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Examining Change in Therapeutic Alliance to Predict Youth Mental Health Outcomes

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Abstract

Objective—To examine the link between therapeutic alliance and youth outcomes.

Method—The study was conducted at a group-home with 112 youth with a disruptive-behavior diagnosis. Therapeutic alliance was collected routinely via youth and staff report. Outcome data were collected using youth and staff reports of externalizing behavior as well as behavioral incidents occurring during care. Outcome data were collected following intake into services and at 6 and 12 months of care. Data were analyzed to examine (1) if youth behavior problems at intake were predictive of therapeutic alliance and (2) if changes in alliance were predictive of subsequent youth outcomes. These were conducted with a 6-month service-delivery model and replicated with a 12-month model.

Results—There was some support for the first hypothesis, that initial levels of youth externalizing behavior would be related to alliance ratings; however, most of the effects were marginally significant. The second hypothesis, that changes in therapeutic alliance would be related to subsequent youth outcomes, was supported for the 6-month model, but not the 12-month model.

Conclusions—Changes in therapeutic alliance may be predictive of youth outcomes during care. Additional research into examining therapeutic alliance trajectories is warranted to improve mental health services for youth.

Keywords

therapeutic alliance; youth outcomes; adolescents; residential care; disruptive behavior

One of the most widely researched treatment topics in adult psychotherapy is therapeutic alliance, also known as the working relationship between a therapist and client (Horvath, Del Re, Flückiger, & Symonds, 2011). The theoretical framework for therapeutic alliance dates back to Bordin (1979) and has three primary components: the bond or affective components of the therapist/client relationship, mutual agreement on the tasks or activities of the therapy, and shared agreement between the therapist/client on the goals of the therapy. In adult out-patient settings, meta-analyses have found therapeutic alliance to be predictive of engagement in treatment as well as treatment outcomes (e.g., Horvath & Bedi, 2002; Horvath et al., 2011; Horvath & Symonds, 1991; Martin, Graskie, & Davis, 2000; Sharf, Primavera, & Diener, 2010). However, the research surrounding the role of therapeutic alliance in predicting outcomes for youth is less developed. Several reviews have found that therapeutic alliance is predictive of treatment outcomes (Karver, Handelsman, Fields, & Bickman, 2006; Shirk & Karver, 2003; Shirk, Karver, & Brown, 2011); however, other meta-analyses have found only weak associations among therapeutic alliance and youth outcomes (Green, 2006; McLeod, 2011). Thus, more work needs to be done to better understand the role of therapeutic alliance and treatment outcomes for youth.

Therapeutic Alliance Research with Youth in Out-of-Home Settings

A vast majority of the research on therapeutic alliance with children and adolescents is focused on traditional outpatient settings (e.g., McLeod, 2011; Shirk et al., 2011). However, many youth receive mental health treatment in alternative settings, such as in-home family-based services or out-of-home services, such as residential group homes or treatment foster homes. Minimal research on therapeutic alliance has been conducted in these alternate treatment settings, especially for the residential or group-care of youth with significant emotional or behavioral needs. The therapeutic relationships in group-care are likely different and more complex than those in outpatient settings, as the treatment providers do not see the youth once or twice a week but rather live with the youth and are primary caregivers. Nonetheless, the concepts of establishing a bond between the child and the primary treatment provider as well as a mutual understanding regarding the components of care remain key components for both forms of treatment delivery (e.g. Florsheim, Shortorban, Guest-Warnick, Barratt, & Hwang, 2000). To date, there have been a few descriptive studies describing the therapeutic relationships in traditional residential (Moses, 2000; Zegers, Schuengel, van IJzendoorn, & Janssens, 2006) and wilderness camp settings (Bickman et al., 2004; Manso, Rauktis, & Boyd, 2008). Also, a recent study found strong psychometric properties for a measure of therapeutic alliance with youth in residential group homes (Duppong Hurley, Lambert, Van Ryzin, Sullivan & Stevens, 2013). These authors also assessed therapeutic alliance during the course of care and found that youth ratings of therapeutic alliance typically started fairly high at the start of services, declined, and then slowly rebounded.

Only a few studies have examined the ability of therapeutic alliance in residential care to predict treatment outcomes. This is similar within the broader field of youth mental health services, including outpatient services, there is a lack of studies where ratings of alliance temporally preceded outcomes. A recent meta-analysis modeled after the adult studies and requiring temporal order of alliance and outcomes found only 16 studies of youth

therapeutic alliance that met the inclusion criteria (Shirk et al., 2011). Yet, the findings of this review did mirror those of previous youth and adult meta-analyses supporting the predictive relationship of alliance and outcomes for youth. Specific to residential care for youth, Eltz, Shirk, and Sarlin (1995) found that the alliance scores early in treatment for youth in an inpatient setting were not correlated with subsequent alliance scores or youth outcomes. Moreover, these authors found that youth with a history of maltreatment had lower initial therapeutic alliance scores than youth that did not experience maltreatment.

Moreover, few studies have examined therapeutic alliance in youth treatment longitudinally, to examine its development and change over time. A few studies with youth have examined therapeutic alliance at two-points in time and found the ratings to be strongly correlated (Hawley & Garland, 2008; Kazdin, Marciano, & Whitley, 2005), in contrast to Eltz and colleagues (1995) that did not find a correlation in alliance scores over time in an inpatient setting. Bickman and colleagues (2012) assessed therapeutic alliance at each session throughout the length of youth outpatient therapy and found that initial levels of therapeutic alliance were not predictive of youth improvement, but rather that clinician's change in therapeutic alliance ratings was predictive of the severity of youth symptoms. This conceptualization of therapeutic alliance as a process that changes over time has led to a call for more research examining therapeutic alliance longitudinally (Bickman et al., 2012; Hawley & Garland, 2008; Shirk et al., 2011). Along this line of assessing change in therapeutic alliance, another study focused on therapeutic alliance between youth and residential staff in a correctional setting and found that gains in therapeutic alliance from intake to three months predicted improvement in youth outcomes, but also found that youth with high alliance scores at intake experienced more negative outcomes (Florsheim, Shortorbani, Guest-Warnick, Barratt, & Hwang, 2000). Thus, it seems that perhaps changes in therapeutic alliance are more important to predicting outcomes than assessments of alliance early in treatment.

Current Study

The purpose of the current study was to expand upon research on the relationship between therapeutic alliance and youth outcomes. Our longitudinal design allowed for the examination of changes in therapeutic alliance over time to predict subsequent changes in youth externalizing behaviors (staff report, youth self-report, and significant behavior incidents) during residential care. Specifically, we hypothesized that baseline levels of youth problem behavior would influence the early development of the therapeutic relationship, with higher levels of youth problem behavior leading to a more negative trajectory for the therapeutic alliance (path A in Figures 1 and 2). We also hypothesized that the early development of the therapeutic alliance would influence youth behavior outcomes, with a more positive trajectory for the therapeutic alliance leading to a decline in problem behavior (path B in Figures 1 and 2). The use of two separate models enables us to evaluate these hypotheses over the short term (i.e., the first 6 months of services, as in Figure 1), and the long term (i.e., 1 year, as in Figure 2). In Figure 2, we wished to take greater advantage of our data and thus modeled the therapeutic alliance across three time points instead of two as in Figure 1.

Method

Setting

The study was conducted at a residential facility that serves over 500 girls and boys in about 70 family-style group homes in a large Midwestern city. The agency has implemented an adaptation of the Teaching Family Model (TFM; Davis & Daly, 2003; Wolf et al., 1976) since the 1980's and employs a married couple as the primary direct-care staff. This treatment-providing couple live in a family-style home with up to eight adolescent girls or boys. Each couple receives 80 hours of training in the TFM, including graded role play practice and exams. All direct-care staff receive ongoing structured supervision and must successfully complete annual certification requirements. The focus of the TFM intervention is to teach youth skills to manage their behavior using coaching, practice, and feedback along with a token economy (Wolf et al., 1976). An important component of the intervention is to help youth develop effective relationships with their peers and adults, and staff receive ongoing supervision to help improve their working relationship with youth in their care.

Participants

Youth eligible to participate in the study were identified with a disruptive behavior diagnosis via a professional diagnosis, Diagnostic Interview Schedule for Children (DISC; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000), or the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001), were 10–17 years old, were experiencing their first admission to the program, and were assigned to service providers participating in the study (124 service providers participated during the study period, representing 62 group homes, almost 79% of the group homes at this agency). Based on these criteria, over a two year period, 170 youth were eligible for participation and 145 (85%) had guardian consent and youth assent. All recruitment and consent procedures for youth and staff were approved by the University of Nebraska-Lincoln IRB and the agency IRB.

For this study, we used a subset of 112 youth that remained in the same group-home with the same direct-care staff during the course of data collection. Youth demographics include 48 girls (42.9%) and 64 boys; 12 (10.7%) youth indicated that they were Hispanic or Latino, 26 (23.2%) were African American, 2 (1.8%) were Native American, 1 (.9%) was Asian, 44 (39.3%) were European-American, and 27 (24.1%) were mixed ethnicity; age at enrollment ranged from 10 to 17 years, with a mean age of 15.29 (SD = 1.33).

The youth resided in 44 different homes with a married-couple provided direct-care services (resulting in 88 direct-care providers). For the direct-care staff, 2 (2.3%) providers indicated that they were Hispanic or Latino, 5 (5.7%) were African American, 1 (1.1%) was Asian, 73 (83.0%) were European-American, and 7 (8.0%) were mixed ethnicity; provider age ranged from 21–30 to 51–60 years, with a median age of 31–40; 19 (21.6%) of the providers were new (i.e., less than 1 year of experience), 38 (43.2%) had between 1–6 years of experience, and 30 (34.1%) had 7 or more years of experience. With regard to education 13.5% had a master's degree or higher, 56.3% had a bachelor's degree, and the remaining 30.2% had less than a bachelor's degree or held an unspecified degree.

Measures

Therapeutic alliance—The Therapeutic Alliance Quality Scale (TAQS; Bickman et al., 2010) was developed to measure the working relationship between a clinician and a youth receiving outpatient counseling. The TAQS is a 5-item youth-rated scale; items are rated on a 5-point scale (1 = Not at all, 5 = Totally). Higher total scores are associated with higher quality of therapeutic alliance. Mean total scores tend to be relatively high (4.12 on a 5-point scale) and negatively skewed (Bickman et al., 2010) with most youth reporting good relationships with their clinician. The TAQS has only a single underlying factor.

Psychometrics for the TAQS in residential care was acceptable and similar to those reported for youth in outpatient samples (Duppong Hurley, Lambert, Van Ryzin, Sullivan, & Stevens, 2013). For this study, each youth was asked to rate each of the married staff members separately (i.e., provide a rating of alliance with the male service provider and a rating of alliance with the female service provider). However, the youth ratings between the male and female staff members were highly correlated (.75, .72, and .72, all $p < .001$, across waves 2, 4, and 6 months, respectively). Therefore, we averaged the youth ratings for the male and female staff to derive a couple-rating of TAQS.

Service providers also rated their therapeutic alliance with youth using a single 5-point item indicating the quality of their therapeutic alliance with the youth (Bickman et al., 2010; Bickman et al., 2012). Previous studies of the TAQS used a longer 27-item scale, however, psychometric analyses indicated that the single-item approach was an effective for clinicians to assess therapeutic alliance (Bickman et al., 2010). The staff members provided reports of therapeutic alliance on an identical timeframe as the youth. As with the TAQS, the individual staff ratings were averaged into a couple rating, as the individual staff scores were highly correlated (correlated .48, .46, and .51, all $p < .001$, across waves 2, 4, and 6 months, respectively).

Externalizing youth behaviors—Youth provided self-reports of externalizing behavior using the Symptom Functioning and Severity Scale (SFSS; Bickman et al., 2010). The SFSS was developed as a concise and psychometrically sound instrument to measure internalizing and externalizing symptoms and severity with youth ages 11–18. The original 33-item version of the SFSS demonstrated good convergent validity with both the Child Behavior Checklist and corresponding Youth Self Report (Achenbach, 1991) and the Strengths and Difficulties Questionnaire, (Goodman, 1999). In 2010 a slightly shorter 24-item version of the youth-completed SFSS was developed which again demonstrated excellent psychometric properties and strong correlations to the longer scale (Bickman et al., 2010). We worked with the developers of the SFSS to create a slightly modified version for use in 24/7 residential care which used a 3-point Likert-type scale, instead of the 5-point scale used in outpatient settings. Each item asked respondents to rate the frequency of behaviors of the past two weeks. The psychometric properties of the residential version of the SFSS replicate the version used in outpatient samples (Lambert & Duppong Hurley, 2012).

Direct-care staff provided reports of each youth's externalizing behavior via the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001). The service provider rated the child on each item indicating the severity of the problem on a scale of 0 (no problem) to 2

(severe problem). The CBCL test-retest and internal consistency values for the Total Problems, Externalizing, and Internalizing broad band scales ranged from .72 to .95 and .65 to .92, respectively (Achenbach & Rescorla, 2001). The externalizing subscale was used in analyses.

Incidents—For each youth, a record was kept of the number of critical incidents that occurred each day, called the Daily Incident Report (DIR). Service providers are required to record significant youth behaviors (as narrative reports) which are then stored on a computerized database by program supervisors. The DIR allows the observer to use a range of codes to record the various categories of behavioral incidents (e.g., physical aggression, suicide attempt, etc.). The reliability and validity of the DIR has been established in several investigations (Friman et al., 2000; Jewell, Handwerk, Almquist, & Lucas, 2004; Larzelere, Smith, Batenhorst, & Kelly, 1996). Tracking the frequency of youth incidents during care is a way to use readily available information on the youth's inappropriate behavior (e.g., Duppong Hurley, Ingram, Czyz, Juliano, & Wilson, 2006; Jewell et al., 2004). We used the count of incidents related to non-compliance such as not following instructions or being oppositional (Median = 0 at all time-points, range 0–17), aggression such as throwing objects, punching a wall, or physical aggression towards others (Median=0, range 0–17), and problem behavior such as lying, stealing or wearing gang-related colors (Median=0, range 0–14). As these critical incidents are relatively low in frequency, we created a summative count of incidents over a two-month period.

Procedures

The CBCL was collected via mailed paper survey to the service providers. The therapeutic alliance and SFSS assessments were given individually via an online survey to youth and service providers. Research staff members were present during the administration of the youth assessments to help the youth log-in to the computer and address any difficulties the youth might experience while completing the survey. Service completed a web-based form at their convenience. Therapeutic alliance data were collected every other month for paired youth and staff. The SFSS and CBCL data were collected at intake, 6 months into care, and 12 months into care or discharge (if youth was discharged before 12 months). The incident data was aggregated for every two months of care. Baseline data were derived from the first and second month, and outcomes were months 5–6 and 11–12 (or two months before discharge if before 12 months).

Analysis Plan

We fit the model to the data using structural equation modeling with Mplus (Muthén & Muthén, 2006). We used maximum likelihood analysis, which can provide unbiased estimates in the presence of missing data. For models predicting continuous measures of behavior (i.e., externalizing), standard measures of fit are reported, including comparative fit index (CFI), nonnormed or Tucker-Lewis index (TLI), and root mean square error of approximation (RMSEA). CFI values greater than .95, TLI values greater than .90, and RMSEA values less than .05 typically indicate good fit (Bentler, 1990; Bentler & Bonett, 1980; Hu & Bentler, 1999). Paths are reported as standardized betas.

Incident measures were declared as count variables, so Poisson regression was used with a log-based link function. The magnitude of change in the count of the number of incidents can be calculated by exponentiating (i.e., antilog) the raw regression coefficients. Since a count-based outcome cannot be less than zero, a negative regression coefficient, when exponentiated, is greater than or equal to zero but less than 1, which through multiplication with other model terms will reduce the overall count of the outcome variable. In contrast, a positive regression coefficient, when exponentiated, is greater than 1 and serves to increase the overall count. Thus, exponentiated coefficients less than 1 can be seen as exerting a negative effect on the outcome, whereas exponentiated coefficients greater than 1 can be seen as exerting a positive effect. Mplus does not provide absolute indices of fit (e.g., CFI, RMSEA, etc.) for Poisson regression models, so none are reported.

To avoid any issues with shared reporter variance, we used youth-report of externalizing behavior (via the SFSS) and staff-report of therapeutic alliance in the same model and vice-versa for staff-report of externalizing behavior (via the CBCL) and youth-report therapeutic alliance. As discussed above, we used an additional measure of the therapeutic alliance in Figure 2 due to the longer timeframe, which enabled us to conceptualize change in the therapeutic alliance as a growth curve with three time points; in Figure 1, we could not use all three measures of the therapeutic alliance without losing temporal precedence in our predictive paths (Path B).

Results

Variable means, standard deviations, and inter-correlations for continuous measures are reported in Table 1. We did have a degree of missing data (see Table 1), but Little's test (Little, 1988) revealed that the data were Missing Completely at Random [MCAR; $\chi^2(102) = 111.37, ns$], which indicates that the missing data did not introduce bias into the analyses. Youth and staff reported therapeutic alliance scores were consistent over time and were moderately correlated with one another (see Table 1).

We initially fit the TAQS and TAQR growth curves from Figure 2 to assess their general behavior; we also examined mean change over time in outcomes. Interestingly, youth-reported TAQS demonstrated a decline from 2 to 6 months (Intercept = 3.91, SE = .10, $p < .001$; Slope = $-.04$, SE = .02, $p = .05$), whereas staff-reported TAQR demonstrated a marginally significant increase (Intercept = 3.84, SE = .08, $p < .001$; Slope = .03, SE = .02, $p = .07$). Both the CBCL and SFSS show declines, indicating improvement in behavior. In a series of paired t -tests, the decline in CBCL between baseline and 6 months (change = -1.72 , $N = 94$, $p = .09$) and baseline and 12 months (change = -1.83 , $N = 103$, $p < .10$) were both marginally significant, whereas the decline in SFSS between baseline and 6 months (change = .06, $N = 94$, $p = .12$) was not significant and the change between baseline and 12 months (change = .12, $N = 88$, $p < .01$) was significant.

When fitting the models, we found some support for the first hypothesis that initial levels of youth externalizing problem behavior were related to therapeutic alliance ratings (see Table 2, Path A; stability coefficients for therapeutic alliance and youth outcomes were significant and are thus included in the table; other paths were not significant and are not included).

Specifically, youth self-report of externalizing behavior at baseline (SFSS) predicted a more negative trajectory in staff-report therapeutic alliance rating (TAQR) from months 2–4 ($\beta = -.19, p < .05$). This suggests that the therapeutic alliance, as reported by the staff, may be influenced by youth behavior; however, this finding was not replicated when staff-report externalizing behavior (CBCL) predicted change in youth-report therapeutic alliance (TAQS; $\beta = -.11, ns$). In the longer timeframe model, the link between staff-report externalizing behavior (CBCL) and change in youth-report therapeutic alliance (TAQS) was marginally significant (see Table 3, Path A; stability coefficients for youth outcomes were included; $\beta = -.17, p = .06$). We also found a marginally significant prediction of change in staff-report therapeutic alliance (TAQR) by youth-report externalizing behavior (SFSS) in the long-term model ($\beta = -.18, p = .06$). Count of incidents did not predict change in either TAQS or TAQR in either model.

The second hypothesis, that changes in therapeutic alliance would be related to change in youth outcomes, was supported for the 6-month model but not the 12-month model. As shown in Table 2 (Path B), a more positive trajectory in the youth-reported therapeutic alliance (TAQS) from months 2–4 played a significant role in more positive change in the youths' behavior across the first six months, with more positive change in alliance ratings (as reported by the youth) predicting decreased levels of staff-reported externalizing behavior ($\beta = -.33, p < .01$) and lower numbers of aggression ($e^B = .43, p < .001$) and problem behavior incidents ($e^B = .53, p < .001$). Similarly, more positive change in the staff-reported alliance ratings (TAQR) from months 2–4 predicted lower numbers of non-compliance ($e^B = .42, p < .001$) and aggression incidents ($e^B = .47, p < .001$), but did not predict youth-reported externalizing behavior ($\beta = -.15, ns$). In contrast to these findings, the longer-term analysis did not yield any significant results linking change in therapeutic alliance to later youth behavior (see Table 3, Path B).

Discussion

Recent meta-analyses of youth-focused emotional and behavioral treatment have found that therapeutic alliance is correlated to outcomes (Karver et al., 2006; Shirk & Karver, 2003). This study expands on this work by assessing therapeutic alliance longitudinally and from multiple perspectives (youth and staff) in a residential group home setting. The first research question in this study examined if the degree of difficulty a youth has with behavioral issues at baseline is related to therapeutic alliance early in services. Staff ratings of youth behavior at baseline were not related to change in youth-reported levels of therapeutic alliance for the short term model, but we found that staff reports of behavior predicted youth reports of the alliance (marginally) in the long-term model. The frequency of non-compliance, aggression, or problem behavior incidents at baseline did not predict a change for youth or staff-rated therapeutic alliance. Thus, staff perceptions of youth externalizing behavior at baseline was not a strong predictor of changes in therapeutic alliance as reported by the youth. In contrast, youth self-ratings of increased externalizing behavior at baseline were related to more negative trajectories in staff-provided ratings of change in therapeutic alliance for both the short-term and long-term models, although the long-term finding was only marginally significant. It is interesting that youth- ratings of therapeutic alliance over time was not predicted by staff assessments of externalizing behavior at baseline, yet youth self-ratings of

externalizing behavior was related to staff-ratings of changes in therapeutic alliance. Perhaps staff were viewing changes in the relationship that were not perceived by the youth. It seems that the more difficult youth may experience deterioration (or less positive growth) in their therapeutic alliance. These findings suggest that service providers need to be especially aware of their therapeutic relationships with youth exhibiting higher levels of externalizing behaviors. Furthermore, direct action may need to be taken to improve the therapeutic alliance with these more difficult youth. At the very least, it supports recent efforts to increase the monitoring of therapeutic alliance during service provision (Bickman et al., 2012) and examine how alliance relates to process and summative outcome changes with youth in care.

The second research question focuses on the role of changes in therapeutic alliance on subsequent youth outcomes. We found that more positive trajectories of youth self-report of therapeutic relationship quality were related to service-provider reports of improving youth behavior during the first 6-months of care, as well as decreases in aggression and problem behavior incidents. Similarly, staff-ratings of more positive change in alliance were also related to a reduction in negative incidents. Together, these findings correspond to the research that the therapeutic alliance is predictive of outcomes for youth (Shirk et al., 2011). Additional research needs to be conducted with larger sample sizes to see if specific profiles for youth based on behavior at baseline and therapeutic alliance trajectories over time can predict youth outcomes.

It is especially interesting that therapeutic alliance plays such a strong role in a residential treatment setting, where the youth's entire environment has been significantly altered. In this particular situation, the youth live in a large village with about 500 other youth, complete with its own school system. The intervention is not delivered only by the staff in the home, but rather, also is actively supported by the teachers, coaches, mentors and professional mental health counselors employed by the agency, as well as the peer relationships formed among the youth. The core intervention (an adaptation of the Teaching Family Model) itself is quite complex; containing a token economy system, peer leadership system, a family-style focus, and core curriculum and skill-teaching with a strong cognitive-behavioral focus (Davis & Daly, 2003; Wolf et al., 1976). Despite the complexity of the intervention, it is noteworthy that the quality of the working relationship between youth and their primary service providers were predictive of subsequent outcomes during care.

It is curious that the finding of the relationship between therapeutic alliance and outcomes was not replicated for the longer-term model (see Table 3). It suggests that the trajectory of therapeutic alliance during the first six months of care is not predictive of change in outcomes from baseline to twelve months. One possibility is that therapeutic alliance may be more predictive of youth behavior earlier in services before youth have developed other forms of support, such as friendships with peers or relationships with other adults, such as mentors or counselors. In the Teaching Family Model, the first six months are typically seen as more intensive learning phases of the intervention, and following six to 12 months are more of a maintenance and generalization phase (Davis & Daly, 2003). While direct-care staff are still involved with youth, they are in more of a supportive role, helping youth to generalize their skills to new situations. Thus, as time passes, these perhaps additional

relationships with peers and other adults may emerge as significant predictors of youth behavior and compete, to some degree, with influence from direct-care staff. Future research should consider assessing the degree of influence from these disparate sources to provide a more complete picture of the social context of youth behavior in care.

The lack of findings predicting youth outcomes in Table 3 may also be related to a limitation of the data set. A substantial number of youth began to leave the program during 6–12 months of care, whereas other youth may have remained in the program for several years, making the analyses of changes in therapeutic alliance in these later months somewhat problematic. Future research should be conducted on a larger sample of youth over a longer time period to better capture the complete trajectories of therapeutic alliance for those that discharge early as compared to those that remain in care longer; in this study, power limitations due to the small sample size precluded an examination of differences of therapeutic alliance trajectories among youth with shorter or longer lengths of stay.

Nonetheless, our finding that therapeutic alliance trajectories may lead to improved behavior during care adds to the field of mental health services research. It adds support to the call for incorporating routine assessment of therapeutic alliance in services (Bickman et al., 2012). By routinely collecting therapeutic alliance data, providers can obtain more information on the quality of the working relationship and how it changes over time. Additional research into the trajectories of therapeutic alliance could help to identify weak or deteriorating alliances among providers and clients that may be in need of direct intervention, and could then be used to monitor the effectiveness of these efforts to improve the working relationship. For example, descriptive studies of therapeutic alliance with youth in out-of-home care has found that youth therapeutic alliance scores typically start high, decline, and then gradually increase over time (Duppong Hurley et al., 2012; Rauktis, Vides De Andrade, Doucette, McDonough, and Reinhart, 2005). These issues regarding the trajectories of therapeutic alliance ratings are an important consideration when trying to decide if therapeutic alliance is having the desired effects on youth outcomes. Better understanding of the trajectories of therapeutic alliance in a variety of youth treatment settings can also help in the design and development of strategies to improve therapeutic alliance, which has been called for by other researchers (Bickman et al., 2012).

Limitations

First, this was a pilot study, so a larger study is needed to see if the findings can be replicated and examined further, such as by comparing youth with differing therapeutic alliance trajectories during care. Second, there is an issue with the baseline behavior assessments, as they were conducted 5 weeks into treatment. This was necessary as staff needed to be with the youth for enough time to gather enough interaction time and interpersonal experiences to complete the behavior rating scales. So the baseline data does not reflect the level of externalizing behaviors that were occurring in the previous placement, but rather are reports of youth behavior a month or more into treatment. Moreover, the behavior ratings scales were completed by service-providers on youth receiving services or youth self-report and not by parents or guardians. Thus, the behavior ratings are likely to be lower because the youth are still in services. Moreover, the service

providers are particularly trained to deal with youth with emotional difficulties, thus, their tolerances for behaviors is likely quite different than for the parent or caregiver ratings at home. While it would have been ideal to have parent/caregiver ratings of youth behavior at intake and discharge, it was beyond the scope of this pilot study and should be attempted in future research. Also, as discussed above, there were a number of youth who left before the 12 month assessment; it would be helpful if future research encompassed programs where youth remained in care for longer periods of time. Likewise, future research would benefit from collecting longer term outcome data, such as 6 and 12 months following the discharge from services to see if the effects of therapeutic alliance are related to long-term functional outcomes. Finally, there are some questions regarding generalizability. First, this research was conducted with a single provider. While this was an asset in controlling for differences among the different treatment agencies (e.g., organizational climate and culture; Glisson, 2002; Glisson & Green, 2011), it does require replication in other sites to determine if the findings are generalizable across residential agencies. Second, the research was focused on youth with a disruptive behavior disorder; it would be helpful if research were conducted with youth primarily dealing with other disorders, such as depression or mood disorders to see if the findings could be replicated. It would be also to examine the construct of therapeutic alliance with other measures, to see if they findings are robust across multiple assessments. This is especially true for the staff measure, TAQR that consisted of only a single item. Finally, this approach should be replicated in other treatment settings, such as out-patient services.

Implications

This pilot study suggests the importance of assessing and monitoring the quality of therapeutic alliance in a residential setting, from the perspective of both the youth and the staff. This study supports the idea that the quality of the therapeutic relationship, especially from the vantage point of youth, is related to youth outcomes in a residential care setting, much like in outpatient therapy (Karver et al., 2006; Shirk & Karver, 2003; Shirk et al., 2011). Future research needs to focus on the trajectory of therapeutic alliance from the staff and youth perspectives. If practitioners could effectively monitor alliance ratings to easily identify which relationships were low or deteriorating then perhaps steps could be taken to improve the alliance, ranging from interventions with staff members to perhaps moving the youth to a new group-home where the relational “fit” between youth and staff is improved.

This study also suggests that implementing routine monitoring of therapeutic alliance into care is feasible. Staff and youth were both able to complete the short therapeutic alliance assessments relatively easily via a web-based delivery system. The next step is to monitor therapeutic alliance over time and provide feedback to practitioners on the quality and trajectory of alliance. Progress in this area is being made, such as the Contextualized Feedback System that monitors and provides practitioners feedback regarding common therapeutic factors such as therapeutic alliance (Garland, Bickman, & Chorpita, 2010). By collecting the necessary data to better understand how therapeutic alliance trajectories may differ for youth during the course of treatment and with different individual client characteristics (e.g., history of trauma or abuse and neglect, age of first out-of-home placement) we may be able to better intervene to improve the quality of the therapeutic

alliance. Clearly this study suggests that more research, as well as practical applications, are warranted in the area of the longitudinal assessment of therapeutic alliance and outcomes for youth.

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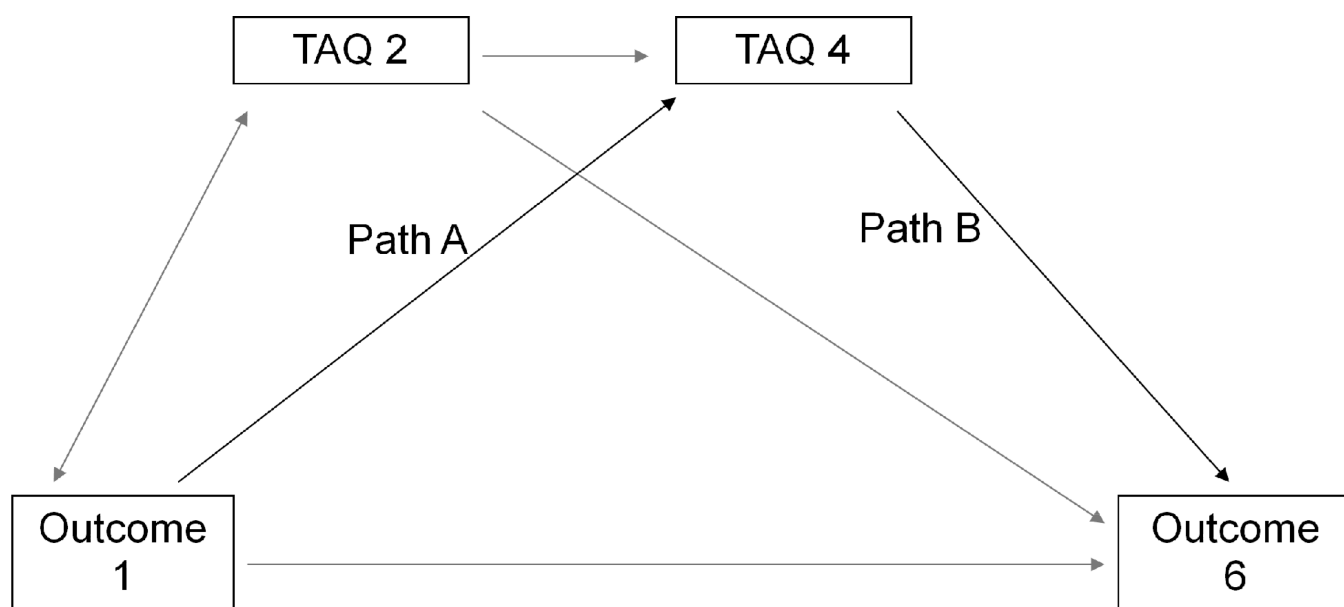


Figure 1.
 Change in Therapeutic Alliance Short-Term Model
 Hypothesized model. TAQ = Therapeutic Alliance Questionnaire.

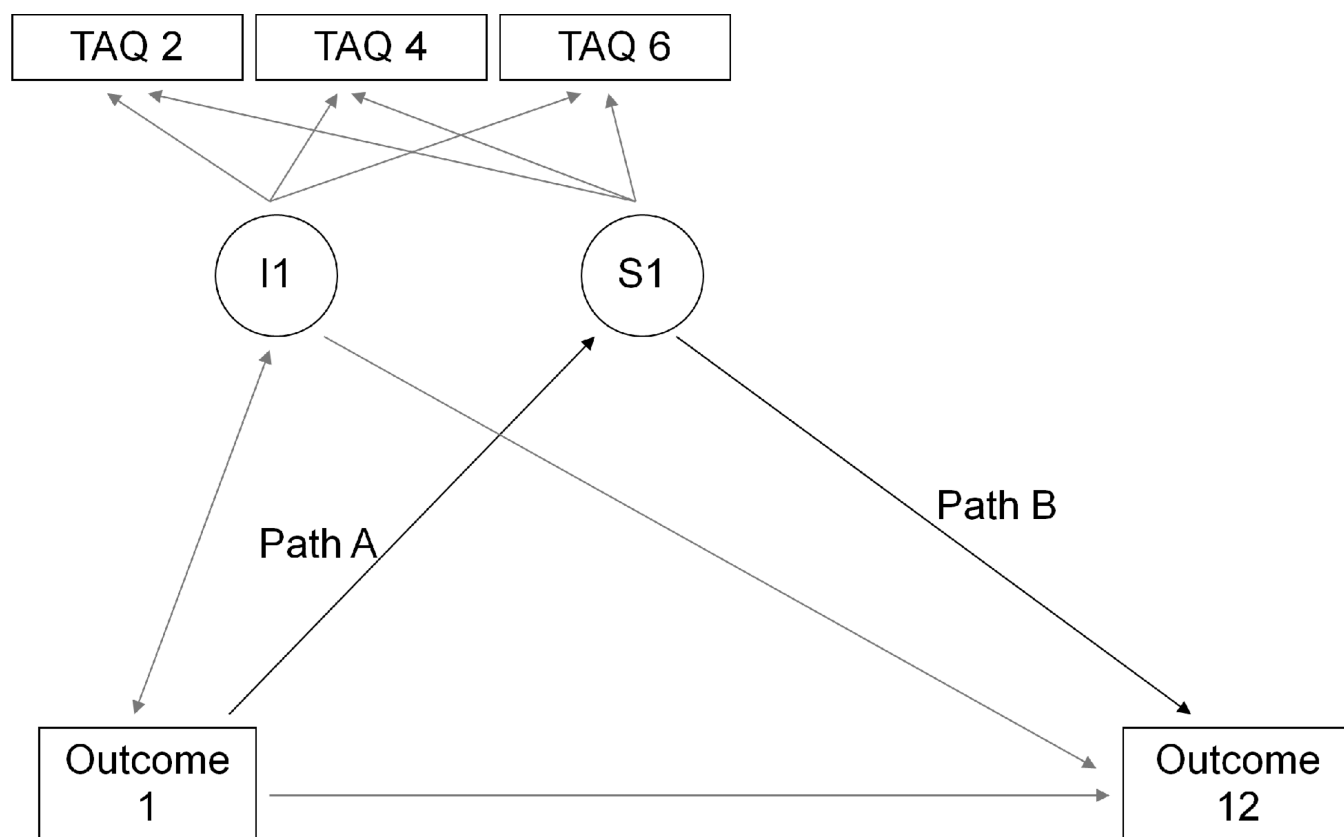


Figure 2.
Change in Therapeutic Alliance Long-Term Model
Hypothesized model. TAQ = Therapeutic Alliance Questionnaire. I = Intercept. S = Slope.

Table 1

Correlations and Sample Descriptives (continuous outcomes only)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. TAQS (2 months)	—											
2. TAQS (4 months)	.63***	—										
3. TAQS (6 months)	.55***	.73***	—									
4. TAQR (2 months)	.18	.22*	.27**	—								
5. TAQR (4 months)	.32***	.34***	.40***	.56***	—							
6. TAQR (6 months)	.33***	.42***	.40***	.48***	.68***	—						
7. Ext (CBCL baseline)	-.09	-.17	-.20*	-.42***	-.24**	-.21*	—					
8. Ext (CBCL 6 months)	-.14	-.33***	-.25**	-.40***	-.34**	-.50***	.45***	—				
9. Ext (CBCL 12 months)	-.19	-.25*	-.13	-.22*	-.11	-.22*	.43***	.60***	—			
10. Ext (SFSS baseline)	-.09	-.12	-.06	-.02	-.19*	-.16	.14	.10	.05	—		
11. Ext (SFSS 6 months)	-.21*	-.21*	-.25**	-.23*	-.30**	-.28**	.07	.28**	.28**	.41***	—	
12. Ext (SFSS 12 months)	-.12	-.05	-.09	.06	-.05	-.02	-.17	-.02	.18	.38***	.56***	—
<i>N</i>	103	98	94	106	99	95	110	94	105	112	94	88
<i>M</i>	3.83	3.69	3.65	3.90	3.94	4.02	57.84	56.26	56.37	1.52	1.48	1.40
<i>SD</i>	.78	.92	.95	.60	.57	.58	9.67	8.89	10.80	.37	.35	.35

Note: TAQS=Therapeutic Alliance Quality Scale, youth therapeutic alliance ratings with staff; Staff TA Rating = the single-item staff rating of therapeutic alliance with the youth; CBCL= the Child Behavior Checklist, rated by staff; the SFSS=Symptom Functioning and Severity Scale, rated by youth.

* $p < .05$,

** $p < .01$,

*** $p < .001$.

Table 2

Model 1 coefficients as standardized (s) and exponentiated (e) beta coefficients and 95% confidence intervals

Predictors	Model fit	Path A	Path B	TAQ 1-6	Outcome 1-6
TAQS					
CBCL	CFI = 1.00; TLI = 1.00; RMSEA = .00	-.11 _s (-.26 .04)	-.33 _s ^{**} (-.55 -.11)	.61 _s ^{***} (.49 .74)	.41 _s ^{***} (.26 .57)
Non-compliance incidents		.97 _e (.92 1.02)	.83 _e (.49 1.14)	.65 _e ^{***} (.53 .77)	1.15 _e ^{***} (1.11 1.19)
Aggression incidents		.99 _e (.95 1.04)	.43 _e ^{***} (.32 .58)	.62 _e ^{***} (.50 .75)	1.14 _e ^{***} (1.10 1.17)
Problem behavior incidents		.99 _e (.93 1.06)	.53 _e ^{***} (.39 .72)	.63 _e ^{***} (.50 .75)	1.20 _e ^{***} (1.14 1.26)
TAQR					
SFSS	CFI = 1.00; TLI = 1.00; RMSEA = .00	-.19 _s [*] (-.35 -.03)	-.15 _s (-.36 .07)	.55 _s ^{***} (.40 .70)	.39 _s ^{***} (.21 .56)
Non-compliance incidents		.99 _e (.99 1.02)	.42 _e ^{***} (.29 .59)	.55 _e ^{***} (.40 .70)	1.16 _e ^{***} (1.12 1.20)
Aggression incidents		1.01 _e (.98 1.04)	.47 _e ^{***} (.31 .72)	.57 _e ^{***} (.42 .71)	1.13 _e ^{***} (1.09 1.18)
Problem behavior incidents		.99 _e (.95 1.04)	.89 _e (.55 1.45)	.57 _e ^{***} (.43 .71)	1.19 _e ^{***} (1.13 1.25)

Note. Prediction of externalizing behavior and TAQ involves standardized beta coefficients (noted with “s” subscript); prediction of incident data involves exponentiated beta coefficients (noted with “e” subscript). TAQS=Therapeutic Alliance Quality Scale, youth therapeutic alliance ratings with staff; TAQR = the single-item staff rating of therapeutic alliance with the youth; CBCL= the Child Behavior Checklist, rated by staff; the SFSS=Symptom Functioning and Severity Scale, rated by youth.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3

Model 2 coefficients as standardized (s) and exponentiated (e) beta coefficients and 95% confidence intervals

Predictors	Model fit	Path A	Path B	Outcome 1->12
TAQS				
CBCL	CFI = .99; TLI = .99; RMSEA = .02	-.17 _s [†] (-.34 .01)	-.17 _s (-.41 .07)	.42 _s ^{***} (.26 .58)
Non-compliance incidents		.99 _e (.97 1.03)	1.02 _e (.90 1.09)	1.07 _e [*] (1.00 1.13)
Aggression incidents		1.00 _e (.98 1.04)	1.10 _e (.96 1.19)	1.10 _e ^{***} (1.05 1.15)
Problem behavior incidents		1.01 _e (.98 1.05)	.90 _e (.84 1.03)	1.22 _e ^{***} (1.16 1.27)
TAQR				
SFSS	CFI = 1.00; TLI = 1.00; RMSEA = .00	-.18 _s [†] (-.39 .04)	-.13 _s (-.44 .19)	.40 _s ^{***} (.22 .59)
Non-compliance incidents		1.00 _e (.98 1.03)	.97 _e (.90 1.07)	1.07 _e [*] (1.00 1.13)
Aggression incidents		1.00 _e (.97 1.03)	.96 _e (.89 1.07)	1.10 _e ^{***} (1.05 1.15)
Problem behavior incidents		1.00 _e (.98 1.03)	.99 _e (.92 1.08)	1.22 _e ^{***} (1.16 1.27)

[†]
p = .06.

^{*}
p < .05.

^{**}
p < .01.

^{***}
p < .001.