

The Adolescent Therapeutic Alliance Scale (ATAS): Initial psychometrics and prediction of outcome in family-based substance abuse prevention counseling

LEYLA FAW¹, AARON HOGUE¹, SUZANNE JOHNSON², GARY M. DIAMOND³, & HOWARD A. LIDDLE⁴

¹The National Center on Addiction and Substance Abuse, Columbia University, New York, USA, ²Department of Psychiatry, Massachusetts General Hospital, Boston, MA, USA, ³Ben-Gurion University of the Negev, Beer-Sheva, Israel, and ⁴Center for Treatment Research on Adolescent Drug Abuse, Department of Epidemiology and Public Health, University of Miami School of Medicine, Miami, FL, USA

(Received 29 July 2002; revised 21 May 2003; accepted 14 May 2003)

Abstract

This study piloted a 14-item, observer-rated therapeutic alliance scale with adolescents enrolled in family-based substance abuse prevention counseling. The Adolescent Therapeutic Alliance Scale (ATAS) was drawn from 2 main sources: (a) items from the Vanderbilt Therapeutic Alliance Scale–Revised based on developmental considerations and (b) Bordin's (1979) theory of the alliance as consisting of bond, tasks, and goals. Independent observers rated the therapist–adolescent alliance for 51 at-risk, African American adolescents (aged 11–14 years). Factor analysis suggested the ATAS measures one construct (eigenvalue = 8.6, accounting for 61.3% of total scale variance). Item loadings ranged from .40 to .90. Convergent validity with both therapist- and observer-rated engagement was also high. Internal consistency reliability ($\alpha = .90$) and intraclass correlation ($ICC_{1,2} = .74$) were acceptable. A trend emerged for ATAS ratings to predict improvement in adolescent investment in school. Recommendations are made for future work in developing and implementing measures of therapeutic alliance for adolescents.

Keywords: *Therapeutic alliance, adolescent development, substance abuse, family-based therapy, therapeutic processes*

The therapeutic alliance is a critical component of the psychotherapy process with adults. Bordin's (1979) conceptualization of the alliance is widely used because it is clearly defined and measurable and can be applied to most theoretical orientations. His definition consists of three interlocking components of the therapist–client relationship: (a) bond (a sense of liking and trust between therapist and client); (b) goal (agreement on the goals of therapy); and (c) task (agreement on the specific activities that facilitate movement toward intervention goals). The extensive empirical literature on therapeutic alliance with adult clients has been reviewed elsewhere (Horvath, 2001; Martin, Garske, & Davis, 2000). In a meta-analysis of 79 alliance studies conducted over the past two decades, Martin et al. (2000) found an average effect size of .22 for the alliance–outcome relation. This moderate effect was consistent regardless of who rated the alliance (e.g., client, therapist, observer), when the alliance was measured

(e.g., early or late in treatment), type of outcome measure, or type of treatment. In a slightly more inclusive review, Horvath (2001) estimated that just over half of the positive outcomes attained in psychotherapy are linked to quality of the alliance.

Therapeutic alliance with children and adolescents

Research on therapeutic alliance with children and adolescents lags far behind research with adults. To date, three published studies have focused on instrumentation in measuring therapeutic alliance in youthful samples. DiGiuseppe, Linscott, and Jilton (1996) adapted the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989) by lowering the reading level for adolescents aged 11 to 18 years. The WAI demonstrated adequate internal consistency ($\alpha > .90$) in the sample, and factor analysis yielded one large factor, a general alliance factor. A

Correspondence: Aaron Hogue, National Center on Addiction and Substance Abuse, Columbia University, 633 3rd Avenue, 19th floor, New York, NY 10017, USA. E-mail: athogue@aol.com

second study (Diamond, Liddle, Hogue, & Dakof, 1999) used a revised version of the observer-rated Vanderbilt Therapeutic Alliance Scale (VTAS; Hartley & Strupp, 1983), also designed originally for use with adults, to rate therapeutic alliance for adolescents (mean age = 15 years) in family therapy. Internal consistency and intraclass correlation (ICC) were high ($\alpha = .95$; $ICC_{2,11} = .83$). Finally, Shirk and Saiz (1992) developed a self-report measure of affective orientation to child therapy. The measure included Bond and Negativity subscales. The measure demonstrated adequate internal consistency in a sample of 7- to 12-year-old psychiatric inpatients. Cronbach's $\alpha = .72$ and $.74$, respectively, for the Bond and Negativity scales on the child version and $.88$ and $.72$, respectively, for the therapist version.

Two additional studies have analyzed the relation between alliance and outcome in adolescents. Eltz, Shirk, and Sarlin (1995) found that positive change in alliance over time predicted greater improvement in treatment regardless of whether alliance was rated by the therapist or the adolescent. Florsheim, Shotorbani, Guest-Warnick, Barratt, and Hwang (2000) assessed therapeutic alliance between delinquent adolescent boys and clinical staff in community-based programs. Positive working alliance (rated by both adolescents and staff) predicted symptom improvement and treatment retention.

In these five studies with adolescents, the alliance construct has been directly imported or mildly revised from adult scales. Results demonstrated acceptable internal consistency reliability and provided preliminary evidence of interrater reliability. The findings also provide preliminary evidence that, when adult scales are used to measure adolescent alliance, the alliance may be unidimensional, and it may be positively linked to outcomes. To date, there has been no systematic attempt to measure the validity of the alliance construct in adolescents. Some adolescents may lack key skills relevant to developing an alliance (e.g., cognitive maturity, self-awareness, autonomy), whereas others may be more developed in such areas. Recognizing these considerations, the current study sought to adopt a more developmentally sensitive approach to operationalizing therapeutic alliance in an adolescent sample. Although an adult alliance scale served as the starting point, items were changed based on a collective process of examining the scale and rating several videotaped adolescent therapy sessions. The current study thus represents an initial step to measure the validity and reliability of an alliance scale developed specifically for adolescents.

Study aims and hypotheses

Given the limited scope of past work on the adolescent alliance, this study involved two major aims: (a) to design a developmentally appropriate scale to measure the therapeutic alliance between adolescent and therapist in the context of family-based prevention and test its psychometric properties and (b) to examine the relation between alliance and posttreatment outcomes. After the scale was written and administered, its factor structure and preliminary reliability and validity were examined. Next, treatment outcomes were examined in relation to alliance. Outcomes examined in this study were chosen based on findings from a randomized trial in which the adolescent participants were enrolled. In the randomized trial, family-based prevention counseling produced improvements in four immediate outcomes compared with no-intervention controls: (a) global self-worth, (b) family cohesion, (c) bonding to school, and (d) decreased peer antisocial behavior. Alliance was hypothesized to predict these established prevention gains in the study sample.

Methods

Development of the alliance scale

The Adolescent Therapeutic Alliance Scale (ATAS; Johnson, Hogue, Diamond, Leckrone, & Liddle, 1998) is an observer-rated instrument designed to measure salient dimensions of the therapist-adolescent working alliance in any type of counseling situation. In deciding what factors to represent in the scale, theoretical and empirical literature on alliance scales that have been used in both adolescent and adult samples was consulted. This review unearthed two main dimensional conceptualizations for alliance scales: (a) patient contribution versus patient-therapist contribution to the alliance and (b) Bordin's (1979) theory of bond, tasks, and goals comprising the alliance construct. Past studies have found that the patient contribution and patient-therapist contribution to the alliance are distinct and can be reliably measured (Krupnick et al., 1996). Factor analyses of the WAI, which was written specifically to assess the bond, goal, and task dimensions of alliance, have found these dimensions to be highly correlated (DiGiuseppe et al., 1996; Tracey & Kokotovic, 1989).

The 44-item VTAS (Hartley & Strupp, 1983) was used as a starting point for construction of the new scale. The VTAS was chosen for three reasons. First, the scale includes Therapist, Patient, and Patient-Therapist Contribution subscales. Second, the scale's items could be easily categorized into Bordin's bond, goal, and task dimensions. Third, in a

study focused on adolescents in family therapy, Diamond et al. (1999) found that the VTAS measured adolescent alliance with high interrater reliability and internal consistency. The VTAS items were revised to make the scale (a) applicable across the adolescent age span, including young adolescents; (b) applicable across a variety of intervention contexts, including prevention; and (c) sensitive to important developmental issues for adolescents. As a first step in the revision process, all therapist contribution items on the VTAS were excluded for two reasons. First, therapists providing a common treatment model are likely to perform many of the same tasks, leading to low variability in observer ratings of therapist contribution. Second, therapist contribution items have demonstrated low reliability and predictive power (Krupnick et al., 1996).

In the next major step, seven of the remaining VTAS items were deleted or reworded because they were not developmentally suitable for the general adolescent population, which includes those at younger and older ends of the age spectrum. For example, the item "Seems to be engaged in a power struggle" captures subtle or covert control issues that do not characterize well the dynamics of therapy with youth. After six such items were deleted, one VTAS item, "Makes an effort to carry out therapeutic procedures suggested by the therapist," was kept but reworded into a more developmentally sensitive item. Specifically, the concept of completing tasks was replaced by the concept of understanding tasks. The revised item, "Understands what he was asked to do by the therapist and/or why he was asked to do it," is scored higher when an adolescent understands and completes a therapeutic task and lower when he or she does not seem to understand the task. In our view (Liddle, 1995; Liddle & Diamond, 1991), concepts such as resistance and power struggles do not translate well and do not promote effective intervention with hard-to-engage adolescents.

Next, because the VTAS was written specifically for use in individual psychotherapy settings, additional items were deleted and revised to make the ATAS applicable to any type of counseling setting. Adolescents are more likely than adults to be involved in preventive interventions and are less likely to be self-referred. These concerns were addressed in three ways. First, seven psychotherapy-specific items were removed. For example, the item "Expresses that he feels better since beginning therapy" would not apply to prevention situations in which a specific referring problem has not been identified for intervention. Next, four items specific to individual therapy were kept but reworded to apply more broadly to other types of intervention. For example, "Share a common viewpoint about the

definition, possible causes, and potential alleviation of the adolescent's problems" was changed to the more widely applicable "Share a common viewpoint about the general goals of therapy." Finally, one new item was written to capture directly the process of forming goals in a general counseling situation: "Share a general feeling of certainty that the therapeutic goals will be reached."

This process of deleting, changing, and creating items resulted in an alliance scale applicable to adolescents regardless of their stage of development. The ATAS was conceptualized as a common denominator scale (i.e., the items only take into account skills that the earliest adolescent should have acquired). The ATAS was also applicable to any type of counseling situation. After the scale was initially piloted on three videotaped sessions, some of the items were slightly edited as needed to facilitate more reliable coding. The final scale consisted of 14 items, split into Patient Contribution and Patient-Therapist Contribution subscales, with each item reflecting the bond, task, or goal component of the alliance. All scale items are listed in Table I.

Sampling procedures

Screening, recruitment, and attrition. Participants were recruited from an after-school community-based academic enrichment program to take part in a preventive family counseling intervention. This intervention was part of a study of family-based prevention of drug use and delinquency. Students who were registered for the after-school program completed a screening inventory to assess risk factors for drug use and antisocial behavior in four areas: (a) adolescent drug use behavior and attitudes and delinquent behavior; (b) peer drug use behavior and attitudes; (c) family drug use history and attitudes and history of police involvement; and (d) adolescent school attendance, performance, and behavior. Those determined to be at moderate or high risk were eligible for the study (see Hogue, Liddle, Becker, & Johnson-Leckrone, 2002, for a complete description of risk-screening procedures).

Overall, 128 families entered the study. Adolescents were randomly assigned to either multidimensional family prevention (MDFP; $n = 65$) or the control group ($n = 63$). Adolescents and their caregivers separately completed a baseline assessment and a posttest assessment approximately four months later. Only families in the intervention group were included in the current study. Fourteen families could not be included because they did not complete a posttest assessment or did not hold a videotaped session. Fifty-one MDFP families had both baseline

and posttreatment data in addition to at least one taped session that could be coded for alliance.

Alliance coding design. Treatment was split into three phases: Phase 1 (Sessions 1–5), Phase 2 (Sessions 6–12), and Phase 3 (Sessions 13 and above). Within each phase, two sessions were selected for alliance coding to maximize measurement reliability for each phase, resulting in a maximum of six sessions for a single case. The two tapes chosen from each phase consisted of an early-phase and a late-phase session, maintaining a gap of at least two sessions between phases whenever possible. The final session of any case was never rated because of concerns that it might be structured differently in terms of tasks and goals. When choosing the two sessions to code from each phase, there were two requirements. First, the session must have been videotaped. Second, the adolescent must have been present in the session for at least 15 min. In MDFP, as in most adolescent-focused family-based interventions, adolescents do not usually attend every session for the full length of the session. Across the 51 families included in the study, 206 sessions total were rated; 51 cases provided at least one Phase 1 session; 38 cases provided sessions from Phases 1 and 2; and 22 cases provided sessions from all three phases. The mean number of minutes rated per tape was 44.3 ($SD = 16.6$ min).

Description of the study sample. The current sample of 51 adolescents ranged from 11 to 14 years old at intake ($M = 12.5$ years). Ninety-six percent attended Grades 6 through 8. All participants identified themselves as African American, and 26 (51%) were girls. Caretaking arrangements were as follows: single parent, 45%; two parents, 29%; grandparents, 14%; and other, 12%. Annual family income ranged from \$8,000 to \$20,000 (65% less than \$15,000).

Intervention procedures

Intervention model. The MDFP intervention (Liddle & Hogue, 2000) is a developmental–ecological family-based intervention for indicated-risk adolescents. MDFP seeks to influence within-family interactions as well as interactions between the family and relevant social systems. MDFP is a home-based model (counselors hold sessions in the home, clinic, or community sites such as schools and churches). Session composition varies on a case-by-case and session-by-session basis, and counselors regularly spend time working individually with family members to accomplish familywide goals. Fifteen to 25 sessions are held over three to four months, depending on the nature and severity of issues presented.

MDFP aims to prevent drug use and antisocial behavior in high-risk youth by means of two intermediate intervention goals for families: (a) helping adolescents achieve an interdependent attachment bond to parents and family and (b) helping adolescents forge durable connections with prosocial influences such as schools, prosocial peer groups, and recreational and religious institutions. MDFP therapists are trained to use specific tools to engage families in treatment. Some of these strategies include focusing on alliance building with each family member, capturing the interest of the family from the outset of the session, and asking questions that encourage recall of family history to evoke emotion and create a climate of empathy. Becker, Hogue, and Liddle (2002) have studied the process of fostering engagement in MDFP in depth. MDFP fidelity was monitored in the randomized trial and evaluated using adherence process evaluation procedures (see Hogue et al., 2002).

MDFP intervention effects were examined at posttreatment for nine targeted outcomes within four domains of adolescent developmental functioning: self-competence (global self-concept, drug use attitudes), family functioning (family cohesion, parental monitoring), school involvement (school bonding, grades, school delinquency), and peer associations (prosocial involvement, peer delinquent behavior). MDFP cases showed greater gains than controls on four outcomes, one within each of the four domains: increased self-concept, family cohesion, bonding to school, and decreased antisocial behaviors by peers (Hogue et al., 2002). Effect size estimates were in the small to moderate range. Further analyses showed that intervention effects did not differ across dosage level (those attending at least 15 sessions vs. those attending 4–14) and that outcomes were not moderated by gender, age at intake, or severity of risk profile at intake.

Therapists. Five therapists participated in the study. One had a doctorate in psychology, 3 were master's-level counselors in family therapy, and 1 had a master's degree in counseling psychology. All were male. Two were African American, 1 was Asian American, and 2 were Caucasian (mean age = 32 years). They averaged 2.6 years of training and experience in family therapy. All five therapists received approximately 95 hr of didactic and clinical training in the MDFP intervention, including completion of at least two training cases.

Assessment procedures

Coding the sessions. Sessions chosen for alliance coding were each assigned to two coders by means of

a randomized block design (Fleiss, 1981) to ensure that each coder was paired with every other coder an equal number of times. Coders viewed and rated the videotaped sessions independently. After viewing only the portion of the session in which the adolescent was present, regardless of whether other family members were present, coders completed the ATAS for that session. In any study examining adolescent alliance in a family treatment model, it is likely that sessions involving other family members will be included. Findings based on this method have shown that the therapist–adolescent alliance can be productively analyzed as an independent, meaningful element of the therapy process within family-based models (Diamond et al., 1999).

Coders. ATAS coders were 8 female undergraduate psychology students: one Asian American, one Indian American, three African Americans, one Hispanic American, and two European Americans (age range = 20–26 years). Each coder was trained on ATAS coding procedures, including independently rating 20 videotaped MDFP sessions not included in the study sample. Interrater reliability for the coding group after training sessions was acceptable ($ICC_{1,2} > .65$ for all items). Coders and trainers met at least three times per month during the study to prevent rater drift. Interrater reliability was computed regularly and remained adequate throughout the study. ATAS scores were averaged across both raters for all analyses except interrater reliability.

Measurement instruments

Alliance. The ATAS was used to measure alliance. All items on both the Patient Contribution and the Patient–Therapist Contribution subscales capture Bordin’s (1979) three-factor conceptualization of the alliance. Bond is operationalized so that observers rate the extent to which behaviors that indicate liking, respect, and trust occurred in the session (see Table I for a list of all ATAS items). Tasks are defined as the specific activities in which the therapist and adolescent engage to facilitate change. Goal items, which refer to both general and specific areas targeted for change, are scored only if a counseling goal is mentioned in the session, whereas all task and bond items are scored for every session. The scale is coded only if the adolescent attends the session for at least 15 min so that an adequate sample of the interpersonal process can be observed. Each item is rated on a 6-point scale ranging from 0 (*none at all*) to 5 (*a great deal*). The ATAS is scored as the sum of all item scores divided by 14 (i.e., the average item score). Within each category, some

items focus on only the adolescent’s behavior (e.g., “To what extent did the adolescent indicate that she experienced the therapist as understanding and supporting her?”), and other items focus on the behaviors of the therapist and adolescent together (e.g., “To what extent did the therapist and adolescent together share a common viewpoint about the general goals of therapy?”).

Engagement. The degree of client engagement in therapy was assessed twice: by the therapist and by a nonparticipant observer. In both cases, ratings were based on the engagement of all participants in the session as a whole. Therapist report data were available for 194 sessions, and observer ratings were available for 43 sessions. Although the therapeutic alliance has been associated with engagement (Sexton, Hembre, & Kvarme, 1996), the construct of engagement differs from the alliance in its relative lack of precision. The client’s level of engagement in the session is only a portion of the alliance construct. Therapist self-reports of engagement were based on their answers to the following question, completed after each session: “How receptive and/or engaged were the participants during the session?” This question was rated on a 7-point scale ranging from 1 (*not at all*) to 7 (*extremely*). In addition, as part of the treatment adherence evaluation component of the prevention trial, a separate group of coders scored the following item after viewing sessions selected randomly from all phases of therapy: “How receptive and/or engaged was the client during the session?” This item was also rated on a 7-point scale ranging from 1 (*not at all*) to 7 (*extremely*). The ICC for observer ratings of engagement for sessions used in the current study was .77 (based on the average of two raters).

Client symptomatology. Externalizing and internalizing symptoms were measured using both parent and adolescent self-report. The Revised Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983) is a parent self-report measure that assesses children’s behavioral problems. The CBCL contains groupings of both externalizing (delinquent and aggressive) and internalizing (withdrawn, anxious/depressed, somatic complaints) symptoms. The CBCL has demonstrated acceptable convergent validity with other measures of child behavior problems ($r_s = .56-.86$), test–retest reliability of .93, and interparent reliability of .66 for internalizing and .80 for externalizing (Achenbach, 1991a). The Youth Self-Report (YSR; Achenbach & Edelbrock, 1987) is an adolescent self-report measure that parallels the CBCL in form and content. Factor analysis supports internalizing and externalizing

Table I. Adolescent Therapeutic Alliance Scale items: Theoretical factors, intraclass correlation coefficients (ICCs), and factor loadings from standard and three-mode factor analysis.

| Item | Factor loading ^c | | | |
|---|-----------------------------|-----------------------------|--------|--------|
| | ICC _{1,2} | Factor loading ^b | Sol. 1 | Sol. 2 |
| To what extent did the adolescent: | | | | |
| B: 1. Indicate that he/she experienced the therapist as understanding and supportive | .66 | .90 | .86 | .73 |
| T: 2. Seem to identify with the therapist's method of working, see self as an active participant in therapy | .63 | .90 | .86 | .88 |
| G: 3. Indicate that participation in the treatment program may be helpful in exploring areas of life | .63 | .81 | .82 | .83 |
| T: 4. Understand what he/she was asked to do by the therapist and/or why he/she was asked to do it | .67 | .87 | .89 | .85 |
| B: 5. Talk freely, openly, and honestly with the therapist about thoughts, feelings, and behavior | .64 | .85 | .75 | .77 |
| B: 6. Act in a mistrustful or defensive manner toward the therapist or therapy | .59 | .56 | .65 | .75 |
| T: 7. Indicate a willingness to try out behaviors or to think about things in a way that is congruent with the tasks of therapy | .68 | .88 | .91 | .94 |
| To what extent did the therapist and adolescent together: | | | | |
| B: 8. Appear engaged and invested, which made the session seem alive and energetic | .54 | .85 | .88 | .87 |
| G: 9. Share a common viewpoint about the general goals of therapy | .60 | .71 | .76 | .83 |
| B: 10. Maintain a friendly but professional relationship, neither too distant nor too involved | .54 | .80 | .82 | .84 |
| T: 11. Seem to be "picking up where they left off" or laying the foundations for the next session | .46 | .41 | .64 | .34 |
| G: 12. Share a general feeling of certainty that therapeutic goals will be reached | .47 | .78 | .77 | .84 |
| T: 13. Allow the session to become ruminative, empty, or boring without a clear trend or theme | .19 | .53 | .64 | .30 |
| B: 14. Seem anxious, uncomfortable with each other, or were at an impasse | .55 | .66 | .70 | .68 |

^aThe standard factor analysis was computed using the base sample of 51 early-treatment sessions. For the three-mode factor analysis, Solution 1 refers to the factor solution based on participant scores averaged across all available sessions, whereas Solution 2 refers to the factor solution based on session scores averaged across all observations. ^bStandard analysis. ^cThree-mode analysis. *B* = bond; *G* = goal; *T* = task.

groupings of behavioral problems. Achenbach (1991b) has reported internal consistencies ranging from .89 to .91 and 7-month test-retest reliability of .49 for externalizing and .52 for internalizing.

Self-worth. The Self-Perception Profile for Adolescents (SPPA; Harter, 1988) is a self-report instrument designed to assess an adolescent's sense of overall competence in various personal and social domains, one of which is global perception of one's worth as a person. The five-item Global Self-Worth subscale, used in the current study, has been used in studies with lower income African American pre-adolescent samples (Cauce, 1987). The SPPA has demonstrated subscale reliabilities ranging from .55 to .93 and has high internal consistency as well as convergent, construct, and discriminate validity (Harter, 1983).

Family cohesion. Family cohesion was assessed using a latent family cohesion variable derived from

the Family Relations Scale (FRS; Gorman-Smith, Tolan, Zelli, & Huesmann, 1996). The FRS is a 35-item self-report scale developed in connection with a longitudinal study of risk and protective factors in the development of antisocial behavior among inner-city minority adolescents. The FRS generates family-level scores across six domains by aggregating across parent and adolescent reports. The family cohesion variable is derived by combining scores from four individual subscales of the FRS: Emotional Cohesion, Communication, Support, and Organization ($\alpha = .57-.80$; Tolan, Gorman-Smith, Huesmann, & Zelli, 1997).

Bonding to school. A school bonding measure was taken from a study that examined the relation between school involvement and delinquent behavior in a national sample of high school adolescents (Fletcher, Darling, Steinberg, & Dornbusch, 1995). The self-report measure contains 11 Likert-type items (sample $\alpha = .73$) on a 4-point scale (ranging

from *strongly agree* to *strongly disagree*) and includes subscales for bonding to teachers (e.g., “My teachers care about how I’m doing”) and orientation to school (e.g., “Most of my classes are boring”).

Peer antisocial behavior. The Peer Antisocial Behavior measure is an 11-item self-report instrument adapted from an Oregon Social Learning Center questionnaire (Patterson, Dishion, Reid, Capaldi, & Forgatch, 1984) to survey peer deviance. Adolescents are asked how many of their friends have participated in various delinquent activities over the past year (responses range from *none of them* to *all of them*). Variations of this measure have been used to determine the effects of delinquent peer influences on adolescent behavior (Larzelere & Patterson, 1990). A parent version has also been used to measure children’s antisocial inclinations (Patterson & Bank, 1986). Cronbach’s alpha for the ratings of mothers and fathers were .83 and .81, respectively.

Outline of session sampling design. Most study analyses used ATAS scores from only one session per adolescent, following the lead of past research. Session 3 was chosen for three reasons: (a) Choosing earlier sessions minimizes sample attrition, (b) the first and second sessions often involve initial assessment and agenda-setting issues, and (c) research has found no differences in the predictive power of alliance when measured during the early, middle, or late phase of treatment (Martin et al., 2000). For cases with no Session 3 rating ($n=12$), either Session 1 ($n=3$) or Session 2 ($n=9$) was used instead. Although this sample of 51 early sessions served as the base sample for study analyses, multiple sessions per case were used to enhance some psychometric analyses and to enable examination of some hypotheses about the relation between alliance and retention. Sampling methods are specifically described whenever different from the base sample of 51 sessions.

Results

Part I: Psychometric analysis of the ATAS

Factor analysis. Exploratory factor analysis was conducted using two approaches: standard two-mode factor analysis and three-mode factor analysis. For the two-mode analysis, principal-axis factoring was applied to the base data set of 51 early sessions. Direct oblimin rotation was used because the factors were expected to be intercorrelated. The pattern matrix of factor loadings was interpreted based on the following criteria (Grice, 2001): (a) Factor loadings were required to be .3 or higher to retain;

(b) items were retained on the factor on which they loaded most strongly; and (c) items were not permitted to load on more than one factor. The initial exploratory analysis extracted three factors that accounted for 79.9% of the total scale variance ($KMO^1 = .88$). Eigenvalues were 8.6 for Factor 1, 1.5 for Factor 2, and 1.1 for Factor 3. However, the pattern of item loadings was not consistent with either the patient versus patient–therapist contribution structure or the hypothesized bond, goal, and task structure. Thus, this initial solution was theoretically uninterpretable. One- and two-factor solutions were then extracted. In the one-factor solution, the eigenvalue for Factor 1 was high (8.6). Item loadings ranged from .40 to .90, and this factor accounted for 61.3% of the total scale variance. In the two-factor solution, only modest additional variance was explained (10.6%). Eigenvalues were 8.6 for Factor 1 and 1.5 for Factor 2, and the two factors were highly correlated, $r(51) = .64$.

Converging evidence from the three solutions suggested that a one-factor solution was most appropriate. Across all three solutions, the initial factor explained more than half of the scale variance, second and third factors explained only modest additional variance, scree plots showed a precipitous decline from Factor 1 to Factor 2 followed by stabilization, and the one-factor solution provided the only cohesive theoretical result. In exploratory factor analysis, pooling across various sources of information such as these is considered the optimal interpretive method (Fabrigar, Wegener, MacCallum, & Strahan, 1999). Factor loadings from the one-factor extraction are shown in Table I.

In a second round of exploratory factor analysis, three-mode factor analysis as described by Gorsuch (1983) was applied to the data in an attempt to capitalize on the high number of observations available across study participants ($N=206$) while providing some compensation for the confounds present in study samples that contain multiple observations per participant (e.g., nonindependence of observations and uneven distribution of observations within the sample). This method added to the previous sample size of 51 by including all available observations for each person. In addition to increasing the power of the analysis, the extra observations increased the validity of the sampling by including multiple time points across the course of therapy. In contrast to traditional factor analysis, in which two sources of variance (person and variable) are addressed, this analysis involved three sources of variance: person, variable, and occasion. When scores on a set of variables (e.g., items on a scale) are collected from one person on multiple occasions, correlated variance may exist among person, scale,

and time of measurement. In the current sample, this type of correlated variance might exist if, for example, improvements in alliance over several sessions occurred for an adolescent in relation to the passage of time. Alliance scores from later sessions might, therefore, have been systematically higher than those from earlier sessions.

The three-mode analysis was performed by conducting two separate two-mode (i.e., traditional) analyses using SPSS and comparing the resulting solutions using bivariate correlation. Although structure equation modeling methods offer a more straightforward way to deal with dependency in a data set, the size of the current sample was insufficient for this method. The two data matrices for the three-mode analysis consisted of item scores averaged either across person or across session number (e.g., Session 1, 2, or 3). In the first analysis, four sessions were available, on average, for each person, ranging from one to six sessions. This analysis controlled for variance in occasion by sampling all available session numbers for all participants ($n = 51$) and then computing one average score for each person. The second analysis controlled for variance within persons by using ATAS scores for each session number ($n = 22$), averaged across individuals.² Data were available for 22 session numbers, ranging from Session 1 to Session 36. Session 3 occurred most frequently ($n = 35$). Sessions were available across phases as follows: Phase 1 ($n = 93$), Phase 2 ($n = 69$), Phase 3 ($n = 44$).

Resulting solutions were labeled as follows: Solution 1 refers to the analysis of individual scores averaging across occasions, and Solution 2 refers to the analysis of session scores averaging across persons. Both analyses, conducted using a process identical to that of the two-mode analysis, generated a one-factor solution that best explained the variance in the ATAS. The Factor 1 eigenvalue was high in both solutions (9.1 for Solution 1 and 8.6 for Solution 2), and both scree plots revealed substantial decreases after the first factor. Factor loadings ranged from .64 to .91 in Solution 1 and from .30 to .94 in Solution 2. In both solutions, Factor 1 accounted for more than half of the total scale variance (62.2% for Solution 1; 59.0% for Solution 2). Factor loadings for the two solutions are listed in Table I.

As the final step in the three-mode factor analysis, solutions from both two-mode analyses were compared by computing a Pearson's correlation between the two sets of factor loadings obtained from the one-factor extractions. The correlation was significant, $r(14) = .78$, $p = .01$, demonstrating that the two solutions generated roughly equivalent one-factor solutions with highly comparable patterns of

factor loadings across items. This added strong support to the results of the initial factor analysis that was based on the base sample size of 51, corroborating the statistical validity of the one-factor solution. Because every item loaded at or above .30 on Factor 1 in all solutions, all items were retained on the scale for all remaining analyses. Based on the recommendations of Grice (2001), total ATAS scores were computed for each participant by summing the unweighted scores for each item and dividing by 14, the total number of items.

Reliability. Internal consistency reliability was estimated for the base sample using Cronbach's coefficient alpha. The total scale alpha was .90. Interrater reliability was assessed using the ICC_{1,2} (McGraw & Wong, 1996) based on one-way analysis of variance for averaged scores. The ICC for the ATAS total score was .74. ICCs for individual items ranged from .46 to .68 (see Table I), with the exception of one item with an ICC = .19. This item was retained nevertheless based on its face validity and on the consistency of the factor analysis solutions. The ICCs listed in Table I are Spearman-Brown corrections representing the average of the two raters for the one-way random effects model. Shrout and Fleiss (1979) place ICC reliability into the following ranges: $< .40$ = poor; $.40-.59$ = fair; $.60-.74$ = good, and $> .74$ = excellent. Based on these criteria, seven items fell were considered good and six items fair range. One item (Item 13) was considered poor.

Reliability analyses were also conducted independently for Phases 2 and 3 of treatment. The earliest session from each phase was used for each adolescent. For Phase 2, 38 sessions were identified, representing Sessions 6 through 11 (most often Session 7). Cronbach's coefficient alpha was .41, and the ICC for the ATAS total score was .42. Item ICCs ranged from .11 to .76, as follows: excellent (one item), good (three items), fair (five items), and poor (five items). For Phase 3, 22 sessions were available, ranging from Session 13 to Session 36 (most often session 14). Cronbach's $\alpha = .96$, and the ICC for the total scale score was .79. Item ICCs ranged from .03 to .80 as follows: excellent (one item), good (nine items), fair (two items), and poor (one item).

Validity. Before examining convergent validity, the effects of who participated in the session (i.e., adolescent alone vs. adolescent plus another family member) were examined in relation to ATAS total scores. Data on who participated in the session were available for 196 of the 206 study tapes. A t test showed that ATAS total scores based on sessions in

which only the adolescent was present ($n = 40$) were not significantly different from total scores based on sessions with multiple participants ($n = 156$; $t = .20$, $p = .85$). Convergent validity was then examined by computing correlations between ATAS total scores and therapist ratings as well as observer ratings of client engagement. In both analyses, every available session with both an ATAS rating and an engagement rating was used. For sessions comparing ATAS total scores to therapist reports of engagement, the Pearson correlation was significant, $r(194) = .31$, $p = .01$, and in the moderate range of effect sizes according to Cohen's criteria (1988). For sessions comparing ATAS total scores with independent observer ratings of engagement, the Pearson correlation was also significant, $r(43) = .70$, $p = .01$, and in the moderate to large range. These moderate and higher effect sizes provide evidence of solid convergent validity.

Part 2: Assessment of the alliance–outcome relation

Attrition effects. Before performing alliance–outcome analyses, attrition effects were examined. Initial regression analysis demonstrated no significant relation between Phase 1 ATAS scores and the number of sessions completed ($n = 51$, $\beta = -.01$, $p = .96$). To further test for attrition effects, each of the 51 participants was then designated as a completer, a partial completer, or a dropout based on the clinical judgment of the treating therapist. For each of these groups, the average number of treatment weeks and treatment sessions were as follows: completers ($n = 24$), 20.4 weeks, 21.1 sessions; partial completers ($n = 19$), 16.2 weeks, 10.4 sessions; dropouts ($n = 8$), 8.3 weeks, 2.5 sessions. To increase power, cases were organized into two groups: completers (full completers only) and non-completers (partial completers and dropouts). An independent-samples t test showed no significant difference between ATAS scores for completers ($n = 24$, $M = 3.44$, $SD = .73$) versus noncompleters ($n = 27$, $M = 3.32$, $SD = .88$; $t = .51$, $p = .61$).

Next, to examine whether improvements in early alliance predicted retention, change in ATAS total scores from early Phase 1 (Session 1 or 2) to late Phase 1 (the latest of Session 3, 4, or 5) was compared across completers versus noncompleters. Change scores were computed for every adolescent with ATAS scores from either Session 1 or 2 and from Session 3, 4, or 5 ($n = 33$). Average change in ATAS scores across the early phase of treatment was identical for the two groups ($M = .32$). Together, these attrition results indicate that neither initial

alliance score nor change in early alliance score was related to treatment retention in this sample.

Alliance–outcome relation. ATAS total scores were examined as predictors of four key developmental outcomes: bonding to school, family cohesion, peer antisocial behavior, and global self-worth. Pretreatment score for each variable was entered along with early treatment alliance (the base sample size of 51) as predictors in a simultaneous regression equation. Posttreatment scores for each outcome variable were entered as criterion variables. Results were as follows: bonding to school ($\beta = .21$, $p = .10$), family cohesion ($\beta = .10$, $p = .33$), peer antisocial behavior ($\beta = .03$, $p = .79$), and global self-worth ($\beta = .14$, $p = .29$). All results were nonsignificant, although a trend was noted for bonding to school to predict alliance. Subsequently, hierarchical regression was used to examine interactions among alliance, age, and gender as predictors of the four outcomes. Interaction analyses were also used to examine the effects of attrition status and adolescent-only versus multiparticipant tapes on the alliance–outcome relation. No significant interactions were found.

Discussion

This study is among the first to measure therapeutic alliance with adolescents in family-based prevention. The alliance scale developed for the study demonstrated adequate reliability and convergent validity, consistent with the history of research showing that adult alliance measures are valid and reliable (Martin et al., 2000). Results suggested the ATAS measures one construct, despite its inclusion of separate Patient Contribution versus Patient–Therapist Contribution subscales as well as items tailored to reflect Bordin's (1979) subdimensions of bond, goal, and task. No coherent two- or three-factor solution emerged in any factor analysis conducted. Two other studies have found the alliance to be a one-factor construct in adolescent samples (DiGiuseppe et al., 1996; Tracey & Kokotovic, 1989). Although findings on the adult alliance have been mixed, most authors refer to it as a single construct (Martin et al., 2000).

Alliance might be unidimensional in adolescents for several reasons. In terms of bond, goals, and tasks, DiGiuseppe et al. (1996) suggest that different components of the alliance should be stressed with different age groups. They note that youthful clients may be more influenced by the bond than by agreement on goals and tasks. Furthermore, developmental differences in social cognition may mediate the degree to which youth are aware of their own psychosocial problems, such that some might not

share with the therapist a wish to improve their psychological health. This might partially explain their difficulty in setting mutual goals with the therapist and agreeing on tasks to reach those goals (DiGiuseppe et al., 1996). In our view, evidence for adults as well as adolescents suggests that alliance can be conceptualized as an integrated, unidimensional construct with (perhaps) three clinically relevant features: bond, goals, and tasks. These features are interrelated tracks along which therapists and clients collaborate in developing a productive working relationship.

Additional findings suggest that alliance can be measured reliably whether ratings are based on clinical episodes with the adolescent alone or with the adolescent and one or more other family members. Reliability of the ATAS remained high across the time phases of the intervention but evidenced a relative decrease during the middle phase, consistent with adult research (see Kivlighan & Shaughnessy, 2000, for a review). In adult psychotherapy, disagreement between the therapist and client about the goals and tasks of therapy often occurs during the middle phase, and this can sometimes lead to therapeutic ruptures that are followed by recovery during later phases (Rait, 1995). Horvath (2001) notes that the stress of working through difficult problems during midtherapy appears to decrease the alliance–outcome relation in adults. In the current study, if therapeutic ruptures occurred, this might have led to difficulties in coding agreement on goals and tasks.

Neither initial levels of alliance nor early improvements in alliance predicted retention. This contradicts prior research showing that strong alliance as well as improvement in alliance during the early treatment phase (i.e., Session 2 to Session 5) predicts retention (Barber et al., 2001). The lack of findings in the current sample may relate to the fact that adolescents were not self-referred, making them more vulnerable to external influences on the decision about whether to remain in therapy. In the context of family therapy, a strong therapist alliance with family members other than the adolescent can also affect retention (Heatherington & Friedlander, 1990). Finally, in one study that linked improvements in alliance to treatment retention in adolescents, alliance was measured at treatment initiation and then again after 3 months in treatment (Florsheim et al., 2000). In the current study, improvement in alliance was measured during the first month of treatment. Replication of Florsheim et al.'s findings with adolescents might require a sampling methodology more similar to their own.

For the most part, alliance did not relate to outcome in the current sample, contradicting the

majority of research with adults. Nevertheless, a trend emerged for alliance to positively predict school bonding. Stronger bonds in therapy may have provided a model from which to build new relationships in the school setting. One possible factor in the lack of findings for other outcome variables may have been the inconsistency in measurement sources for alliance versus outcomes. Whereas independent observers rated alliance, all outcome measures relied on client self-report. Research with adults suggests that this type of inconsistency in process versus outcome sources does not significantly affect the alliance–outcome relation (Horvath, 2001). Past studies linking alliance to outcome in adolescents have used both self-report and clinician ratings of alliance (Eltz et al., 1995; Florsheim et al., 2000). These findings, in combination with the current lack of findings using independent observer ratings, highlight an important goal for future research: developing multi-informant scales for measuring alliance in adolescents.

One strength of the current study was its comprehensive analysis of the adolescent alliance throughout the course of therapy. First, ATAS ratings were based on videotapes of the full length of time that the adolescent was present in a given session rather than on segments, as has been the case in prior research. Second, key developmental factors were considered in developing the measure specifically for adolescent clients. Cognizance of such factors has been the exception in adolescent mental health research (Weisz & Hawley, 2002). This study was also one of the first to show that alliance can be reliably measured with adolescents in the context of family therapy. Alliance within family therapy is a critical topic for future research, especially in light of the robust findings linking alliance to outcome in individual therapy. In family-based intervention, the alliance between the therapist and a family unit might differ from the alliance between the therapist and an individual family member. The therapist can also have different alliances with individual family members (Heatherington & Friedlander, 1990).

Robbins, Turner, Alexander, and Perez (2003) addressed the challenge of multiple alliances in family therapy by computing difference scores between parent–therapist alliance and adolescent–therapist alliance as indicators of the family system alliance in family therapy for adolescents with behavior problems. Difference scores were better than individual family member alliance scores at predicting retention. Further research should consider the adolescent alliance within the context of family therapy as an important first step toward understanding interpersonal processes within family-based models for adolescent problem behaviors.

A special feature of the study was measurement of alliance in a nonclinical sample. Past alliance research has been heavily focused on clinical samples. The ATAS was constructed to apply to general counseling situations, and it demonstrated strong preliminary psychometric properties when applied to an at-risk prevention sample. Although this supports the scale's generalizability to different types of populations, the preventive nature of the sample may have impacted the predictive power of the alliance. That is, the outcomes measured in the study (family cohesion, school bonding, peer anti-social behavior, and self-worth) were proximal mediators of ultimate clinical disorders targeted for prevention (e.g., substance abuse, delinquency). This may have dampened the relations between alliance and outcome.

Despite its strengths, the study was limited by the small sample size, which likely reduced power to detect significant alliance-outcome relations and perhaps even alliance-retention relations. In analyses that included data from the entire course of treatment, the sample size decreased even further as a result of attrition. High-risk samples are notoriously difficult to retain in family-based prevention (Hogue, Johnson-Leckrone, & Liddle, 1999). The family-based context and the nonclinical nature of the sample could also be construed as limitations. However, we consider these factors as strengths because they represent the conditions of real-world practice and thus provide external validity to the study. Finally, the lack of anchors for ratings of 1 through 4 on the ATAS represented a shortcoming of the scale. This most likely led to the coders having to rely on their own internal rules of thumb for ratings in this range. Future work on the ATAS should include the delineation of anchors for these scores.

This study provides a starting point for clinicians and researchers who recognize the need to distinguish between adolescents and adults in terms of the therapeutic relationship and its impact on psychotherapy process and outcome. This is the first study of therapeutic alliance to use a scale developed specifically for adolescents and the first to present a comprehensive analysis of the adolescent alliance in relation to other therapy variables. Further investigations that build on these initial findings have the potential to yield a fuller understanding of how to work productively with adolescents.

Acknowledgements

This research was supported in part by CSAP (Center for Substance Abuse Prevention) Grant HD1SP07054. The authors thank Valerie Johnson

for her invaluable assistance in collecting data and express gratitude to the undergraduate coders: Ayana Ames, Donna Egan, Jennifer Griffith, Ann Hall, Mayra Ramos, Jennifer Sulkoski, and Moni Taranath. The authors also thank Dr. James Grice, Department of Psychology, Oklahoma State University, for his guidance in conducting complex factor analysis.

Notes

¹ KMO (Kaiser-Meyer-Olkin index)

² For the second analysis, before analyzing session numbers, we originally attempted to operationalize occasion by averaging all available session scores across each of the three treatment phases. However, because of the low number of resulting variables ($n = 3$), the data matrix produced by this method was not positive definite (i.e., produced no positive eigenvalues). Overall, the session number variable represents length of time in treatment in a way that is highly similar to the phase variable.

References

- Achenbach, T. M. (1991a). *Manual for the Child Behavior Checklist/4-18 and 1991 profile*. Burlington: Department of Psychiatry, University of Vermont.
- Achenbach, T. M. (1991b). *Manual for the Youth Self Report and 1991 profile*. Burlington: Department of Psychiatry, University of Vermont.
- Achenbach, T. M., & Edelbrock, C. (1983). *Manual for the Child Behavior Checklist and Child Behavior Profile*. Burlington: University of Vermont Press.
- Achenbach, T. M., & Edelbrock, C. (1987). *Manual for the Youth Self Report and Profile*. Burlington: Department of Psychiatry, University of Vermont.
- Barber, J. P., Luborsky, L., Gallop, R., Crits-Christoph, P., Frank, A., Weiss, R. D., et al. (2001). Therapeutic alliance as a predictor of outcome and retention in the National Institute on Drug Abuse Collaborative Cocaine Treatment Study. *Journal of Consulting and Clinical Psychology*, 69, 119–124.
- Becker, D., Hogue, A., & Liddle, H. A. (2002). Methods of engagement in family-based preventive intervention. *Child and Adolescent Social Work Journal*, 19, 163–179.
- Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research, and Practice*, 16, 252–260.
- Cauce, A. M. (1987). School and peer competence in early adolescence: A test of domain-specific self-perceived competence. *Developmental Psychology*, 23, 287–291.
- Cohen, J. (1988). *Statistical power analyses for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Diamond, G. M., Liddle, H. A., Hogue, A., & Dakof, G. A. (1999). Alliance-building interventions with adolescents in family therapy: A process study. *Psychotherapy*, 36, 355–368.
- DiGiuseppe, R., Linscott, J., & Jilton, R. (1996). Developing the therapeutic alliance in child-adolescent psychotherapy. *Applied & Preventive Psychology*, 5, 85–100.
- Eltz, M. J., Shirk, S. R., & Sarlin, N. (1995). Alliance formation and treatment outcome among maltreated adolescents. *Child Abuse and Neglect*, 19, 419–431.
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, 4, 272–299.

- Fleiss, J. L. (1981). Balanced incomplete block designs of interrater reliability studies. *Applied Psychological Measurement*, 5, 105–112.
- Fletcher, A. C., Darling, N. E., Steinberg, L., & Dornbusch, S. M. (1995). The company they keep: Relation of adolescents' adjustment and behavior to their friends' perceptions of authoritative parenting in the social network. *Developmental Psychology*, 31, 300–310.
- Florsheim, P., Shotorbani, S., Guest-Warnick, G., Barratt, T., & Hwang, W. (2000). Role of the working alliance in the treatment of delinquent boys in community-based programs. *Journal of Clinical Child Psychology*, 29, 94–107.
- Gorman-Smith, D., Tolan, P., Zelli, A., & Huesmann, L. (1996). The relation of family functioning to violence among inner-city minority youth. *Journal of Family Psychology*, 10, 115–129.
- Gorsuch, R. L. (1983). Two- and three-mode factor analysis. In R. L. Gorsuch (Ed.), *Factor analysis* (2nd ed) (pp. 310–327). Hillsdale, NJ: Erlbaum.
- Grice, J. W. (2001). A comparison of factor scores under conditions of factor obliquity. *Psychological Methods*, 6, 67–83.
- Harter, S. (1983). Developmental perspectives on the self-system. In E. M. Hetherington (Ed.), *Handbook of child psychology: Socialization, personality, and social development* (pp. 275–385). New York: Wiley.
- Harter, S. (1988). *Manual for the Self-Perception Profile for Adolescents*. Denver: University of Colorado.
- Hartley, D. E., & Strupp, H. H. (1983). The therapeutic alliance: Its relationship to outcome in brief psychotherapy. In J. Masling (Ed.), *Empirical studies of psychoanalytic theories* (pp. 1–38). Hillsdale, NJ: Erlbaum.
- Heatherington, L., & Friedlander, M. L. (1990). The therapeutic alliance as interpersonal process. In A. Horvath & L. S. Greenberg (Eds.), *The working alliance: Theory, research, and practice* (pp. 51–84). New York: Wiley.
- Hogue, A., Johnson-Leckrone, J., & Liddle, H. A. (1999). Recruiting high-risk families into family-based prevention and prevention research. *Journal of Mental Health Counseling*, 21, 337–351.
- Hogue, A., Liddle, H. A., Becker, D., & Johnson-Leckrone, J. (2002). Family-based prevention counseling for high-risk young adolescents: Immediate outcomes. *Journal of Community Psychology*, 30, 1–22.
- Horvath, A. O. (2001). The alliance. *Psychotherapy*, 38, 365–372.
- Horvath, A. O., & Greenberg, L. S. (1989). Development and validation of the Working Alliance Inventory. *Journal of Counseling Psychology*, 36, 223–233.
- Johnson, S., Hogue, A., Diamond, G., Leckrone, J., & Liddle, H. A. (1998). *Scoring manual for the Adolescent Therapeutic Alliance Scale (ATAS)*. Unpublished manuscript, Temple University, Philadelphia.
- Kivlighan, D., & Shaughnessy, P. (2000). Patterns of working alliance development: A typology of client's working alliance ratings. *Journal of Counseling Psychology*, 47, 362–371.
- Krupnick, J. L., Sotsky, S. M., Simmens, S., Moyer, J., Elkin, I., Watkins, J., & Pilkonis, P. A. (1996). The role of the therapeutic alliance in psychotherapy and pharmacotherapy outcome: Findings in the NIMH Treatment of Depression Collaborative Research Program. *Journal of Consulting and Clinical Psychology*, 64, 532–539.
- Larzelere, R. E., & Patterson, G. (1990). Parental management: Mediator of the effect of socioeconomic status on early delinquency. *Criminology*, 28, 301–323.
- Liddle, H. A. (1995). Conceptual and clinical dimensions of a multidimensional, multisystems engagement strategy in family-based adolescent treatment. *Psychotherapy: Theory, Research and Training*, 32, 39–58.
- Liddle, H. A., & Diamond, G. (1991). Adolescent substance abusers in family therapy: The critical initial phase of treatment. *Family Dynamics of Addictions Quarterly*, 1, 55–68.
- Liddle, H., & Hogue, A. (2000). A family-based, developmental-ecological preventive intervention for high-risk adolescents. *Journal of Marital and Family Therapy*, 26, 265–279.
- Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 68, 438–450.
- McGraw, K. O., & Wong, S. P. (1996). Forming inferences about some intraclass correlation coefficients. *Psychological Methods*, 1, 30–46.
- Patterson, G. R., & Bank, L. (1986). Bootstrapping your way in the nomological thicket. *Behavioral Assessment*, 8, 49–73.
- Patterson, G. R., Dishion, T. J., Reid, J. B., Capaldi, D., & Forgatch, M. S. (1984). *Structured interview for children*. Eugene, OR: Oregon Social Learning Center.
- Rait, D. S. (1995). The therapeutic alliance in couples and family therapy: Theory and practice. *Psychotherapy in Practice*, 1, 59–72.
- Robbins, M. S., Turner, C. W., Alexander, J. F., & Perez, G. A. (2003). Alliance and dropout in family therapy with drug using adolescents: Individual and systemic effects. *Journal of Family Psychology*, 17, 534–544.
- Sexton, H. C., Hembre, K., & Kvarme, G. (1996). The interaction of the alliance and therapy microprocess: A sequential analysis. *Journal of Consulting and Clinical Psychology*, 64, 471–480.
- Shirk, S. R., & Saiz, C. C. (1992). Clinical, empirical, and developmental perspectives on the therapeutic relationship in child psychotherapy. *Development and Psychopathology*, 4, 713–728.
- Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, 86, 420–428.
- Tolan, P. H., Gorman-Smith, D., Huesmann, L. R., & Zelli, A. (1997). Assessment of family relationship characteristics: A measure to explain risk for antisocial behavior and depression among urban youth. *Psychological Assessment*, 9, 212–223.
- Tracey, T. J., & Kokotovic, A. M. (1989). Factor structure of the Working Alliance Inventory. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 1, 207–210.
- Weisz, J. R., & Hawley, K. M. (2002). Developmental factors in the treatment of adolescents. *Journal of Consulting and Clinical Psychology*, 70, 21–43.

Zusammenfassung

Die therapeutische Allianz-Skala für Jugendliche: Erste psychometrische Kennwerte und die Vorhersage des Ergebnisses in der psychotherapeutischen Beratung familienbezogener Drogenabhängigkeitsprävention

In dieser Studie wurde anhand einer 14-Item-Skala (Adolescent Therapeutic Alliance Scale, ATAS) die therapeutische Allianz durch Beobachter bei Heranwachsenden, die in ein familienbasiertes Drogenmißbrauchpräventionsprogramm eingebunden waren, eingeschätzt. Die Skala wurde von zwei verschiedenen Quellen hergeleitet: a) auf entwicklungsbezogenen Überlegungen aufbauend, von der revidierten Vanderbilt Therapie-Allianzskala (Vanderbilt Therapeutic Alliance Scale-Revised und b) Bordins (1979) Theorie der therapeutischen

Allianz, bestehend aus Bindung, Aufgaben und Zielen. Unabhängige Beobachter benutzen ATAS bei 51 gefährdeten afro-amerikanischen Jugendlichen im Alter von 11 bis 14 Jahren. Eine Faktoranalyse ergab eine Lösung mit einem Faktor (Eigenwert = 8.6, mit 61,3 % aufgeklärter Gesamtvarianz). Die Ladungen der Items betragen zwischen .40 und .90. Die konvergente Validität in Bezug auf das Engagement, durch die Therapeuten und durch die Beobachter eingeschätzt, war auch hoch. Die innere Konsistenz ($\alpha = .90$) und die Interraterobjektivität ($r_{tt} = .74$) waren zufriedenstellend. Es gab einen Trend der Allianzeinschätzung hinsichtlich der Vorhersage einer Verbesserung des Engagements der Jugendlichen in der Schule. Es werden Empfehlungen für die Weiterentwicklung und Implementierung von Maßen der therapeutischen Allianz bei Jugendlichen gegeben.

Résumé

L'Echelle d'Alliance Thérapeutique pour Adolescents (ATAS) : données psychométriques initiales et prédiction des résultats pour le counseling de prévention de l'abus de substances basé sur la famille

Cette étude a testé une échelle d'alliance thérapeutique à coter par des observateurs, avec des adolescents intégrés dans un counselling préventif contre l'abus de substances, basé sur la famille. L'Adolescent Therapeutic Alliance Scale (ATAS) était dérivée de deux sources principales : (a) des items de la Vanderbilt Therapeutic Alliance Scale-Revised basée sur des considérations du développement, et (b) la théorie de Bordin (1979) de l'alliance comme consistant d'un lien, de tâches et d'objectifs. Des observateurs indépendants ont coté l'alliance thérapeute - adolescent pour 51 adolescents afro-américains âgés de 11 à 14 ans. L'analyse factorielle a suggéré que l'ATAS mesure 1 construct (valeur propre = 8.6, correspondant à 61.3% de la variance totale de l'échelle). Les charges des items allaient de .40 à .90. La validité convergente avec l'engagement coté par thérapeutes et observateurs était également haute. La fidélité de la consistance interne ($\alpha = .90$) et la corrélation intra-classes ($ICC_{1,2} = .74$) étaient acceptables. Une tendance a émergé indiquant que les cotations ATAS prédisent une amélioration de l'investissement scolaire chez des adolescents. Des recommandations sont fournies au sujet de futurs travaux de développement et d'implémentation de mesures de l'alliance thérapeutique pour adolescents.

Resumen

Psicometría inicial de la Escala de Alianza Terapéutica en Adolescentes (ATAS) y predicción del resultado del counseling para la prevención del abuso de sustancias basado en la familia

Este estudio trabajó sobre 14 ítem de una escala de alianza terapéutica, evaluada por el observador, con adolescentes enrolados en un *counseling* de familia para prevenir el abuso de sustancias. La Escala de Alianza Terapéutica en Adolescentes (ATAS) fue obtenida de dos fuentes principales: (a) ítems de la Escala-Revisada de la Alianza Terapéutica de Vanderbilt que tiene en cuenta el desarrollo

y (b) la teoría de Bordin (1979) de la alianza, consistente en el lazo vincular, en las tareas y en los objetivos. La alianza terapeuta fue evaluada por observadores independientes. Se aplicó a cincuenta y un adolescentes (entre 11 y 14 años) afro-americanos en riesgo. En el análisis factorial surgió que la ATAS mide un constructo (*eigenvalue* = 8.6) que daba cuenta del 61.3% de la varianza total de la escala. Los valores de los ítem variaron entre 40 y 90. También fue alta la convergencia de la validez del compromiso evaluado tanto por los terapeutas como por los observadores. La consistencia de la confiabilidad interna ($\alpha = .90$) y la correlación intraclase ($ICC_{1,2} = .74$) fueron aceptables. En los *ratings* de ATAS se vió la tendencia a predecir mejoras en el compromiso de los adolescentes con la escuela. Se dan recomendaciones para, en futuros trabajos, elaborar el desarrollo y la implementación de mediciones de la alianza terapéutica con adolescentes.

Resumo

A escala de aliança terapêutica para adolescentes: Dados psicométricos preliminares e predição de resultados em aconselhamento familiar para a prevenção de abuso de substâncias

O estudo explorou uma versão de 14 itens da escala de aliança terapêutica, cotada por observadores, com adolescentes envolvidos na consulta familiar de prevenção de abuso de substâncias. A Escala de Aliança Terapêutica de Adolescentes (Adolescent Therapeutic Alliance Scale, ATAS) foi construída, principalmente, a partir de duas fontes: (a) itens da Escala de Aliança Terapêutica de Vanderbilt Revista baseada em aspectos desenvolvimentais e (b) na teoria da aliança de Bordin (1979), que caracteriza a aliança como sendo constituída por um vínculo, tarefas e objetivos terapêuticos. Observadores independentes avaliaram a aliança terapeuta-adolescente em 51 adolescentes Afro-americanos em risco (com idades entre 11 e os 14 anos). A análise factorial sugeriu que o ATAS mede um constructo (*eigenvalue* = 8.6, responsável por 61,3% da variância total). Os níveis de saturação dos itens oscilam entre 0.40 a 0.90. A validade convergente entre as avaliações do comprometimento pelo terapeuta e pelo observador foram, também, elevadas. A consistência interna ($\alpha = .90$) e a correlação intraclasse ($ICC_{1,2} = .74$) foram aceitáveis. Emergiu uma tendência para os valores do ATAS na previsão de melhorias do investimento dos adolescentes na escola. São feitas recomendações para trabalhos futuros ao nível do desenvolvimento e implementação de medidas de aliança terapêutica para adolescentes.

Sommario

La Adolescent Therapeutic Alliance Scale (ATAS): proprietà psicometriche e predizione degli esiti nel counseling familiare per la prevenzione dell'abuso di sostanze

Questo è uno studio con adolescenti coinvolti in un counselling sulla prevenzione all'abuso di sostanze che testa una scala a 14 ítem in versione osservatore per valutare l'alleanza terapeutica.

La Adolescent Therapeutic Alliance Scale (ATAS) è stata derivata da 2 fonti principali: (a) items derivanti the Vanderbilt Therapeutic Alliance Scale-Revised basata su considerazioni relative allo sviluppo e (b) e la definizione dell'alleanza, composta da le 3 dimensioni task goal e bond fornita da Bordin(1979). Osservatori indipendenti hanno l'alleanza tra 51 coppie terapeuti – adolescenti a rischio; gli adolescenti era soggetti Afroamericani (età 11-14). L'analisi fattoriale ha suggerito che l'ATAS misura 1 costruito(Factor analysis suggested the ATAS measures 1 construct (eigenvalue =8.6, spiega il 61.3% of della varianza totale). Il loading degli item varia tra .40 e .90. La validità convergente è risultata anch'essa elevate. La consistenza interna ($\alpha=.90$) e intraclass correlation ($ICC_{1,2}=.74$) sono risultate essere accettabili. E' emerso un andamento dalle valutazioni con l' ATASA in grado di predire l'incremento dell'investimento scolastico degli adolescenti. Vengono fatte alcune proposte per future

lavori per sviluppare e implementare strumenti di misura dell'alleanza terapeutica per adolescenti.

摘要

青少年治療同盟量表：以家庭為主的物質濫用預防諮商處遇之初步計量資料與結果的預測

本研究針對治療同盟觀察員評定量表進行預試，該量表共 14 題，研究對象為參與以家庭為主的藥物濫用預防諮商的青少年。「青少年治療同盟量表」(Adolescent Therapeutic Alliance Scale, ATAS)的題目主要來源有二：(1)以發展取向為考量的「樊氏治療同盟量表-修訂版」(Vanderbilt Therapeutic Alliance Scale- Revised)；(2)Bordin(1979)以連結、任務、及目標所組成的同盟理論。各自獨立的觀察員評定 51 位高危險傾向非裔青少年(11 至 14 歲)與其治療者之間的同盟關係。因素分析結果顯示 ATAS 測量一個結構(特徵值為 8.6，解釋總變異量為 61.3%)。各題項負荷量介於 .40 至 .90 之間。治療者與觀察員評定所形成的聚效度也很高。內部一致性係數($\alpha=.90$)及各層級間的相關($ICC_{1,2}=.74$)是可以被接受的。趨向分析也呈現出 ATAS 評定情形對預測青少年投入學校的進步情形。本研究也針對未來發展並完成青少年治療同盟關係的工具而提出一些建議。