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Factor Structure and Validity of the Therapy Process Observational Coding System for Child Psychotherapy-Alliance Scale

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The aim of this study was to examine the factor structure and psychometric properties of an observer-rated youth alliance measure, the Therapy Process Observational Coding System for Child Psychotherapy–Alliance scale (TPOCS–A). The sample was 52 youth diagnosed with anxiety disorders (M age = 12.43, SD = 2.23, range = 8–15; 56% boys; 98% Caucasian) drawn from a randomized controlled trial. Participants received a manualized individual cognitive behavioral treatment, the FRIENDS for life program, in public community clinics in Norway. Diagnostic status, treatment motivation, and perceived treatment credibility were assessed at pretreatment. Using the TPOCS–A,
independent observers rated child–therapist alliance from the third therapy session. Child- and therapist-reported alliance measures were collected from the same session. An exploratory factor analysis supported a one-factor solution, which is consistent with previous studies of self- and observer-rated youth alliance scales. Psychometric analyses supported the interrater reliability, internal consistency, and convergent/divergent validity of the TPOCS–A. Accumulating psychometric evidence indicate that the TPOCS–A has the potential to fill a measurement gap in the youth psychotherapy field. In youth psychotherapy, alliance may be unidimensional, so establishing a strong bond and engaging the child in therapeutic activities may both be instrumental to establishing good alliance early in treatment. However, it is important to be cautious when interpreting the factor analytic findings, because the sample size may have been too small to identify additional factors. Future research can build upon these findings by examining the factor structure of youth alliance measures with larger, more diverse samples.

The alliance is considered an important component of youth psychotherapy (Kendall & Ollendick, 2004). However, the nature and strength of the alliance–outcome association in youth psychotherapy has been questioned in recent years, in part due to measurement limitations in the field (McLeod, 2011). Research that investigates the psychometric properties of alliance measures for youth psychotherapy is underdeveloped (Elvins & Green, 2008; McLeod, 2011). As a result, fundamental questions exist about the nature of the alliance in youth therapy.

To date, few attempts have been made to systematically investigate the psychometric properties of alliance measures for youth therapy (Elvins & Green, 2008; McLeod, 2011). Progress in this area has been slowed by several factors. First, the field has yet to coalesce around a unified definition of the alliance (Creed & Kendall, 2005). Second, few alliance measures have been used in more than one study, thereby limiting opportunities to amass psychometric data (McLeod, 2011; Shirk & Karver, 2003). Without evidence supporting the factor structure or psychometric properties of alliance measures, it is difficult to compare findings across studies that utilize different alliance measures (Chu et al., 2004). To progress, the field needs to establish the psychometric properties of alliance measures.

Little is currently known about the factor structure of alliance measures for youth psychotherapy. To our knowledge, only one study has evaluated the factor structure of a self-report alliance measure in youth psychotherapy. This study conducted a factor analysis of the Adolescent Working Alliance Inventory (AWAI) with a sample of 90 adolescents receiving outpatient treatment. The AWAI was adapted for use with adolescents, and the authors found a one-factor solution (DiGiuseppe, Linscott, & Jilton, 1996). Findings from two studies using observer-rated alliance measures also support a one-factor model. Faw, Hogue, Johnson, Diamond, and Liddle (2005) conducted a factor analysis of the Adolescent Therapeutic Alliance Scale (ATAS) with a sample of 51 adolescents receiving a manualized, family-based substance abuse prevention program. The ATAS was designed for youth psychotherapy, and the authors found support for a one-factor model (Faw et al., 2005). In the second study, a factor analysis of the Vanderbilt Therapeutic Alliance Scale–Revised (VTAS–R) scale was conducted with a sample of 100 adolescents receiving manualized cognitive behavioral therapy (CBT) or a manualized family-based treatment for substance abuse. The VTAS–R was also designed for youth psychotherapy, and this study found support for a one-factor model (Hogue, Dauber, Stambaugh, Cecero, & Liddle, 2006). These studies suggest that the alliance may be defined by a single factor. However, more research is needed to determine if this factor structure is found across other populations (e.g., children, internalizing samples) and alliance measures.

Beyond investigating the factor structure of existing measures, it is also important to establish the validity of alliance measures for youth therapy (Elvins & Green, 2008). Of particular interest are studies that assess the convergent validity of self- and observer-reported alliance measures (McLeod, 2011). An open question in the youth therapy field is the perspective (e.g., child, therapist, observer) from which it is best to assess the alliance (McLeod & Weisz, 2005). Self-report measures directly assess the perspective of those involved in therapy (i.e., child, therapist) and thus may represent the ideal perspective. However, developmental factors may limit a child’s ability to report on certain aspects of the therapeutic relationship (Shirk & Saiz, 1992), and self-report measures are subject to demand characteristics that place pressure upon children to say nice (or not nice) things about the therapist (Shirk & Karver, 2003). Observer-rated alliance measures are less susceptible to bias and may therefore be better suited for youth therapy (McLeod & Weisz, 2005). However, few studies have assessed the degree of overlap among validated observer-rated and self-report alliance measures for youth therapy. Thus, assessing the degree of overlap among the different perspectives represents a step toward addressing important questions about alliance measurement in child therapy.
The current study examines the factor structure and further investigates the psychometric properties of the Therapeutic Process Observational Coding System for Child Psychotherapy–Alliance Scale (TPOCS–A; McLeod & Weisz, 2005). The observer-rated TPOCS–A was developed to assess the bond and task dimensions of the child– and parent–therapist alliance in youth psychotherapy. Specifically, the TPOCS–A assesses the affective elements of the alliance (i.e., the bond dimension) and the level of child engagement in therapeutic activities (i.e., the task dimension; see McLeod & Weisz, 2005). Five previous studies (Chiu, McLeod, Har, & Wood, 2009; Langer, McLeod, & Weisz, 2011; Lerner, Mikami, & McLeod, 2011; Liber et al., 2010; McLeod & Weisz, 2005) have provided support for the psychometric properties of the TPOCS–A across different types of child problems (i.e., ADHD, anxiety, and depression), treatments (i.e., usual care, individual CBT, family-focused CBT, group-based CBT, parent training), settings (i.e., community clinics, university clinics), and countries (i.e., Netherlands, United States). However, the factor structure of the TPOCS–A has not been examined previously.

In this report, the factor structure and psychometric properties of the TPOCS–A were examined in a sample of Norwegian children diagnosed with anxiety disorders who received manualized CBT in public community settings as part of a randomized clinical trial (RCT). The factor structure, reliability (intrater, internal consistency), and validity (convergent, discriminant) of the TPOCS–A were examined. It is important to note that the convergent validity of the TPOCS–A was assessed with the Therapeutic Alliance Scale for Children (TASC; Shirk & Saiz, 1992), a psychometrically sound child- and therapist-report alliance measure developed specifically for youth psychotherapy.

METHODS

Sample

Children. Participants were drawn from the Assessment and Treatment–Anxiety in Children and Adults (ATACA) study. The child part of ATACA is an RCT conducted in seven public mental health outpatient clinics in Norway. Participants were identified for the project when referral information included anxiety symptoms. Children with a primary diagnosis of separation anxiety disorder, social phobia, and/or generalized anxiety disorder were included and randomized to individual CBT, group-based CBT, or a wait-list condition. The treatment program was the FRIENDS for life manual, which targets emotional awareness and coping, cognitive restructuring, and exposure tasks through 10 one-hr sessions (Barrett, Webster, & Turner, 2004). Exclusion criteria were severe conduct disorder, pervasive developmental disorders, obsessive-compulsive disorder, mental retardation, and/or severe language difficulties. A total of 182 youth were included in the RCT. The first 52 children randomized to individual CBT were included in the present study. Only children assigned to individual CBT were included as alliance in groups may not be comparable to alliance in individual treatments (Johnson, Burlingame, Olsen, Davies, & Gleave, 2005). See Table 1 for demographic information.

Therapists. Thirteen therapists participated: seven clinical psychologists, five clinical pedagogues (masters of education with additional clinical training), and one social worker. The therapists (M age = 48.15; SD = 9.15, range = 31–59; 12 female) had from 3 to 25 years of clinical experience (M = 10.31, SD = 6.28). The therapists completed a 2-day FRIENDS program training seminar and a 10-week supervised individual pilot case before participating in the study. Therapists received biweekly supervision by clinical psychologists experienced with the FRIENDS program. The mean number of clients per therapist was 4.33 (SD = 1.67; range = 1–7).

Coders. Three clinical psychologists (one male, two female) rated alliance based on videotapes of therapy sessions. Two coders were newly graduated psychologists, whereas one had 6 years of clinical experience.

Alliance Measures

TPOCS–A (McLeod & Weisz, 2005). The TPOCS–A was used to rate the quality of the child–therapist relationship. See Table 1 for demographic and diagnostic information.

<table>
<thead>
<tr>
<th>Variables</th>
<th>M (SD) or % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>12.43 (2.23)</td>
</tr>
<tr>
<td>Boys</td>
<td>56% (29)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>98% (51)</td>
</tr>
<tr>
<td>Other</td>
<td>2% (1)</td>
</tr>
<tr>
<td>Parent Post–High School Education</td>
<td></td>
</tr>
<tr>
<td>&gt;3 Years</td>
<td>31% (16)</td>
</tr>
<tr>
<td>1–3 Years</td>
<td>56% (29)</td>
</tr>
<tr>
<td>None</td>
<td>13% (7)</td>
</tr>
<tr>
<td>Primary Diagnosis</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>41% (21)</td>
</tr>
<tr>
<td>SAD</td>
<td>37% (19)</td>
</tr>
<tr>
<td>GAD</td>
<td>22% (12)</td>
</tr>
<tr>
<td>One Comorbid Anxiety Diagnosis</td>
<td></td>
</tr>
<tr>
<td>Two Comorbid Anxiety Diagnoses</td>
<td></td>
</tr>
</tbody>
</table>

Note: SP = social phobia; SAD = separation anxiety disorder; GAD = generalized anxiety disorder.
Alliance. The TPOCS–A consists of nine items: six covering affective elements of the client–therapist relationship (bond items), and three covering client participation in therapeutic activities (task items; see Table 3). Coders view entire therapy sessions and then rate each item on a six-point scale ranging from 0 (not at all) to 5 (a great deal). For the current study, the TPOCS–A was translated into Norwegian by the first author of this article. The back-translated version was approved by the TPOCS–A author (Bryce D. McLeod, Ph.D). See Table 2 for interrater reliability, internal consistency, and convergent validity information from previous studies using the version of the TPOCS–A focused upon the child–therapist alliance.

**TASC (Shirk & Saiz, 1992).** The TASC was used to assess the child (TASC–C) and therapist (TASC–T) view of the alliance. The TASC–C is a 12-item questionnaire covering the youth’s agreement with the therapist regarding the tasks of therapy (task items) and the youth’s affect toward the therapist (bond items; e.g., I liked spending time with my therapist). The TASC–T consists of 12 equivalent items where therapists rate their perception of the youth’s experience (e.g., The child liked spending time with you). The TASC is scored on a 4-point Likert scale ranging from 1 (not at all) to 4 (very much). The TASC has demonstrated good internal consistency and validity (Hawley & Weisz, 2005; Kazdin, Marciano, & Whitley, 2005). In the present study, the internal consistency was acceptable for the TASC–C (α = .81) and TASC–T (α = .70). The TASC was translated from English.

**Other Measures**

**Anxiety Disorders Interview Schedule (ADIS-C/P; Silverman & Albano, 1996).** Children were diagnosed using the ADIS-C/P, a semistructured interview with good reliability and validity (Silverman, Saavedra, & Pina, 2001; Wood, Piacentini, Bergman, McCracken, & Barrios, 2002). Diagnoses were based on combined parent- and child-reports. Only the separation anxiety disorder, social phobia, and generalized anxiety disorder sections of the ADIS were administered. Clinicians at each site were trained in the ADIS-interview in a 2-day workshop. The ADIS was translated from English at the Centre for Child and Adolescent Mental Health, Eastern and Southern Norway.

**Nijmegen Motivational List (NML; Keijsers, Schaap, Hoogduin, Hoogsteyns, & de Kemp, 1999)**

The 15-item self-report version of the NML adapted for children was used to assess treatment motivation (Ollendick et al., 2009). Previous studies have supported the internal consistency and validity of the NML (Haan et al., 1997; Hoogduin & Duivenvoorden, 1988; Keijsers, Hoogduin, & Schaap, 1994; Ollendick et al., 2009). All items (e.g., This treatment seems to be the right one for me) are scored on a 3-point scale (completely true, somewhat true, not true). In the present study, the internal consistency was good (α = .87). The NML was translated from Swedish.

**Credibility Scale (CS; Borkovec & Nau, 1972).** The CS was used to assess client belief in the treatment program. The CS is a four-item self-report measure (e.g., How confident are you that the treatment will help your anxiety?) answered on a 9-point Likert scale. In the current study the internal consistency was good (α = .82). The scale has demonstrated good discriminant validity when used with adult clients (Borkovec & Nau, 1972). The CS was translated from Swedish.

**Procedure**

Parents and youth older than 12 years of age provided written consent, including permission to have therapy sessions recorded. For younger children, verbal assent was obtained. The ADIS–C/P and the NML were administered at pretreatment. The CS was administered after the first session. The TASC–C and TASC–T were completed after the third session. Therapists left the room when youth completed the TASC–C and the youth were informed that the therapists would not see their answers.

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**TABLE 2**

Psychometric Properties of Previous TPOCS–A Studies Focused Upon the Child–Therapist Alliance

<table>
<thead>
<tr>
<th>Study</th>
<th>Population</th>
<th>Age (M, SD)</th>
<th>N (n Tapes)</th>
<th>M ICC (n Coders)</th>
<th>Internal Consistency</th>
<th>Convergent Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chiu et al. (2009)</td>
<td>Anxiety</td>
<td>9.74 (2.14)</td>
<td>32 (123)</td>
<td>.71 (5)</td>
<td>α = .91-.92</td>
<td>—</td>
</tr>
<tr>
<td>Langer et al. (2011)</td>
<td>Anxiety and depression</td>
<td>11.27 (2.15)</td>
<td>76 (288)</td>
<td>.80 (9)</td>
<td>α = .91</td>
<td>.48</td>
</tr>
<tr>
<td>Liber et al. (2010)</td>
<td>Anxiety</td>
<td>10.22 (1.15)</td>
<td>52 (104)</td>
<td>.48 (6)</td>
<td>α = .92</td>
<td>—</td>
</tr>
<tr>
<td>McLeod &amp; Weisz (2005)</td>
<td>Anxiety and depression</td>
<td>10.30 (1.83)</td>
<td>22 (84)</td>
<td>.59 (3)</td>
<td>α = .95</td>
<td>.53</td>
</tr>
</tbody>
</table>

Note: Convergent validity represents the correlation between the Therapy Process Observational Coding System for Child Psychotherapy–Alliance scale (TPOCS–A) and the Therapeutic Alliance Scale for Children. ICC = intraclass correlation coefficient.
The Regional Committee for Medical Research Ethics, Western Norway, and The Norwegian National Data Inspectorate approved the study.

Coding and session sampling procedures. All therapy sessions were videotaped. Tapes from the third session were coded \((N = 52)\). For two cases, the third session was unavailable, so the second session was coded. Therapists were unaware of which sessions would be coded. Coders were trained over a 4-month period coding pilot tapes \((N = 42)\) and were certified after their ratings achieved acceptable interrater reliability on each item \((\text{ICC} > .59; \text{Cicchetti, 1994})\). Once coding commenced, tapes were randomly assigned to coders. During coding, regular meetings were held to prevent coder drift \((\text{Margolin et al., 1998})\). Coders were naive to other client data. Coders scored entire therapy sessions. Each therapy session was double-coded. For the present analyses, the mean score was used to reduce measurement error by removing differences between coders \((\text{Hill & Lambert, 2004})\).

RESULTS

Data analyses progressed through four steps. First, interrater reliability of the TPOCS–A items was examined. Second, systematic differences in alliance scores were checked for by examining child gender, site, primary anxiety diagnosis, and age group differences on the TPOCS–A, TASC–C, and TASC–T. Third, an exploratory factor analysis of the TPOCS–A was conducted. Finally, the convergent and discriminant validity of the TPOCS–A was examined.

Interrater reliability was calculated across all coders using the model ICC(1, 3), based on a one-way random effects model \((\text{Shrout & Fleiss, 1979})\). Interrater reliability was “fair” to “excellent” \((\text{Cicchetti, 1994})\) for the items \((\text{ICCs ranged from .54 to .93; } M = .77, SD = .15; \text{see Table 3})\).

Descriptive statistics for each TPOCS–A item are presented in Table 3. Scores on the TPOCS–A items exhibited no indication of range restriction \((\text{range} = 1.08 - 4.89)\). Table 4 displays descriptive information for the TASC–C, TASC–P, NML, and CS. Subgroup analyses revealed no significant differences in TPOCS–A, TASC–C, or TASC–P scores across gender, age, primary anxiety diagnosis, and/or treatment site.

Factor Analysis

An exploratory factor analysis with principal axis extraction was run to examine the structure of the nine TPOCS–A items. The Kaiser–Meyer–Olkin measure of sampling adequacy was .87, which classifies as “great” \((\text{Hutcheson & Sofroniu, 1999})\). Promax rotation was used, as it was expected that if more than one factor emerged, the factors would be correlated. The initial analysis yielded two factors with eigenvalues greater than 1.0 \((\text{eigenvalues} = 5.84 \text{ and } 1.07)\) that cumulatively accounted for 71.76% of the variance. An inspection of the scree plot showed a substantial drop from the first to the second factor, a smaller drop from the second to the third factor, followed by stabilization. We therefore extracted one- and two-factor solutions. In the two-factor solution the factors were highly correlated \((r = .60)\), and more than half of the scale variance was accounted for by Factor 1 (62.19% vs. 9.57%).

<table>
<thead>
<tr>
<th>Item Description</th>
<th>M</th>
<th>SD</th>
<th>ICC</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent did the client share his/her experience with the therapista</td>
<td>2.74</td>
<td>1.14</td>
<td>.83</td>
<td>.86</td>
</tr>
<tr>
<td>indicate that (s)he experiences the therapist as understanding and/o</td>
<td>2.06</td>
<td>1.06</td>
<td>.54</td>
<td>.87</td>
</tr>
<tr>
<td>or supporting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and therapist collaborate on therapeutic tasksb</td>
<td>2.52</td>
<td>1.29</td>
<td>.84</td>
<td>.85</td>
</tr>
<tr>
<td>and therapist appear anxious or uncomfortable interacting with one anotherc</td>
<td>4.76</td>
<td>0.61</td>
<td>.54</td>
<td>.82</td>
</tr>
<tr>
<td>show positive affect towards the therapistd</td>
<td>2.57</td>
<td>1.09</td>
<td>.84</td>
<td>.82</td>
</tr>
<tr>
<td>appear uncomfortable when interacting with therapistd</td>
<td>4.58</td>
<td>1.02</td>
<td>.83</td>
<td>.82</td>
</tr>
<tr>
<td>not comply with therapeutic taskse</td>
<td>4.51</td>
<td>1.12</td>
<td>.93</td>
<td>.81</td>
</tr>
<tr>
<td>act in a hostile, critical, or defensive manner toward the therapistse</td>
<td>4.89</td>
<td>0.46</td>
<td>.89</td>
<td>.64</td>
</tr>
<tr>
<td>use therapeutic tasks to make changes outside sessionb</td>
<td>1.08</td>
<td>0.54</td>
<td>.67</td>
<td>.44</td>
</tr>
</tbody>
</table>

Note: ICC = intraclass correlation coefficient; TPOCS-A = Therapy Process Observational Coding System for Child Psychotherapy–Alliance Scale; \(M = \text{mean}; SD = \text{standard deviation}\).

<table>
<thead>
<tr>
<th>Item Description</th>
<th>M</th>
<th>SD</th>
<th>ICC</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bond subscale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task subscale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item score is reversed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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TABLE 4
Means, Standard Deviations and Range of the Alliance, Motivation, and Treatment Credibility Measures

<table>
<thead>
<tr>
<th></th>
<th>TPOCS–A</th>
<th>TASC–C</th>
<th>TASC–T</th>
<th>NML</th>
<th>CS</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (SD)</td>
<td>3.30 (.76)</td>
<td>3.30 (0.44)</td>
<td>3.41 (0.33)</td>
<td>1.34 (0.40)</td>
<td>5.98 (1.56)</td>
</tr>
<tr>
<td>Range</td>
<td>0.77–4.22</td>
<td>2.33–4.00</td>
<td>2.42–4.00</td>
<td>0.27–1.93</td>
<td>3.00–8.00</td>
</tr>
</tbody>
</table>

*Note: TPOCS–A = Therapy Process Observational Coding System for Child Psychotherapy–Alliance Scale; TASC–C = Therapeutic Alliance Scale for Children–Child version; TASC–T = Therapeutic Alliance Scale for Children–Therapist version; NML = Nijmegen Motivation List; CS = Credibility Scale.

items had loadings above .30 on Factor 1, and three items had loadings above .30 on Factor 2. One item (i.e., “not comply with therapeutic tasks”) crossloaded on both factors (i.e., item loading above .32 on both factors; Costello & Osborne, 2005), with loadings of .37 on Factor 1 and .57 on Factor 2. All five positively formulated TPOCS–A items (e.g., “collaborate on therapeutic tasks”) loaded higher on Factor 1; however, only three of the four negatively formulated TPOCS–A items (e.g., “act in a hostile, critical, or defensive manner”) loaded higher on Factor 2. As a result, the two-factor solution was difficult to interpret because it was not consistent with (a) the “positive” and “negative” alliance factors seen in the adult literature (Hatcher & Gillaspy, 2006; Krupnick et al., 1996), or (b) the hypothesized bond and task structure (Shirk & Saiz, 1992). The one-factor solution accounted for 64.86% of the total variance (eigenvalue = 5.84), and produced adequate item loadings that ranged from .44 to .87 (M = .77, SD = .14). This indicated that each item was at least moderately representative of the alliance construct (Costello & Osbourne, 2005).

A review of the nine items indicated that one might be problematic. As previously noted, one item crossloaded on the two factors (i.e., “not comply with therapeutic tasks”). Crossloading can indicate inadequate items (Costello & Osbourne, 2005) or result from sampling error. We decided to retain the item, because the item assesses an important dimension of the alliance and the item loading (.81) was high on the one-factor solution. However, future research should continue to evaluate the adequacy of this item.

The converging evidence across the two solutions indicated that a one-factor solution was most appropriate. The scree plot indicated a substantial decrease between Factor 1 and Factor 2. The initial factor accounted for more than half of the variance (62.19%), and the second factor only explained a modest amount of variance (9.57%). The high internal consistency of the full scale supports the one-factor solution (z = .92). Finally, the one-factor solution provided the only result that was interpretable from a theoretical perspective. We therefore concluded our factor analytic findings indicate that the TPOCS–A is best characterized by a one-factor solution. See Table 3.

TPOCS–A Validity

Next, we examined the convergent validity of the TPOCS–A (i.e., the magnitude of the correlations between the TPOCS–A and the other alliance measures), as well as the discriminant validity (i.e., magnitude of the correlations between the TPOCS–A and the other process measures). The correlations were interpreted following Cohen’s (1992) 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. There are no clear cutoff criteria for interpreting validity coefficients when determining convergent and discriminant validity; however, coefficients above .40 have been suggested to indicate satisfactory concurrent validity (Ary, Jacobs, & Razavieh, 2010). The correlations between the TPOCS–A and the self-report alliance measures (TASC–C, TASC–T) were significant and large (M r = .52). In comparison, the correlations between the TPOCS–A and the process measures (i.e., NML, CS) were not statistically significant and were small to medium in magnitude (M r = .24). Together, these findings support the convergent and discriminant validity of the TPOCS-A. See Table 5.

TABLE 5
Product–Moment Correlations Between the Alliance, Motivation, and Treatment Credibility Measures

<table>
<thead>
<tr>
<th></th>
<th>TPOCS–A</th>
<th>TASC–C</th>
<th>TASC–T</th>
<th>NML</th>
<th>CS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TASC–C</td>
<td>.50**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TASC–T</td>
<td>.54**</td>
<td>.38*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NML</td>
<td>.21</td>
<td>.27</td>
<td>.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS</td>
<td>.26</td>
<td>.40**</td>
<td>.13</td>
<td>.35*</td>
<td></td>
</tr>
</tbody>
</table>

*Note: TPOCS–A = Therapy Process Observational Coding System for Child Psychotherapy–Alliance Scale; TASC–C = Therapeutic Alliance Scale for Children–Child version; TASC–T = Therapeutic Alliance Scale for Children–Therapist version; NML = Nijmegen Motivation List; CS = Credibility Scale.

“p < .05. **p < .01.

DISCUSSION

Few studies have investigated the psychometric properties of alliance measures used for youth psychotherapy. The aim of the present study was to address this gap by examining the factor structure and psychometric properties of the observer-rated TPOCS–A in a sample of Norwegian youth diagnosed with anxiety disorders. Our findings supported a one-factor solution, suggesting...
that the alliance in youth psychotherapy may be unidimensional. Additional analyses supported the interrater reliability, internal consistency, and the discriminant and divergent validity of the TPOCS–A.

Our findings contribute to a small but growing body of evidence that suggests the alliance in youth psychotherapy may be defined by a single factor (DiGiuseppe et al., 1996; Faw et al., 2005; Hogue et al., 2006). The self- and observer-report alliance measures designed for youth psychotherapy subjected to factor analysis (i.e., ATAS, AWAI, TPOCS–A, and VTAS–R) have all indicated one-factor solutions. Conceptually, there is some overlap among the measures, as each measure was designed to assess the bond (affective aspects of the alliance) and task (participation in therapeutic activities) alliance dimensions. However, the ATAS and the AWAI also assess client and therapist agreement on the goals of treatment, called the goal dimension (DiGiuseppe et al., 1996; Faw et al., 2005). Despite this difference, the accumulating evidence indicates that adolescents and observers do not seem to discriminate between the different alliance dimensions in youth therapy (DiGiuseppe et al., 1996; Faw et al., 2005; Hogue et al., 2006). This raises the possibility that in youth therapy, failure to establish one aspect of the alliance, such as a strong affective connection, may result in a poor overall alliance (Elvins & Green, 2008). Similarly, failing to engage the child in therapeutic activities may affect the emotional bond between the therapist and the child.

Although our findings suggest a one-factor solution, it is prudent to consider how methodological issues may have influenced our results. First, the studies that have examined the factor structure of youth alliance measures had small sample sizes, which may have biased results. Second, it is possible that the TPOCS–A, as well as the other alliance measures for youth psychotherapy subjected to factor analysis, lacked specificity. Items for each measure were drawn from scales originally developed for adult psychotherapy. It therefore is plausible that the measures may not capture all aspects of the alliance relevant to youth psychotherapy (Elvins & Green, 2008). If true, then the lack of specificity (e.g., lack of adjustment for developmental level) may have increased the likelihood of producing a one-factor model. More research into the conceptual underpinnings of the alliance in youth psychotherapy with larger samples is needed in order to test these possibilities and determine whether existing alliance measures capture all relevant facets of the alliance. Toward this end, further exploration of the factor structure of validated self-report alliance measures represents an important step for future research. Ideally, such research could build an empirical base from which the predictive validity of alliance measures may be more precisely assessed with both observer- and self-report alliance measures.

The present study has some limitations, of which the small sample size is the most salient. We had less than six participants per scale item. Although some assert that five participants per scale item is sufficient (Field, 2009; Stevens, 2009), others argue that the “N-to-variable” rule is inadequate and that other factors (e.g., factor/component saturation, the number of variables and factors) need to be considered to establish sample-to-population fit (Guadagnoli & Velicer, 1988). Indeed, the small sample size may have resulted in a Type II error whereby the small sample did not permit detection of additional factors. Second, the interrater reliability of two of the TPOCS–A items only reached the “fair” level (Cicchetti, 1994), which introduces additional between rater error in the scoring of these items. Third, because the sample was comprised of youth with anxiety disorders, the findings may not generalize to youth with other diagnoses. Fourth, because our sample of therapists was comprised mostly of women, our findings may not generalize to male therapists. Finally, we cannot rule out the possibility that different results would have emerged if the study was conducted in a different culture and/or with a sample that was more ethnically diverse. To address these limitations, future research will need to assess whether the findings generalize to larger, more diverse samples.

It is also important to highlight the strengths of the current study, which include the use of a well-defined treatment group and the inclusion of multiple perspectives on alliance. Furthermore, our sample of children referred to public mental health clinics with “real-life” clinicians increases the ecological validity of the results.

Implications for Research, Policy, and Practice

Our findings provide further support for the interrater reliability, internal consistency, and construct validity of the TPOCS–A. Coders were able to reliably code the alliance in CBT sessions for anxious children delivered in public community settings. In addition, the observer-rated TPOCS–A converged with child-report (TASC–C) and therapist-report alliance (TASC–P) scales, which is consistent with previous TPOCS–A findings (McLeod & Weisz, 2005). The TPOCS–A did not significantly overlap with other process measures (i.e., treatment motivation and credibility). When considered together with previous findings supporting the psychometric properties of the TPOCS–A used with youth (Chiu et al., 2009; Langer et al., 2011; Liber et al., 2010; McLeod & Weisz, 2005), our findings indicate sound construct validity of the TPOCS–A as a measure of observed alliance.
Although more research is needed to help identify the specific ways in which the alliance is formed, the current findings suggest that establishing a strong bond with a child and engaging the child in therapeutic activities are both instrumental to establish a good alliance early in treatment. Future research can build upon these findings by working to identify specific therapist behaviors associated with alliance formation in youth psychotherapy.

REFERENCES


