($SD = 22.70$) boys. Most studies reported the racial/ethnic composition of their sample ($n = 33$; 86.84%); on average, studies reported that their samples were comprised of 58.29% ($SD = 30.71$) Caucasian, 21.32% African American ($SD = 27.28$), and 12.35% ($SD = 24.97$) Latino American youth.

2.1.1. Type of patient

Most samples were either recruited to participate in the study ($N = 15$) or sought treatment ($N = 15$). A subset of the samples was required to participate in treatment by the court/judicial system ($N = 4$) or the referral source was not reported ($N = 4$). Approximately half of the youth included in the studies received psychotherapy in outpatient settings ($n = 18$). Youth also received services in community/home ($n = 3$), school ($n = 3$), inpatient ($n = 3$), residential ($n = 2$) and jail ($n = 1$) settings; nine studies did not report where the youth received treatment. Youth were selected and treated most often for substance abuse ($n = 13$), followed by mixed problems ($n = 10$), internalizing problems ($n = 8$), externalizing problems ($n = 5$), and eating disorders (i.e., anorexia nervosa or bulimia; $n = 2$). Twenty-six studies confirmed the presence of the target problem with a DSM diagnosis; 22 of these studies used standardized diagnostic procedures to determine the diagnosis.

2.1.2. Type of treatment

The studies evaluated a total of 45 different treatment groups. On average, treatment lasted 16.38 sessions ($SD = 8.21$; range 7.60–48.80) and spanned 21.74 weeks ($SD = 14.92$; range 5.00–64.00). Twenty treatments were classified as behavioral whereas the remaining 25 treatments were classified as non-behavioral. Most treatments were categorized as child-focused interventions ($n = 14$), or multisystemic interventions ($n = 9$). The remaining treatments were parent-focused ($n = 1$), family-focused ($n = 4$), combination ($n = 5$), or not defined ($n = 12$).

Studies reported taking the following steps to support treatment integrity: (a) training therapists prior to treatment ($n = 28$), (b) performing adherence checks ($n = 31$), and (c) utilizing a treatment manual ($n = 28$). A subset of the studies ($n = 19$) reported upon the level of therapist training. On average, these studies were comprised of 53.60% ($SD = 45.75$) clinical professionals, 35.96% ($SD = 44.97$) graduate students, 10.46% ($SD = 29.52$) researchers, and 4.41% ($SD = 18.19$) unknown training background.

2.2. Alliance measures

The study set included a variety of measures designed to assess the child and parent alliance. Twenty-three studies assessed one alliance relationship, 21 studies focused upon the child alliance and two studies focused upon the parent alliance. Fifteen studies assessed both the child and parent alliance.

2.2.1. Child alliance

Most studies used measures from the same family (e.g., the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989)) to assess the child alliance ($n = 34$), with two studies relying upon measures from different families. The most common measures used to assess the child alliance were the WAI ($n = 9$; Horvath & Greenberg, 1989), the Vanderbilt Therapeutic Alliance Scale — Revised (VTAS-R, $n = 8$; Diamond, Liddle, Hogue, & Dakof, 1999), the Therapeutic Alliance Scale for Children (TASC, $n = 6$; Shirk & Saiz, 1992), the Penn Alliance Scales (PENN, $n = 5$; Luborsky, 1976), the Therapy Process Observational Coding System for Child Psychotherapy — Alliance Scale (TPOCS-A, $n = 3$; McLeod & Weisz, 2005), and the Child Perception of the Therapeutic Relationship (CPTR,[2] $n = 2$; Kendall, 1994). Ten alliance measures were used in only one study. In all, 16 distinct measures were used to assess the child alliance; three assessed one alliance dimension (i.e., bond or task), three assessed two dimensions (i.e., bond and task), and 10 assessed all three dimensions (i.e., bond, task, and goal). Overall, these findings indicate that six alliance measures were used in multiple studies, and there appears to be little consistency in the dimensions assessed by the measures.

Regarding the measurement technology of the child alliance measures, 21 studies relied exclusively upon self-report measures and 12 studies relied solely upon observational measures. Only two studies used multiple methods to assess the child alliance (i.e., self- and observer-report). Regarding the informant for the child alliance measures, 10 studies relied exclusively upon the child and 12 studies relied exclusively upon observers. Fourteen studies relied upon two informants; 12 studies collected measures from the child and therapist, and two studies collected measures from child and observers. Finally, assessments of the child alliance were conducted early (52.80%), middle (5.60%), late (2.80%), and post (13.90%) treatment; 25.00% produced an "average" alliance score (e.g., averaged early and late alliance ratings).

2.2.2. Parent alliance

All of the studies relied upon measures from the same family to assess the parent alliance. Two measures were used in more than one study: the VTAS-R ($n = 8$), and the WAI ($n = 4$). Eight parent alliance measures were used in only one study. Ten different measures were used to assess the parent alliance; three of the measures assessed two alliance dimensions (bond and task), and seven measures assessed all three dimensions (bond, task, and goal). These findings suggest that parent alliance measures also vary in which alliance dimensions they are designed to assess.

Regarding the measurement technology of the parent alliance measures, seven studies relied exclusively upon self-report measures and 10 studies relied upon observational measures. Regarding the informant for the parent alliance measures, four studies relied solely upon the parent, 10 studies relied upon observers, and three studies relied upon two informants (parent and therapist). Finally, assessments of the parent alliance were conducted early (64.70%) and post-treatment (11.80%); 23.50% produced an "average" alliance score.

2.3. Outcome measures

Child outcomes were assessed using the following methods within the current study set (see Table 1). Regarding the domain of measurement, 22 studies focused upon one domain: (a) 16 studies focused exclusively upon symptoms, (b) one study focused solely upon functioning, and (c) five studies focused exclusively upon engagement (e.g., attendance). Ten studies assessed two domains: (a) eight studies examined symptoms and engagement, (b) two studies examined symptoms and functioning, and (c) one study examined symptoms and treatment satisfaction. Six studies examined three domains: (a) two studies examined symptoms, functioning, and engagement; (b) two studies examined symptoms, treatment satisfaction, and engagement; and (c) one study examined symptoms, environmental impact, and engagement. Only 22 studies (57.89%) included an outcome measure that assessed the target problem for which the youth were selected and treated.

[2] Though the title of the CPTR, the Child's Perception of the Therapeutic Relationship, suggests that the measure assesses the therapeutic relationship, the CPTR was considered an alliance measure for two reasons. First, Kendall and colleagues have described the CPTR as an alliance measure (see e.g., Chu et al. 2004). Second, the CPTR was described as an alliance measure in a recent review of the alliance literature conducted by Elvins and Green (2008).

2.4. Reliability information for the alliance measures

The sample reported a total of 85 reliability indices. Table 2 presents the reliability data from the study set. The overall reliability estimate based upon the 85 indices was $M = .82$ ($SD = .13$). These 85 reliability indices were separated according to the focus of the alliance measure (child vs. parent alliance) and the type of estimation method. The average reliability estimates for the child alliance measures were .89 ($SD = .07$; $n = 35$) for Cronbach's alpha, and .77 ($SD = .12$; $n = 12$) for interrater reliability. The average reliability estimate was .62 ($SD = .13$; $n = 8$) for test–retest, and the average number of days between assessments was 35.83 ($SD = 24.79$, range 12–84). The average reliability estimate for the parent alliance measures was .90 ($SD = .08$; $n = 13$) when Cronbach's alpha was used, and .74 ($SD = .13$; $n = 9$) when interrater reliability was used. The average reliability estimate was .73 ($SD = .08$; $n = 8$) when test–retest was used, and the average number of days between assessments was 36.00 ($SD = 27.71$, range 12–84). These numbers are consistent with those reported by Shirk and Karver (2003), except that the test–retest reliability is slightly lower.

The average reliability estimates were assessed next for the type of alliance rater — child, parent, therapist, and observer. For the child alliance, the average reliability estimate was .84 ($SD = .12$; $n = 16$) for child-report, .84 ($SD = .10$; $n = 10$) for therapist-report, and .80 ($SD = .15$; $n = 29$) for observer-report. For the parent alliance, the average reliability estimate was .80 ($SD = .10$; $n = 7$) for parent-report; .75 ($SD = .12$; $n = 4$) for therapist-report; and .83 ($SD = .13$; $n = 19$) for observer-report. These findings suggest that the reliability estimates were relatively uniform across reporters for the child and parent alliance measures.

As a final step, reliability estimates were produced for the child and parent alliance measures that were used in more than three studies (see Table 1). Five measures fell into this category: the WAI, the PENN, the TPOCS-A, the VTAS-R, and the TASC. Each measure had an overall average reliability score above .70. Thus, the measures that have been used in multiple studies demonstrate adequate reliability.

2.5. Overall relation of alliance and outcome

The overall weighted mean alliance–outcome ES was .14, reflecting a relation in which a stronger alliance was associated with positive outcomes, and the 95% confidence interval (CI) did not include zero (95% CI: .10–.18). Some 14.7% of the ES values were negative and 63.5% were positive. The homogeneity analysis was not significant indicating that moderating variables may not exist ($Q = 42.18$, $p = .25$). This ES estimate meets criteria for a small effect (see Cohen, 1988) and indicates that the alliance was associated with approximately 2% of the variance in outcomes.

The alliance–outcome ES estimate may represent a conservative estimate because the study set includes ESs that were reported as nonsignificant and thus (if authors provided no further information) coded as zero. The ESs that were coded as zero were therefore removed from the study set. With the zero ESs removed, the overall weighted ES estimate was .17 ($Q = 38.72$, $p = .23$). This ES estimate indicates that the inclusion of zero did not produce a conservative ES estimate.

Next, the weighted ES for the child and parent alliance was assessed to determine if the two relationships were differentially associated with outcome. The weighted mean ES for the child alliance ($n = 36$; ES = .12) and parent alliance ($n = 17$; ES = .15) was practically identical ($Q_b = .48$, $p = .48$). Homogeneity analyses for the child ($Q = 41.47$, $p = .21$) and parent ($Q = 16.69$, $p = .41$) alliance were non-significant. Each ES estimate meets criteria for a small effect (see Cohen, 1988) and indicates that child and parent alliances were associated with approximately 2% of the variance in outcomes.

Analyses revealed that the correlations that comprise the alliance–outcome ES estimate represented a homogeneous population. This indicates that there may not be sufficient variability to warrant follow up analyses investigating theoretical and methodological moderators. However, a non-significant homogeneity test does not guarantee that moderators do not exist within a study set (Rosenthal, 1995). Thus, a series of exploratory analyses examining potential moderators of the alliance–outcome association were run.

2.6. Substantive moderators

2.6.1. Patient characteristics

The moderating effects of child age and gender were examined. Samples were classified into child (mean age below 13) or adolescent (mean age 13 years or older) categories. Results indicated that the between-groups homogeneity statistic was significant ($Q_b = 6.95$, $p < .05$), revealing that the weighted mean ES for children (ES = .20) was significantly higher than the weighted mean ES for adolescents (ES = .10). The relation between child gender (percent male) and alliance was nonsignificant ($r = .06$, $p = .68$). However, the between-groups homogeneity statistic was significant for referral source, suggesting that the weighted mean ES varied according to whether samples were recruited (ES = .07), treatment seeking (ES = .27), mandated (ES = .06) or not reported (ES = .001). In the follow up contrasts, the treatment seeking category was significantly higher

Table 2
Reliability of the alliance measures.

Type	Cronbach's alpha			Interrater			Test–retest			Overall		
	Reliability	*n*	*SD*	Reliability	*n*	*SD*	Reliability	*n*	*SD*	Reliability	*n*	*SD*
Child–therapist alliance												
PENN	.92	1	.00							.92	1	.00
TASC	.88	9	.07				.68	6	.08	.80	15	.12
TPOCS-A	.93	3	.02	.70	3	.11	.46	2	.12	.73	8	.21
VTAS-R	.90	8	.07	.79	8	.13				.84	16	.12
WAI	.89	8	.09							.89	8	.09
Other	.85	5	.06	.79	2	.07				.83	7	.06
Overall	.89	34	.07	.77	13	.12	.62	8	.13	.82	55	.13
Parent–therapist alliance												
TASC	.81	1	.00				.82	1	.00	.80	2	.83
TPOCS-A	.89	1	.00	.61	1	.00	.88	1	.00	.79	3	.16
VTAS-R	.90	8	.09	.76	8	.13				.83	16	.13
WAI	.93	2	.00				.69	6	.02	.75	8	.11
Other	.92	1	.00							.92	1	.00
Overall	.90	13	.08	.74	9	.13	.73	8	.08	.81	30	.12

Note: PENN = Penn Helping Alliance Questionnaire; TASC = Therapeutic Alliance Scale for Children; TPOCS-A = Therapy Process Observational Coding System for Child Psychotherapy — Alliance Scale; VTAS-R = Vanderbilt Therapeutic Alliance Scale — Revised; WAI = Working Alliance Inventory.

than recruited ($g = .20$, $p < .001$), court ordered ($g = .21$, $p < .05$), and not reported ($g = .26$, $p < .05$). See Table 3.

Next, the moderating effect of problem type was examined (see Table 3). Results indicated that the between-groups homogeneity statistic was significant for problem type ($Q_b = 16.28$, $p < .01$), suggesting that the weighted mean ES varied according to whether internalizing (ES = .10), externalizing (ES = .22), substance abuse (ES = .07) or mixed (ES = .24) problems were targeted. In the follow up contrasts, the mixed problems category was significantly higher than internalizing ($g = .14$, $p < .05$) and substance abuse ($g = .17$, $p < .01$) problems. In addition, the weighted mean ES for externalizing problems was significantly higher than the ES for substance abuse ($g = .15$, $p < .05$). The next analysis investigated the effect of diagnostic status (i.e., target problem confirmed with a DSM diagnosis: yes/no), and the findings indicated that the between-groups homogeneity statistic was not significant ($Q_b = .42$, $p = .551$). Together, these findings suggest that some demographic and clinical characteristics influence the strength of the alliance–outcome association.

Table 3
Moderator analyses for substantive and methodological factors.

Moderator	Q_b	k	Weighted mean ES	Q_w
Substantive moderators				
Age	6.95*			
Children		14	.20	14.14
Adolescents		24	.10	17.77
Referral source	18.90**			
Recruited		15	$.07_a$	5.00
Treatment seeking		15	$.27_{a,b,c}$	6.48
Mandated by court		4	$.06_b$	.42
Not reported		4	$.001_c$	2.92
Problem type	16.28**			
Internalizing		8	$.10_a$	3.05
Externalizing		5	$.22_b$	4.41
Substance abuse		14	$.07_{b,c}$	8.08
Mixed		11	$.24_{a,c}$	8.68
Treatment mode	4.74*			
Individual based		21	.16	26.45
Family based		13	.05	6.79
Methodological moderators for alliance measurement				
Source	15.16**			
Child		24	$.14_a$	25.26
Parent		7	$.28_{a,b}$	3.16
Therapist		13	.18	11.37
Observer		14	$.06_b$	8.43
Timing of alliance measurement	14.69**			
Early		19	$.06_{a,b}$	8.34
Middle		2	.19	.12
Late		1	$.34_{a,c}$	
Average		10	$.20_{a,b,c}$	7.52
Post-treatment		6	.16	4.67
Methodological moderators for outcome measurement				
Outcome domain	16.66**			
Symptoms		32	$.13_a$	38.61
Functioning		5	$.21_b$	3.73
Environmental impact		1	$.14_c$	
Consumer satisfaction		3	$.36_{a,b,c}$	1.80
Engagement		19	.11	17.79
Measurement technology	9.44*			
Self-report		26	$.14_a$	29.51
Other-report		14	$.18_b$	17.74
Behavior counts		6	$.001_{a,b}$	3.91
Life event data		10	.09	4.05
Source	12.65**			
Child		26	.12	23.87
Parent		14	.17	12.99
Therapist		8	$.22_a$	10.36
Other		19	$.08_a$	16.98
Methodological moderator				
Single vs. multiple informant	7.15**			
Single informant		23	$.21_a$	22.53
Multiple informant		33	$.13_a$	39.43

Note. Categories with the same subscript denote significant differences. Q_b = homogeneity for test of variation across groups; k = number of correlations; Weighted mean ES = average corrected correlation; Q_w = test of variation within group of individual effects.
* $p < .05$.
** $p < .01$.

2.6.2. Treatment characteristics

The moderating effects of different treatment characteristics were examined. Findings revealed that the between-groups homogeneity statistic was not significant for treatment type ($Q_b = .37$, $p = .37$), treatment mode ($Q_b = 8.63$, $p = .19$), level of care ($Q_b = .21$, $p = .42$), or length of treatment ($r = .02$, $p = .90$). The results also indicated that the between-groups homogeneity statistic was not significant for the use of treatment manual ($Q_b = .48$, $p = .72$), pre-treatment therapist training ($Q_b = .02$, $p = .88$), or adherence checks ($Q_b = 1.08$, $p = .22$). The final analyses investigated whether therapist type moderated the alliance–outcome association. Studies that reported therapist type ($N = 19$) were placed into one of three categories (i.e., clinical professionals, graduate students, and researchers) if more than 50% of the therapists fell into a particular category. The between-groups homogeneity statistic was not significant ($Q_b = 1.66$, $p = .23$). Altogether, these findings suggest that the strength of the alliance–outcome association did not vary across different treatment characteristics.

2.7. Methodological moderators

2.7.1. Characteristics of alliance measurement

The moderating effects of the way in which the alliance was conceptualized and assessed were examined (see Table 3). The between-groups homogeneity statistic was not significant for the measurement technology of the alliance measures ($Q_b = 3.46$, $p = .08$). The weighted ES also did not significantly vary across alliance measures that assessed different bond, task, and goal dimensions ($Q_b = 6.91$, $p = .11$). Alliance source was, however, significant ($Q_b = 15.16$, $p < .01$) indicating that the weighted mean ES varied according to whether children (ES = .14), parents (ES = .28), therapists (ES = .18) or observers (ES = .06) reported on the alliance. Follow up contrasts revealed that parent-report was significantly higher than child ($g = .22$, $p < .01$) and observer ($g = .11$, $p < .01$) reports. The between groups homogeneity statistic was also significant for timing of the alliance assessment ($Q_b = 14.69$, $p < .001$), revealing that early (ES = .06), middle (ES = .19), late (ES = 34), post-treatment (ES = .16), and averaged (ES = .20) alliance assessments varied in strength. Follow up contrasts revealed that alliance measures that were collected late in treatment yielded significantly higher ES estimates than measures collected early in treatment ($g = .28$, $p < .01$) or averaged ratings ($g = .14$, $p < .01$). Averaged ratings were also significantly higher than ratings collected early in treatment ($g = .14$, $p < .01$). These findings suggest that the way in which alliance was assessed affected the magnitude of the alliance–outcome association.

2.7.2. Characteristics of outcome measurement

The moderating effects of the way in which outcome was assessed were examined (see Table 3). The between-groups homogeneity statistic was significant for outcome domain ($Q_b = 16.16$, $p < .01$), revealing that the weighted mean ES varied according to whether symptoms (ES = .13), functioning (ES = .21), environmental impact (ES = .14), consumer satisfaction (ES = .36), or engagement (ES = .11) was assessed. In the follow up contrasts, consumer satisfaction was significantly higher than the symptom ($g = .23$, $p < .01$), functioning ($g = .15$, $p < .05$), and environmental impact ($g = .22$, $p < .01$) domains.

Measurement technology was also significant ($Q_b = 9.44$, $p < .05$), indicating that the weighted mean ES differed according to whether self- (ES = .14), parent- (ES = .18), behavior counts (ES = .001) or life event data (ES = .09) were collected. Follow up contrasts indicated that self-report ($g = .14$, $p < .05$) and parent-report ($g = .18$, $p < .05$) were both significantly higher than behavior counts. Finally, results revealed that the between groups homogeneity statistic was significant for source ($Q_b = 12.65$, $p < .01$), suggesting that the weighted mean ES differed according to whether children (ES = .12), parents (ES = .17), therapists (ES = .22) or other (ES = .08) reported on outcomes. Follow up contrasts revealed that therapist-report was significantly higher than other-report ($g = .14$, $p < .05$). Overall, these findings indicate that the way in which outcome was assessed influenced the magnitude of the alliance–outcome association.

2.8. Single vs. multiple informant

The association between two questionnaire-based measures from the same source may yield inflated correlations due to shared variance. Studies were therefore placed into two categories: (a) single-informant (studies that relied upon one informant for alliance and outcome), and (b) multiple-informant (studies that relied upon different informants for alliance and outcome). Results indicated that the between-groups homogeneity statistic was significant ($Q_b = 7.15$, $p < .01$), revealing that the weighted mean ES for single informants (ES = .21) was significantly higher than the weighted mean ES for multi-informant (ES = .12). These findings suggest that the alliance–outcome association is stronger when the same reporter reports on the alliance and outcome. See Table 3.

2.9. Family-based and individual-based treatments

Some have suggested that the way in which the alliance is conceptualized and measured should differ across family- and individual-based therapy. For example, it has been hypothesized that the degree to which family members agree about the need for treatment should be considered part of the alliance in family-based treatment (Friedlander et al., 2006). In the present study set, however, the measures used to assess the alliance in family based treatments focused exclusively upon the client–therapist relationship. If agreement among family members is an important component of the alliance then focusing solely upon the client–therapist alliance may underestimate the strength of the alliance–outcome association in family-based treatment. Thus, the moderating effect of treatment mode (family vs. individual) was further examined. Treatments were classified into two categories: (a) individual-based treatments that included child- (e.g., Kendall, 1994) and parent-focused (e.g., Kazdin & Whitley, 2006) treatments, and (b) family-based treatments that included family therapy (e.g., Zaitsoff, Doyle, Hoste, & le Grange, 2008) and multisystemic interventions that primarily targeted the family system (e.g., Shelef, Diamond, Diamond, & Liddle, 2005). Treatments that could not be placed into one of these categories were excluded from the analyses. For example, studies that examined treatment delivered in usual care (e.g., McLeod & Weisz, 2005) or inpatient settings (e.g., Smith, 1999) were excluded because therapy may have contained a mix of individual- and family-based approaches. The between-groups homogeneity statistic was significant ($Q_b = 4.74$, $p < .05$); the weighted mean ES was higher for individual-based treatments (ES = .16) than family-based treatments (ES = .05). This finding suggests that treatment mode may influence the alliance–outcome association. See Table 3.

2.10. Publication bias

Steps were taken to examine whether publication bias may have influenced the findings. First, the correlation between sample size and ES was produced ($r = -.009$, $p = .96$). When publication bias is present in a sample, the mean ES estimate of the studies does not remain constant across changes in sample size (cf. McLeod & Weisz, 2004). Since the correlation in the present study was close to zero and non-significant, this provides evidence that publication bias was not present. The second step was to determine whether a significant difference existed between published and unpublished (i.e., dissertations) studies. The weighted ES estimate for dissertations was .16 ($n = 7$) and the weighted ES estimate for published articles was .14 ($n = 31$). The difference was nonsignificant ($p = .65$). Together, these analyses suggest that publication bias did not influence the findings.

2.11. Comparisons with past meta-analytic findings

As noted earlier, the inclusion criteria for the current study differed from past meta-analyses. To facilitate comparisons with previous meta-analyses, studies in the current study set that met criteria used in the adult psychotherapy field (i.e., Horvath & Symonds, 1991; Martin et al., 2000) were identified (i.e., individual therapy and alliance measured prior to outcome). Only nine of the 38 studies met criteria. The overall weighted mean alliance–outcome ES for the nine studies was .14 and the homogeneity analysis was not significant ($Q = 10.07$, $p = .20$). This suggests that only a small subset of studies meet the more stringent inclusion criteria used in previous meta-analyses focused upon adult therapy; however, the findings also indicate that the inclusion criteria used in the present study did not significantly impact the magnitude of the ES estimate.

3. Discussion

The primary goal of this study was to clarify the nature and strength of the alliance–outcome association in youth psychotherapy. Though researchers and clinicians both assert that the alliance is a critical ingredient of successful psychotherapy (Chu et al., 2004; Kazdin et al., 1990; Kendall & Ollendick, 2004; Shirk & Karver, 2003), the strength of the alliance–outcome association has remained an open question due to a lack of research. This review represents the largest collection of child alliance studies synthesized to date and includes almost four times the number of studies ($N = 38$) than the most recent meta-analysis conducted in the field ($N = 10$; Karver et al., 2006). The findings that emerged differ from past meta-analytic findings in some important ways.

Interestingly, the current findings diverge from past meta-analyses in the overall strength of the alliance–outcome association. The mean weighted alliance–outcome association in the present study was .14, which is slightly higher than Cohen's (1988) criteria for a small effect. Previous meta-analyses focused on youth and adult therapy have produced estimates that approached a medium effect (Cohen, 1988)—i.e., $r = .21$ (Karver et al., 2006) and $r = .22$ (Martin et al., 2000). In comparison, the current ES estimate is small. The findings therefore raise questions about the role that the alliance may play in youth psychotherapy. Given the possible implications of these findings, a careful review of the evidence supporting the accuracy of the results is warranted.

One possible interpretation of the findings is the current ES estimate is accurate and past meta-analytic results have overestimated the strength of the alliance–outcome association in youth therapy. A handful of factors lend support to this conclusion. From a statistical standpoint, it is probable that the current ES estimate is more precise than the previous estimates that were based upon a smaller number of studies (Karver et al., 2006; Shirk & Karver, 2003). Small samples are more likely to produce aberrant ES estimates that are farther from the true mean effect. It therefore is possible that the past estimates based upon a small sample of studies overestimated the strength of the alliance–outcome association in youth therapy.

The inclusion of methodologically weak studies in previous meta-analyses conducted in the youth field may have also contributed to inflated ES estimates. Compared to the child field, meta-analyses in the adult field have employed more stringent inclusion criteria. To be included in these meta-analyses, a study was required to (a) focus exclusively upon the alliance, (b) assess alliance prior to outcome, and (c) evaluate individual psychotherapy (not family therapy). These criteria were intended to exclude studies that might produce positively biased ES estimates (e.g., assessing alliance and outcome concurrently). Only a handful of studies included in the meta-analyses conducted in the youth psychotherapy field meet these criteria — nine studies in the present study and one study in Shirk and Karver (2003). Moreover, when these criteria are applied to the youth field the ES estimates are consistently smaller (present study, $r = .14$; Shirk & Karver, 2003, $r = .08$) than those produced in adult therapy (Horvath & Symonds, 1991, $r = .26$; Martin et al., 2000, $r = .21$). It therefore is possible that previous ES estimates in youth therapy were positively biased because they were based upon a small number of studies that included a relatively high proportion of methodologically weak studies (Begg, 1994; Begg & Berlin, 1988).

Publication bias represents another factor that might explain why the current estimate is smaller than previous estimates. No evidence for the influence of publication bias was found in the current study, but some evidence suggests that publication bias may have influenced past findings. Only 63.5% of the ES values in the current study set were positive compared to 91.3% reported by Shirk and Karver (2003). Furthermore, the correlation between sample size and ES was −.001 in the current sample, compared to −.12 in a past meta-analysis (Shirk & Karver, 2003). Given the number of studies ($N = 23$) and the magnitude of the negative correlation, caution is warranted when interpreting this correlation. However, a high proportion of positive ES values combined with a negative correlation does suggest that the ES estimate produced by the study set synthesized by Shirk and Karver (2003) may have been influenced by publication bias (McLeod & Weisz, 2004).

In considering this interpretation, it is prudent to assess why the current study set may not be influenced by publication bias. It is conceivable that the recent calls for alliance research may have led authors to submit and editors to publish null or negative findings that typically would not be submitted or published. If the current sample is relatively free of publication bias, then the sample would be more likely to produce an accurate estimate of the alliance–outcome association.

However, the extent to which publication bias influenced previous estimates is hard to determine. Past meta-analyses have not provided data that would allow for a full evaluation of this hypothesis (McLeod & Weisz, 2004; Rosenthal, 1995). Despite this fact, the possible effects of publication bias should not be underestimated. McLeod and Weisz (2004) demonstrated that the ES estimate generated in an unbiased sample of psychotherapy studies was less than half the magnitude of the ES estimates reported in meta-analyses of the published youth psychotherapy literature. It therefore is recommended that meta-analysts provide a thorough description of obtained effect sizes (Rosenthal, 1995). Such information would allow readers to assess whether publication bias may have influenced findings (Light & Pillemer, 1984).

Though some evidence suggests that the previous meta-analyses studies may have overestimated the alliance–outcome association in youth therapy, a few factors also indicate that the current ES estimate may underestimate the strength of the relation. Exploratory analyses suggest that a number of substantive and methodological factors may moderate the alliance–outcome association in youth psychotherapy. The identification of moderators indicates that the extant literature may not represent a single "population" of studies, but rather, a heterogeneous group whose effects vary according to both substantive and methodological factors. Indeed, the findings reveal that for particular groups (e.g., children and parent-report alliance) the weighted ES approaches previous ES estimates in adult psychotherapy. It therefore is important to consider how best to interpret the overall ES estimate in light of the moderator findings.

A number of significant substantive and methodological moderators were identified. The search for potential moderators started with an examination of whether characteristics of the youth influenced the strength of the alliance–outcome association. These analyses revealed that the alliance–outcome association varied according to the age of youth, with children demonstrating a higher ES than adolescents. It is plausible that because children do not typically refer themselves to therapy or recognize that problems exist, the quality of the alliance may be particularly instrumental in promoting positive outcomes for this age group (Shirk & Karver, 2003). Beyond child age, problem type also moderated the association. Youth with externalizing and "mixed" problems demonstrated stronger relations than samples with internalizing and substance abuse problems. Previously, the relation between the therapeutic relationship and clinical outcomes was found to be stronger for youth with externalizing problems compared to youth with internalizing problems (Shirk & Karver, 2003). Accumulating evidence therefore suggests that the strength of the alliance–outcome association may vary according to the demographic and clinical characteristics of the youth seeking treatment. These findings run counter to those in the adult field indicate that the alliance is a consistent predictor of outcomes (Martin et al., 2000).

The strength of the alliance–outcome relation also varied according to the referral source. Samples comprised of participants who sought treatment had a significantly higher ES compared to participants who were recruited or mandated for treatment. Attrition and sporadic attendance are common problems in community based service settings where many youth seek mental health services that may serve to undermine treatment effectiveness (McKay & Bannon, 2004). If a strong alliance does improve attendance, then the alliance may play a critical role in promoting positive outcomes for youth seeking services in community based service settings.

A significant finding also emerged between individual- and family-based treatments, with individual-based treatment evidencing a stronger alliance–outcome association. This finding has important implications for the way in which the alliance is conceptualized and measured across the different modes of treatment used in youth therapy. Friedlander et al. (2006) have questioned whether traditional alliance conceptualizations are sufficient for family-based treatment. They note that the traditional alliance dimensions are important; however, they also propose that two additional alliance dimensions — comfort disclosing information in front of family members, family agreement for the need and purpose of therapy — are relevant. If accurate, then the lower mean ES for family-based treatments observed herein may result from the fact that these dimensions were not assessed by studies contained in the current study set. It is plausible that the alliance dimensions that focus upon the quality of family interactions and level of family agreement about treatment goals are important in family-based treatments. More broadly, however, these findings suggest that work to clarify the dimensions relevant to the different modes of treatment represented in youth psychotherapy may help produce a more accurate estimate of the alliance–outcome association.

A number of methodological factors also moderated the alliance–outcome association. Two methodological factors — source and timing of the alliance assessment — emerged as moderators. This is consistent with past findings for the therapeutic relationship (Shirk & Karver, 2003). Weaker associations were found for alliance assessments collected early, as opposed to later, in treatment. Because alliance assessments conducted later in treatment are potentially confounded with symptom improvement, early alliance measurements are

preferred (Feeley, DeRubeis, & Gelfand, 1999; Judd & Kenney, 1981). The current findings therefore raise concerns regarding the predictive power of the alliance in youth psychotherapy.

The results also suggest that parent report of the alliance was more strongly linked to outcome than youth and observer reports. An open question in the child alliance literature is which source represents the optimal perspective from which to assess the alliance (McLeod & Weisz, 2005; Shirk & Karver, 2003). Self-report methods are sometimes preferred because they can directly assess the child's, parent's, and/or therapist's perception of the alliance relationship. However, some have questioned the value of child-report since developmental factors may limit a child's ability to report on their thoughts and feelings regarding their relationship with the therapist (Shirk & Karver, 2003). Observer ratings are not as susceptible to bias and thus may be a preferred perspective from which to assess the child alliance (McLeod & Weisz, 2005). The current findings suggest that the parent perception of the alliance may be critical to outcomes. Given that parents play a central role in treatment by referring youth, providing consent for treatment, and oftentimes providing transportation it is not surprising that the parent's perception of the alliance may be strongly linked to youth outcomes (Shirk & Russell, 1998). Similarly, the lower association for child-report may be due to developmental factors that limit the child's ability to accurately report on the alliance (Shirk & Karver, 2003), or possibly to restricted range (child ratings of alliance are all high) that limit efforts to detect significant alliance–outcome relations (Chu et al., 2004). Though the association for observer-report was relatively weak, it is important to note that 12 of the 14 observational assessments were conducted early in treatment. Timing (early in treatment) and source (observer-report) were therefore confounded making it difficult to determine which factor accounted for the weaker association. Together, these findings reveal that the manner in which alliance was assessed influenced the strength of the alliance–outcome association in youth psychotherapy.

The way in which clinical outcomes was measured also influenced the strength of the alliance–outcome association. The association varied according to the outcome domain assessed, with consumer treatment satisfaction generating larger effects than measures that assessed symptoms, functioning and environmental impact. Given that the alliance and treatment satisfaction are both likely influenced by perceptions of treatment progress, it is not surprising that this domain evidenced the stronger association. The technology and source findings both suggest that when outcomes are assessed by relatively objective methods (i.e., behavior counts) or by individuals not involved in treatment (i.e., peers and teachers) the alliance–outcome association was weaker. These findings raise concerns about how potential sources of bias may influence alliance–outcome estimates.

Finally, the analyses indicated single informant studies that relied upon the same source for the alliance and outcome measures produced significantly stronger effects than multiple informant studies. Single informant studies tend to overestimate the magnitude of effects due to shared method variance (Campbell & Fiske, 1959). Similar findings were noted in the youth field for the therapeutic relationship (Shirk & Karver, 2003). An accumulating body of evidence therefore suggests that method variance may contribute to inflated ES estimates and measurement approaches less susceptible to bias (e.g., multiple informants) may produce more conservative estimates of the alliance–outcome association.

Overall, the exploratory moderator analyses suggest that a number of substantive and methodological factors may moderate the alliance–outcome association in youth psychotherapy. However, caution is needed when interpreting these findings. Potential confounds exist that make drawing clear conclusions about particular moderators difficult. For example, family-based treatments produced low ES estimates, but most family-based treatments targeted substance abusing teens. Since the mean ES for substance abuse was low (ES = .07) it is difficult to ascertain whether the low ES is due to treatment mode, problem type, or a mix of these factors. With the concern about potential confounds noted, it is now important to consider how the moderator analyses may influence interpretation of the overall mean alliance–outcome ES estimate.

The number of significant moderators identified herein suggests that it may be premature to conclude that the alliance–outcome association is uniformly low in youth psychotherapy. The alliance–outcome association appears to be stronger for certain perspectives (parents), for certain clients (children) and in particular modes of treatments (individual-based). Clearly, more work is needed to clarify how and why the strength of the association varies across alliance raters and child age as well as evaluate how the alliance should be conceptualized and measured across different modes of treatment. Greater attention to these matters may help produce a more robust estimate of the alliance–outcome association.

Beyond the findings for the substantive moderators, a number of methodological factors also moderated the alliance–outcome association. Apparently, some methodological factors, such as shared-method variance and the concurrent measurement of alliance and outcome, may serve to produce positively biased ES estimates (Shirk & Karver, 2003). As noted above, if the current study set contains a higher proportion of well-designed studies than previous meta-analyses (i.e., Karver et al., 2006; Shirk & Karver, 2003) then it is plausible that the current ES estimate may be a more accurate estimate of the true mean population effect. However, it appears too early to conclude that this is the case given the potential influence of substantive moderators on the alliance–outcome association. Clearly, increased attention to the way in which the alliance is measured in youth psychotherapy is needed to help produce a more accurate estimate of the association.

Beyond considering the strength of the alliance–outcome association, another important goal of the study was to assess what progress the field has made towards addressing conceptual and methodological limitations. A review of the descriptive data reveals that the field has taken steps towards addressing some methodological limitations. For example, several alliance measures were used in multiple studies. As another example, existing alliance measures demonstrated adequate reliability. Thus, notable progress has been made in some key areas.

However, it is evident that a number of issues remain. A prominent issue is the study-to-study differences in how the alliance is conceptualized and measured. For example, both child and parent alliance measures varied in the alliance dimensions assessed. This variability in measurement could be adding noise that influences estimates of the alliance–outcome association. As noted earlier, the field would benefit from taking steps to adopt a common definition of the alliance, though the current findings indicate that efforts may need to focus upon identifying the dimensions that are relevant for particular modes of treatment in youth therapy. Establishing the validity of existing alliance measures represents a critical step towards improving alliance measurement (Elvins & Green, 2008). Of particular interest are studies that assess the convergent validity of measures to determine the extent to which the measures conceptually overlap. Ascertaining the amount of overlap among measures, and accounting for method variance, represent important goals for the field. Few studies have assessed the overlap between observer- and self-report alliance measures even though the degree to which these two perspectives converge has important implications for how the alliance is assessed. This type of research represents an important direction for the field since refinements in methodology could reveal more robust evidence that the alliance is linked with outcomes.

Second, although theoretical models posit that the alliance exerts an influence on outcomes via other treatment processes, such as level of child involvement, only a handful of studies have tested these models. If the alliance does operate via other treatment processes

then focusing exclusively upon the alliance–outcome relation may miss important information. To date, the handful of studies that have examined linkages between the alliance and treatment processes in youth psychotherapy have produced mixed findings (e.g., Karver et al., 2008; Shirk, Gudmundsen, Kaplinski, & McMakin, 2008). Thus, more research is needed to help clarify the nature and strength of the relation between the alliance and treatment processes.

Third, research that helps to elucidate the role that the child and parent alliance play across different modes of treatment is needed. Unlike the adult field, youth psychotherapy utilizes a multitude of treatment modes, including child-, parent-, and family-based approaches. It appears possible that the (a) alliance conceptualization may differ across child, parent, or family based approaches (Friedlander et al., 2006), and (b) child and parent alliance may be differentially associated with outcomes across different treatment modes. To fully capture the relevant relationship variables in treatment modes that involve more than one client researchers may need to assess the quality of relations and/or level of agreement among clients. For example, group cohesion has been identified as an important relationship variable linked with outcome in group-based therapy (see e.g., Hilbert et al., 2007; Taft, Murphy, King, Musser, & DeDeyn, 2003). Theoretical frameworks that help identify the relevant alliance dimensions and the role child and parent alliance play across different modes of treatment would greatly benefit the field. Such work could serve as a roadmap for empirical efforts aimed at clarifying whether the child and parent alliance are linked with outcomes across child, parent, and family based treatments.

Fourth, more research is needed on factors that influence alliance formation and development. The current findings suggest that several client characteristics, such as problem type and referral source, moderate the alliance–outcome association. This suggests a need for more research geared towards understanding how the alliance–outcome relation is influenced by the characteristics treatment participants bring to psychotherapy. Unfortunately, very few studies have attempted to identify which child, parent, and therapist characteristics are associated with the child and/or parent alliance. Developing an understanding of the factors that facilitate or hinder the formation of the alliance in youth psychotherapy may aid efforts to understand how the alliance is formed and maintained over the course of treatment (Creed & Kendall, 2005; Diamond et al., 1999).

Finally, few studies in youth psychotherapy have included measures of both technical and relational processes. Including measures of both processes would advance knowledge regarding the relative contribution of the technical and relational elements to clinical outcomes (McLeod, Southam-Gerow, & Weisz, 2009). Clearly, important questions remain about the nature of the alliance–outcome association in youth psychotherapy. Hopefully, the current findings will serve as a call for researchers to address these important issues.

Though the current findings have important implications, a few interpretive issues deserve mention. The current study set is almost four times the size of the most recent meta-analysis in youth therapy; nonetheless, the study set is modest in size. Indeed, the youth psychotherapy literature has a long way to go before it can match the adult literature in overall number of studies or consistency of findings. It may therefore be most appropriate to view the current findings as an important initial estimate of the alliance–outcome association in youth psychotherapy that may be revised in the future as researchers address some of the substantive and methodological issues in the field.

Additionally, although a number of variables were coded for and assessed in the current study, it is possible that some variables that exert an influence upon the alliance–outcome association were missed. The number of moderator analyses that could be run was limited by the uneven reporting practices that characterized the study set. As one example, only half of the studies provided information about therapist characteristics. As another example, client characteristics were not consistently reported. Efforts to ascertain whether therapist and/or client factors moderated the relation were therefore limited. In the future, it will be important for researchers to provide a more thorough description of sample characteristics and design features so meta-analysts can assess a wider range of potential moderators.

In sum, the findings of this meta-analysis raise questions about the role that the alliance may play in youth psychotherapy. The alliance explained a small proportion of the variance in clinical outcomes. However, the uneven approach to alliance measurement, the variability in the quality of the studies, and the presence of substantive moderators all raise questions about the accuracy of the current estimate. Given the number of theoretical and methodological moderators it appears premature to conclude that the alliance plays a minimal role in youth psychotherapy. Rather, it is evident that the use of different methodologies and research designs is required to provide a more precise picture of the role that the child and parent alliance play in the process and outcome of youth psychotherapy.

References*

*Auerbach, S. M., May, J. C., Stevens, M., & Kiesler, D. J. (2008). The interactive role of working alliance and counselor–client interpersonal behaviors in adolescent substance abuse treatment. *International Journal of Clinical and Health Psychology*, *8*, 617−629.

Begg, C. B. (1994). Publication bias. In H. E. Cooper, & L. V. Hedges (Eds.), *The handbook of research synthesis* (pp. 399−409). New York: Russell Sage Foundation.

Begg, C. B., & Berlin, J. A. (1988). Publication bias: A problem in interpreting medical data. *Journal of the Royal Statistical Society*, *151*, 419−463.

Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy Theory, Research, and Practice*, *26*, 17−25.

Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait–multimethod matrix. *Psychological Bulletin*, *56*, 81−105.

*Cavell, T. A., Elledge, L. C., Malcolm, K. T., Faith, M. A., & Hughes, J. N. (2009). Relationship quality and the mentoring of aggressive, high-risk children. *Journal of Clinical Child and Adolescent Psychology*, *38*, 185−198.

*Champion, K. M. P. (1998). The change process in therapeutic programs for children. Unpublished doctoral dissertation, University of Delaware, Newark.

*Chiu, A. W., McLeod, B. D., Har, K., & Wood, J. J. (2009). Child–therapist alliance and clinical outcomes in cognitive behavioral therapy for child anxiety disorders. *Journal of Child Psychology and Psychiatry*, *50*, 751−758.

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.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Colson, D. B., Cornsweet, C., Murphy, T., O'Malley, F., Hyland, P. S., McParland, M., et al. (1991). Perceived treatment difficulty and therapeutic alliance on an adolescent psychiatric hospital unit. *American Journal of Orthopsychiatry*, *61*, 221−229.

*Creed, T. A. (2007). A mediation model of early predictors of treatment outcome within cognitive–behavioral therapy for children with anxiety disorders: Child involvement, therapist behavior, and alliance. Unpublished doctoral dissertation, Temple University, Philadelphia, Pennsylvania.

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.

*Darchuk, A. J. (2007). The role of the therapeutic alliance and its relationship to treatment outcome and client motivation in an adolescent substance abuse treatment setting. Unpublished doctoral dissertation, Ohio University, Athens.

Diamond, G. M., Liddle, H. A., Hogue, A., & Dakof, G. A. (1999). Alliance-building interventions with adolescents in family therapy: A process study. *Psychotherapy: Theory, Research, Practice, Training*, *36*, 355−368.

*Diamond, G. S., Liddle, H. A., Wintersteen, M. B., Dennis, M. L., Godley, S. H., & Tims, F. (2006). Early therapeutic alliance as a predictor of treatment outcome for adolescent cannabis users in outpatient treatment. *American Journal of Addictions*, *15*, 26−33.

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

*Eltz, M. J., Shirk, S. R., & Sarlin, N. (1995). Alliance formation and treatment outcome among maltreated adolescents. *Child Abuse & Neglect: The International Journal*, *19*, 419.

Elvins, R., & Green, J. (2008). The conceptualization and measurement of therapeutic alliance: An empirical review. *Clinical Psychology Review*, *28*, 1167−1187.

*Faw, L., Hogue, A., Johnson, S., Diamond, G. M., & Liddle, H. A. (2005). The Adolescent Therapeutic Alliance Scale (ATAS): Initial psychometrics and prediction of outcome

* References marked with an asterisk indicate studies included in the meta-analysis.

in family-based substance abuse prevention counseling. *Psychotherapy Research*, *15*, 141−154.
Feeley, M., DeRubeis, R. J., & Gelfand, L. A. (1999). The temporal relation of adherence and alliance to symptom change in cognitive therapy for depression. *Journal of Consulting & Clinical Psychology*, *67*, 578−582.
*Flicker, S. M., Turner, C. W., Waldron, H. B., Brody, J. L., & Ozechowski, T. J. (2008). Ethnic background, therapeutic alliance, and treatment retention in functional family therapy with adolescents who abuse substances. *Journal of Family Psychology*, *22*, 167−170.
Florsheim, P., Shotorbani, S., Guest-Warnick, G., Barratt, T., & Hwang, W. -C. (2000). Role of the working alliance in the treatment of delinquent boys in community-based programs. *Journal of Clinical Child Psychology*, *29*, 94−107.
Friedlander, M. L., Escudero, V., Horvath, A. O., Heatherington, L., Cabero, A., & Martens, M. P. (2006). System for observing family therapy alliances: A tool for research and practice. *Journal of Counseling Psychology*, *53*, 214−224.
Gavin, L. A., Wamboldt, M. Z., Sorokin, N., Levy, S. Y., & Wamboldt, F. S. (1999). Treatment alliance and its association with family functioning, adherence, and medical outcome in adolescents with severe, chronic asthma. *Journal of Pediatric Psychology*, *24*, 355−365.
Glueckauf, R. L., Liss, H. J., McQuillen, D. E., Webb, P. M., Dairaghi, J., & Carter, C. B. (2002). Therapeutic alliance in family therapy for adolescents with epilepsy: An exploratory study. *American Journal of Family Therapy*, *30*, 125−139.
*Harvey, S. (2008). An initial look at the outcomes for dynamic play therapy. *International Journal of Play Therapy*, *17*, 86−101.
Hawley, K. M., & Garland, A. F. (2008). Working alliance in adolescent outpatient therapy: Youth, parent and therapist reports and associations with therapy outcomes. *Child & Youth Care Forum*, *37*, 59−74.
*Hawley, K. M., & Weisz, J. R. (2005). Youth versus parent working alliance in usual clinical care: Distinctive associations with retention, satisfaction, and treatment outcome. *Journal of Clinical Child and Adolescent Psychology*, *34*, 117.
Hedges, L. V. (1994). Fixed effect models. In H. E. Cooper, & L. V. Hedges (Eds.), *Handbook of research synthesis* (pp. 285−299). New York: Russell Sage Foundation.
Hilbert, A., Saelens, B. E., Stein, R. I., Mockus, D. S., Welch, R. R., & Matt, G. E. (2007). Pretreatment and process predictors of outcome in interpersonal and cognitive behavioral psychotherapy for binge eating disorder. *Journal of Consulting and Clinical Psychology*, *75*, 645−651.
*Hintikka, U., Laukkanen, E., Marttunen, M., & Lehtonen, J. (2006). Good working alliance and psychotherapy are associated with positive changes in cognitive performance among adolescent psychiatric inpatients. *Bulletin of the Menninger Clinic*, *70*, 316−335.
*Hogue, A., Dauber, S., Stambaugh, L., Cecero, J., & Liddle, H. A. (2006). Early therapeutic alliance and treatment outcome in individual and family therapy for adolescent behavior problems. *Journal of Consulting and Clinical Psychology*, *74*, 121−129.
*Holmqvist, R., Hill, T., & Lang, A. (2007). Treatment alliance in residential treatment of criminal adolescents. *Child & Youth Care Forum*, *36*, 163−178.
Horvath, A. O., & Bedi, R. P. (2002). The alliance. In J. C. Norcross (Ed.), *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients* (pp. 37−69). New York, NY, US: Oxford University Press.
Horvath, A. O., & Greenberg, L. S. (1989). Development and validation of the Working Alliance Inventory. *Journal of Counseling Psychology*, *36*, 223−233.
Horvath, A. O., & Symonds, B. D. (1991). Relation between working alliance and outcome in psychotherapy: A meta-analysis. *Journal of Counseling Psychology*, *38*, 139−149.
Judd, C. M., & Kenney, D. A. (1981). Process analysis: Estimating meditation in treatment evaluations. *Evaluation Review*, *5*, 602−619.
Karver, M. S., Handelsman, J. B., Fields, S., & Bickman, L. (2005). A theoretical model of common process factors in youth and family therapy. *Mental Health Services Research*, *7*, 35−51.
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.
*Karver, M., Shirk, S., Handelsman, J. B., Fields, S., Crisp, H., Gudmundsen, G., et al. (2008). Relationship processes in youth psychotherapy: Measuring alliance, alliance-building behaviors, and client involvement. *Journal of Emotional and Behavioral Disorders*, *16*, 15−28.
*Kaufman, N. K., Rohde, P., Seeley, J. R., Clarke, G. N., & Stice, E. (2005). Potential mediators of cognitive–behavioral therapy for adolescents with comorbid major depression and conduct disorder. *Journal of Consulting and Clinical Psychology*, *73*, 38−46.
Kazdin, A. E. (2007). Mediators and mechanisms of change in psychotherapy research. *Annual Review of Clinical Psychology*, *3*, 1−27.
*Kazdin, A. E., Marciano, P. L., & Whitley, M. K. (2005). The therapeutic alliance in cognitive–behavioral treatment of children referred for oppositional, aggressive, and antisocial behavior. *Journal of Consulting and Clinical Psychology*, *73*, 726−730.
Kazdin, A. E., Siegel, T. C., & Bass, D. (1990). Drawing on clinical practice to inform research on child and adolescent psychotherapy: Survey of practitioners. *Professional Psychology: Research and Practice*, *21*, 189−198.
*Kazdin, A. E., & Whitley, M. K. (2006). Pretreatment social relations, therapeutic alliance, and improvements in parenting practices in parent management training. *Journal of Consulting and Clinical Psychology*, *74*, 346.
*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-Mindell, S. M., Southam-Gerow, M. A., Henin, A., & Warman, M. (1997). Therapy for youths with anxiety disorders: A second randomized clinical trial. *Journal of Consulting and Clinical Psychology*, *65*, 883−888.
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.
*Kim, H. (2007). Client growth and alliance development in solution-focused brief family therapy. Unpublished doctoral dissertation, State University of New York at Buffalo, Buffalo.
*Liber, J. M., McLeod, B. D., Van Widenfelt, B. M., Goedhart, A. W., van der Leeden, A. J. M., Utens, E. M. W. J., et al. (2010). Examining the relation between the therapeutic alliance, treatment adherence, and outcome of cognitive behavioral treatment for children with anxiety disorders. *Behavior Therapy*, *41*, 172−186.
Light, R. J., & Pillemer, D. B. (1984). *Summing up: The science of reviewing research.* Cambridge, MA: Harvard University Press.
Luborsky, L. (1976). Helping alliances in psychotherapy. In Claghorn (Ed.), *Successful psychotherapy* (pp. 92−116). New York: Brunner Mazel.
Martin, D. J., Garske, F. P., & Davis, M. K. (2000). Relationship of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, *68*, 438−450.
McKay, M. M., & Bannon, W. M. (2004). Engaging families in child mental health services. *Child and Adolescent Psychiatric Clinics of North America*, *13*, 905−921.
McLeod, B. D., Southam-Gerow, M. A., & Weisz, J. R. (2009). Conceptual and methodological issues in treatment integrity measurement. *School Psychology Review*, *4*, 541−546.
McLeod, B. D., & Weisz, J. R. (2004). Using dissertations to examine potential bias in child and adolescent clinical trials. *Journal of Consulting and Clinical Psychology*, *72*, 235−251.
*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.
Norcross, J. C. (2002a). *Psychotherapy relationships that work.* New York, NY, US: Oxford University Press.
Norcross, J. C. (2002b). *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients.* New York, NY, US: Oxford University Press.
*Pereira, T., Lock, J., & Oggins, J. (2006). Role of therapeutic alliance in family therapy for adolescent anorexia nervosa. *International Journal of Eating Disorders*, *39*, 677−684.
Pigott, T. D. (1994). Methods for handling missing data in research synthesis. In H. E. Cooper, & L. V. Hedges (Eds.), *Handbook of research synthesis* (pp. 285−299). New York: Russell Sage Foundation.
*Robbins, M. S., Liddle, H. A., Turner, C. W., Dakof, G. A., Alexander, J. F., & Kogan, S. M. (2006). Adolescent and parent therapeutic alliances as predictors of dropout in multidimensional family therapy. *Journal of Family Psychology*, *20*, 108−116.
*Robbins, M. S., Mayorga, C. C., Mitrani, V. B., Szapocznik, J., Turner, C. W., & Alexander, J. F. (2008). Adolescent and parent alliances with therapists in brief strategic family therapy with drug-using Hispanic adolescents. *Journal of Marital & Family Therapy*, *34*, 316−328.
*Robbins, M. S., Turner, C. W., Alexander, J. F., & Perez, G. A. (2003). Alliance and dropout in family therapy for adolescents with behavior problems: Individual and systemic effects. *Journal of Family Psychology*, *17*, 534−544.
Rosenthal, R. (1994). Parametric measures of effect size. In H. E. Cooper, & L. V. Hedges (Eds.), *Handbook of research synthesis* (pp. 231−244). New York: Russell Sage Foundation.
Rosenthal, R. (1995). Writing meta-analytic reviews. *Psychological Bulletin*, *118*, 183−192.
*Sarlin, N. S. (1992). Working relationships in the treatment of adolescent inpatients: Early treatment predictors and associations with outcome. Unpublished doctoral dissertation, University of Denver, Denver, Colorado.
Shadish, W. R., & Haddock, C. K. (1994). Combining estimates of effect size. In H. E. Cooper, & L. V. Hedges (Eds.), *Handbook of research synthesis* (pp. 261−281). New York: Russell Sage Foundation.
*Shelef, K., & Diamond, G. M. (2008). Short form of the revised Vanderbilt Therapeutic Alliance Scale: Development, reliability, and validity. *Psychotherapy Research*, *18*, 433−443.
*Shelef, K., Diamond, G. M., Diamond, G. S., & Liddle, H. A. (2005). Adolescent and parent alliance and treatment outcome in multidimensional family therapy. *Journal of Consulting and Clinical Psychology*, *73*, 689−698.
*Shirk, S. R., Gudmundsen, G., Kaplinski, H. C., & McMakin, D. L. (2008). Alliance and outcome in cognitive–behavioral therapy for adolescent depression. *Journal of Clinical Child and Adolescent Psychology*, *37*, 631−639.
Shirk, S. R., & Karver, M. (2003). Prediction of treatment outcome from relationship variables in child and adolescent therapy: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, *71*, 452−464.
Shirk, S. R., & Russell, R. L. (1998). Process issues in child psychotherapy. In A. Bellack, M. Hersen (Series Ed.), & T. Ollendick (Vol. Ed.), *Comprehensive clinical psychology: Vol. 5. Children and adolescents: Clinical foundations and treatment* (pp. 57–82) Oxford, England: Pergamon.
Shirk, S. R., & Saiz, C. S. (1992). Clinical, empirical, and developmental perspectives on the therapeutic relationship in child psychotherapy. *Development and Psychopathology*, *4*, 713−728.
*Smith, R. D. (1999). Using object relations to predict outcome for adolescents in residential treatment. Unpublished doctoral dissertation, University of Denver, Denver, Colorado.

Taft, C. T., Murphy, C. M., King, D. W., Musser, P. H., & DeDeyn, J. M. (2003). Process and treatment adherence factors in group cognitive–behavioral therapy for partner violent men. *Journal of Consulting and Clinical Psychology*, *71*, 812−820.

*Tetzlaff, B. T., Kahn, J. H., Godley, S. H., Godley, M. D., Diamond, G. S., & Funk, R. R. (2005). Working alliance, treatment satisfaction, and patterns of posttreatment use among adolescent substance users. *Psychology of Addictive Behaviors*, *19*, 199−207.

*Van Orman, W. (1996). The relationship between therapeutic alliance and therapy outcome in home based family therapy. Unpublished doctoral dissertation, Boston University, Massachusetts.

*Zaitsoff, S. L., Doyle, A. C., Hoste, R. R., & le Grange, D. (2008). How do adolescents with bulimia nervosa rate the acceptability and therapeutic relationship in family-based treatment? *International Journal of Eating Disorders*, *41*, 390−398.