

Alliance and adherence in a systemic therapy

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Background: The client–therapist working alliance is a key contributor to effective adult psychotherapy. However, little is known about its role in family and systemic therapy. Moreover, few studies have assessed alliance longitudinally or have investigated how it interrelates with other process variables, such as therapist adherence (i.e. the extent to which the therapist adheres to the treatment protocol or manual). We hypothesised that alliance and adherence interrelate over the course of the therapy. **Method:** This study investigated the bidirectional associations between alliance and therapist adherence using cross-lagged panel analyses for a sample of 1970 adolescents and their families participating in Multisystemic Therapy (MST). A number of client characteristics were included as moderators, namely demographic characteristics, type and severity of adolescent problem behaviour, and whether or not the MST treatment was court ordered. Alliance and adherence were scored by the primary caregiver through telephone interviews at monthly intervals during treatment. **Results:** Alliance in 1 month predicted therapist adherence in a subsequent month. Adherence only predicted subsequent alliance during the middle part of the treatment process. The results were not moderated by any of the client factors. **Conclusions:** The results suggest that alliance and therapist adherence may reinforce one another during therapy. Although alliance may facilitate the development of therapist adherence, adherence may subsequently deepen and consolidate the client–therapist alliance. These results are independent of client characteristics.

Key Practitioner Message

- Working alliance between client and therapist, and adherence of the therapist to the treatment protocol both contribute to effective family and system therapy, but the interaction between them over time is unknown.
- Our results show that alliance and therapist adherence reinforce one another.
- It seems important to build a strong alliance at the start of therapy. Adherence to the therapy protocol helps to deepen and consolidate the working alliance.

Keywords: Adolescence; antisocial behaviour; delinquency; family therapy; structural equation modelling

Introduction

Working alliance is a key contributor to effective psychotherapy and can be defined as the affective and collaborative aspects of the client–therapist relationship. It is usually conceptualised as personal alliance (the affective bond) and task-related alliance (addressing the goals of the treatment and the tasks required to achieve those goals; Bordin, 1979; Hougaard, 1994). The association of a strong alliance with positive treatment outcomes is well established in individual adult psychotherapy (Martin, Garske, & Davis, 2000; Norcross & Wampold, 2011). Recent meta-analyses have suggested that alliance can also be important for effective family and systemic therapy (Friedlander,

Escudero, Heatherington, & Diamond, 2011; Karver, Handelsman, Fields, & Bickman, 2006). In family and systemic therapy a therapist often has to deal with multiple alliances (Robbins, Turner, Alexander, & Perez, 2003). The current study will focus on caregiver-reported alliance within a systemic therapy in which sessions primarily take place with the primary caregiver. Previous research regarding systemic therapy has suggested that parent–therapist alliance may be a better predictor of child outcomes than child– or adolescent–therapist alliance (Hogue, Dauber, Stambaugh, & Cecero, 2006; McLeod, 2011).

So far, the process through which alliance plays a role in therapy remains unknown for a number of reasons. Firstly, most studies have measured alliance on

only one occasion, thus failing to take into account the longitudinal and developmental nature of alliance during therapy (Berkel, Mauricio, Schoenfelder, & Sandler, 2011; Crits-Christoph, Gibbons, Hamilton, Ring-Kurtz, & Gallop, 2011). Alliance may fluctuate over time and different developmental patterns of alliance may be associated with different treatment outcomes (Stiles et al., 2004). Secondly, few studies have assessed how alliance relates with other process variables, such as therapist adherence or client involvement (McLeod, 2011; McLeod, Southam-Gerow, Tully, Rodríguez, & Smith, 2013). Yet, theoretical models posit that these process variables work together to initiate and facilitate therapeutic change (Goldfried & Davila, 2005; Hill, 2005; Karver, Handelsman, Fields, & Bickman, 2005).

Therapist adherence is the extent to which the therapist adheres to a treatment protocol or manual (McLeod et al., 2013; Perepletchikova & Kazdin, 2005). Therapist adherence is crucial in the dissemination and implementation of evidence-based interventions as it ensures that the key components of the intervention are being delivered as intended (Mihalic, 2004). Since evidence-based interventions have demonstrated their effectiveness in empirical studies, ensuring therapist adherence is a means to warrant continued positive treatment outcomes (Mihalic, 2004; Schoenwald, 2008).

Studies investigating the conjoint role of alliance and adherence have usually tested specific hypotheses regarding the mediating or moderating role of alliance on outcome, assessing alliance and adherence at a single point in time (e.g. Castonguay, Goldfried, Wiser, Raue, & Hayes, 1996; The Multisite Violence Prevention Project, 2014; Tschuschke et al., 2015; Webb et al., 2012). Yet, theoretical models argue that alliance and therapist adherence are essential in each phase of therapy and are interrelated all along (Goldfried & Davila, 2005; Hill, 2005). Alliance and adherence both enable the therapist and the client to create engagement and confidence in the therapy, to explore the problems and underlying causes, to accomplish the therapeutic tasks, and to facilitate successful termination of treatment. Alliance contributes to this through its affective and collaborative bond, which motivates and encourages the client. Adherence, on the other hand, may create confidence in the therapists' skills and provide the actual tools and techniques to foster therapeutic change. On top of their individual contribution, alliance and adherence may enhance one another: whereas a strong alliance may be a precondition for the adherent implementation of the intervention techniques, adherence may foster confidence in the therapist's skills, and thereby deepen the client-therapist alliance (Goldfried & Davila, 2005; Hill, 2005).

Failing to take the developmental nature of alliance and adherence into account, using only a single score for each construct, may prevent studies from discovering the true processes through which alliance and adherence jointly influence treatment outcomes. This may have led to contradictory findings in the past. Some studies did not find any association between alliance and adherence (The Multisite Violence Prevention Project, 2014), whereas others showed alliance to

predict adherence (Tschuschke et al., 2015), or to mediate the association between adherence and outcome (Weck, Grikscheit, Jakob, Höfling, & Stangier, 2015). In the absence of a strong alliance, a rigid focus on adherence may either lead to further deterioration of the alliance and interfere with therapeutic change (Barber et al., 2006; Castonguay et al., 1996), or may 'save' a treatment with low alliance, leading to positive treatment outcomes (Webb et al., 2012). Yet, as far as we know, studies that did investigate alliance and adherence longitudinally have not yet been able to support the bidirectional associations between alliance and adherence hypothesised in the theoretical models. Hukkelberg and Ogden (2013) did not find any significant associations between alliance and adherence in parent management training (PMTO, a family-focused method for children with externalising problem behaviour). Weck et al. (2015), who, besides the analyses on single alliance scores discussed above, also conducted longitudinal analyses, showed that alliance during the first, but not the second, session predicted adherence in the following session. Adherence did not predict subsequent alliance. Of the studies described above, only two assessed family interventions (Hukkelberg & Ogden, 2013; The Multisite Violence Prevention Project, 2014). Both interventions worked primarily with the primary caregivers and targeted children and adolescents with emerging behavioural problems. These studies did not find any significant associations between alliance and adherence.

In our study, we hypothesised that alliance and therapist adherence would influence one another over the course of therapy, which is in accordance with the theoretical models of Goldfried and Davila (2005) and Hill (2005). For this purpose, we used routinely collected data from Multisystemic Therapy (MST), an evidence-based, and intensive home- and community-based intervention for adolescents with antisocial and/or delinquent behavioural problems (12–18 years old; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009). Sessions mainly take place with caregivers, as, according to the MST theory of change, reductions in the adolescent externalising behavioural problems can be achieved through an increase in the parental sense of competence and the use of positive discipline (Deković, Asscher, Manders, Prins, & van der Laan, 2012). Within MST, caregiver-therapist alliance and therapist adherence are both related to reductions in antisocial and delinquent behavioural problems (Granic et al., 2012; Schoenwald, 2008; Schoenwald, Chapman, Sheidow, & Carter, 2009), yet their bidirectional association has not been assessed before.

Thus, this study aimed to investigate whether alliance in one month would influence therapist adherence in a subsequent month and vice versa. Therefore, we assessed both variables conjointly at five monthly intervals. We also tested these associations across subsamples of our client population to investigate whether the functioning of alliance and adherence within treatment would be stable across client characteristics (i.e. demographic characteristics, type of problem behaviour, severity of problem behaviour and whether or not the family participated in MST on court-order; Barnhoorn et al., 2013).

Method

Participants

Adolescents. Families were referred to MST due to severe externalising behavioural problems of the adolescent. Families had to meet the MST inclusion criteria, which have been specified by MST Services, the international licensor for the dissemination of MST (MST Services, 2014). A total of 2393 MST trajectories started at one of the four participating treatment centres between July 2008 and January 2015. If a family started MST twice during the research period ($N = 11$), only the first treatment episode was included for analyses, because inclusion of both treatment episodes would lead to dependency in the data. Another 412 families were excluded as they did not have any valid alliance or adherence assessments, resulting in a final sample of 1970 clients (82% of the total sample).

The mean age of the 1970 participating adolescents was 15 ($SD = 1.41$), 69% were male, 24% of the adolescents were of nonwestern origin, 47% lived in a single-parent household and 57% participated in MST on a court order. Most adolescents experienced externalising behavioural problems in the clinical range (75%) or the borderline range (9%) based on the Child Behavior Check List 6–18 (CBCL; Achenbach & Rescorla, 2001). Moreover, 56% of the adolescents also experienced internalising behavioural problems in the borderline or clinical range.

Therapists. Multisystemic therapy was provided by 130 therapists working across 22 teams in four treatment centres. As part of the routine quality assurance and improvement system of MST, aimed at upholding adherence to the MST treatment model, all therapists followed an initial 5-day orientation training, participated in weekly supervision and expert consultation meetings, and attended quarterly booster sessions.

Measures

Alliance and adherence. Client–therapist alliance and therapist adherence were measured using the Therapist Adherence Measure Revised (TAM-R; Henggeler, Borduin, Schoenwald, Huey, & Champan, 2006; see also http://www.mstinstitute.org/qa_program/tam_languages.shtml). This questionnaire consists of 28 items rated on a 5-point Likert scale (1 ‘not at all’, 2 ‘a little’, 3 ‘some’, 4 ‘pretty much’, and 5 ‘very much’). On a monthly basis, employees from an independent call centre completed the TAM-R by interviewing the primary caregiver, which was most often the mother (82%), followed by the father (15%).

Although the TAM-R was originally developed to monitor therapist adherence to the MST model, several previous studies have found the questionnaire to also contain an alliance-factor (Ellis, Weiss, Han, & Gallop, 2010; Henggeler, Schoenwald, Liao, Letourneau, & Edwards, 2002). A recent Dutch study confirmed two factors: ‘client–therapist alliance’ and ‘therapist adherence’ (Lange & van der Rijken, 2014). In the current study, only items clearly distinguishing between both factors were retained, dropping items loading on both factors. Reliability of the resulting two factors was good (Cronbach’s $\alpha = .86$ for ‘client–therapist alliance’ and $\alpha = .91$ for ‘therapist adherence’). ‘Client–therapist alliance’ consisted of seven items and measured the personal alliance (e.g. ‘My family and the therapist were honest and straightforward with each other’) as well as the task-related alliance (e.g. ‘Our family agreed with the therapist about the goals of treatment’). ‘Therapist adherence’ consisted of 10 items assessing therapist adherence to the MST clinical process and the treatment principles of MST (e.g. ‘The therapist’s recommendations required family members to work on our problems almost every day’). Three of these items targeted specific behavioural problems (e.g. ‘The therapist helped us keep our child from hanging around with troublesome friends’).

Only valid assessments (assessments by the primary caregiver, with a maximum of four missing items, and where face-to-face contact between the family and the therapist had

occurred in the last 2 weeks prior to administration of the TAM-R; MST Institute, n.d.a,b) were included for analyses. Families provided on average 3.41 valid TAM-R administrations ($SD = 1.36$). Scores for alliance and therapist adherence could only be computed if all items on the specific factor had been scored.

Client characteristics. The primary caregiver completed the Child Behavior Checklist for children aged 6–18 years (CBCL; Achenbach & Rescorla, 2001) to assess type and severity of the behavioural problems, and a questionnaire on demographic characteristics. Both questionnaires were completed on paper or online, depending on the routine practices of the treatment centre. These client characteristics were included as moderators in the analyses.

Procedures

All Dutch treatment centres collecting their alliance and therapist adherence scores through an independent call centre ($N = 4$) were requested to share their data, which they had collected as part of their routine practices. All four centres agreed. Clients were informed that completing the questionnaires was part of the treatment and that the data could also be used for research purposes. The study was approved by the Committee Scientific Research Participation of the Vincent van Gogh Institute and complied to the American Psychological Association’s ethical principles regarding research with human participants.

Strategy for analysis

To investigate the bidirectional associations between alliance and adherence, we conducted cross-lagged panel analyses in Mplus 7.3 (Muthén & Muthén, 1998–2012). We specified a model with a fixed number of five time points (T1–T5). Since alliance and adherence were collected on a monthly basis, our model included all assessments collected in the first 5 months of the MST treatment, because the length of an MST treatment should, in general, not exceed 5 months. Missing alliance or adherence scores were taken into account using a FIML estimator with robust standard errors, implemented as MLR in Mplus, to make use of all the available data and provide better estimations of standard errors when normality assumptions are violated.

The basic model (see Figure 1) included the initial covariance between alliance and adherence at T1, as well as the disturbance covariances between alliance and adherence at T2–T5 (the latter are not shown for reasons of clarity). Furthermore, the model contained the stability paths between adjacent measurements, as well as the cross-lagged effects of alliance at one point in time on adherence at the next point in time and vice versa. We performed a series of multigroup analyses to test whether the observed cross-lagged associations were moderated by gender, age (based on median split: $<16, \geq 16$), ethnicity (western origin, nonwestern origin), type of household (single-parent or multiple-parent household), type of problem behaviour (no problems, externalising problems, comorbid externalising and internalising problems based on a T -score in the borderline or clinical range), severity of externalising problem behaviour (nonclinical, borderline, clinical T -score), and referral reason (court-ordered or not). The Satorra and Bentler (2001) scaled chi-squared difference test was used to compare the fit of the unconstrained model (no constraints on all covariances, stability paths and cross-lagged paths) with a constrained model in which all covariances, stability paths and cross-lagged paths were constrained to be equal across groups. The COMPLEX module implemented in Mplus was used to account for nonindependence of observations due to cluster sampling (therapists treating more than one family). The goodness of fit of the models was assessed using the chi-square and p values, the comparative fit index (CFI; Bentler, 1990), and the root mean square error of approximation (RMSEA; Steiger, 1990). CFI values above .90 indicate an acceptable fit, and values above .95 indicate an excellent fit to the data. RMSEA values below .08 suggest an acceptable fit, and values below .05 indicate a good fit (Hu & Bentler, 1999).

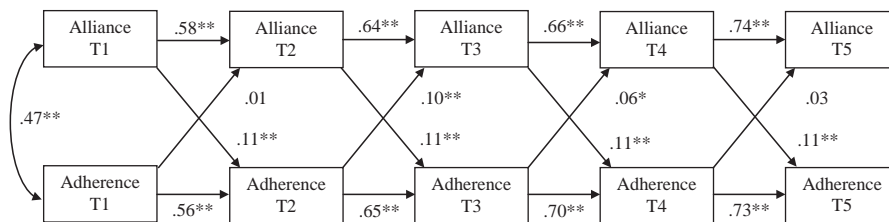


Figure 1. Standardised coefficients for the associations between alliance and adherence from T1 to T5. * $p < .01$; ** $p < .001$

Results

Descriptive statistics

Table 1 lists the correlations between the alliance and adherence scores across the five measurements, as well as the means and standard deviations. Paired samples *t*-tests revealed mean T1-alliance scores to be significantly ($p < .01$) lower than mean alliance scores at subsequent measurements, which did not differ significantly from one another. Mean adherence scores were found to increase significantly ($p < .01$) across all successive measurement intervals.

Cross-lagged panel models

Although for one of the multigroup analyses the difference in model fit between the constrained and unconstrained model reached significance, all of the modification indices for the paths of interest were small in the constrained model (M.I. < 10). This indicates that model fit would not improve much when allowing the parameters of interest to differ across groups. Therefore, we retained a single-group model. For reasons of parsimony, we constrained the cross-lagged paths from alliance to adherence to be equal across measurement intervals. This did not result in a significant deterioration of model fit ($p > .05$). However, when constraining the cross-lagged paths from adherence to alliance to be equal across measurement intervals, the model fit did significantly deteriorate ($p < .05$). Therefore, we left these paths unconstrained in the final model. In a further attempt to specify the most parsimonious model, we constrained the disturbance covariances, as well as the stability paths of alliance and adherence to be equal across measurement points. These three actions also led to a significant deterioration in model fit, so, in the final model, these paths were also left unconstrained.

Figure 1 summarises the standardised results of the final cross-lagged model estimating the overtime

associations between alliance and adherence. This model fitted the data well, $\chi^2(27) = 270.40$; CFI = .94; RMSEA = .07. The CFI and RMSEA values were close to the recommended cut-off values of .95 and .05 indicating good fit. Firstly, a significant positive association ($r = .47, p < .01$) was found at T1 between alliance and adherence, indicating that at this stage higher levels of alliance go together with higher levels of adherence. Secondly, stability coefficients of alliance and adherence were all significant ($p < .01$) and appeared to increase across subsequent measurement intervals, suggesting that alliance and adherence become increasingly stable over time. That is, as the intervention progresses, earlier relative levels of alliance and adherence become increasingly predictive of later relative levels of alliance and adherence respectively. Stabilities of alliance and adherence appear to be about equally strong. Finally, and foremost, significant cross-lagged effects were found in both directions. Alliance had a positive stable effect on subsequent adherence across all measurement intervals (standardised $\beta = .11; p < .001$). Adherence only had an effect on subsequent alliance from T2 to T3 and from T3 to T4 (standardised β s of .10, $p < .001$, and .06, $p < .01$), whereas it did not relate to subsequent alliance at the start and end of treatment (standardised β s ranging from .01 to .03, $p > .05$). These findings indicate that higher levels of alliance at one measurement point predicted an increase in adherence at the next measurement point (i.e. 1 month later). Similarly, higher levels of adherence predicted an increase in alliance 1 month later, but only during the middle part of the treatment process.

Discussion

This study investigated the bidirectional associations of caregiver–therapist alliance and therapist adherence over time. We found that alliance in one month consistently predicted therapist adherence in a subsequent

Table 1. Pearson correlations among alliance and adherence, and means and standard deviations

Measure	1	2	3	4	5	6	7	8	9	10
1. Alliance T1										
2. Alliance T2	.57									
3. Alliance T3	.51	.65								
4. Alliance T4	.41	.56	.67							
5. Alliance T5	.43	.54	.64	.74						
6. Adherence T1	.47	.24	.26	.19	.18					
7. Adherence T2	.37	.53	.39	.31	.30	.59				
8. Adherence T3	.28	.43	.58	.44	.38	.47	.68			
9. Adherence T4	.31	.40	.50	.63	.47	.44	.60	.75		
10. Adherence T5	.29	.39	.48	.55	.61	.39	.57	.70	.77	
Mean	4.51	4.58	4.61	4.63	4.66	3.36	3.86	4.03	4.11	4.20
SD	.56	.52	.50	.51	.49	1.06	.83	.77	.75	.71

All correlations are significant at the .01 level (two-tailed).

month. Therapist adherence only predicted subsequent alliance during the middle phase of treatment. These results were stable across a range of client characteristics, namely adolescent age, gender and ethnicity, single-parent versus multiple-parent households, type and severity of adolescent problem behaviour, and whether or not the treatment was court ordered. This means that the bidirectional associations between alliance and adherence were not moderated by client characteristics and can be generalised to the whole MST population.

The results suggest that alliance may function as a catalyst for adherence. Building a good working relationship and setting common goals may facilitate adherence to the treatment protocol. These findings are similar to findings from previous studies on individual adult psychotherapy showing that alliance predicted adherence (Tschuschke et al., 2015; Weck et al., 2015). Moreover, the results are in accordance with the MST treatment manual, according to which an MST therapist should start by creating engagement and a positive working relationship, and formulating common treatment goals. After this initial phase, the therapist can use specific interventions to address the identified problems (Henggeler et al., 2009).

Adherence predicted subsequent alliance, but only during the middle phase of treatment. Providing MST according to the treatment model may further deepen and consolidate the alliance between the therapist and the client. A client's confidence in the therapist may improve if a clear strategy is apparent. Also, if the therapist is delivering the treatment in an adherent manner, it may be easier to identify common goals and associated tasks (Goldfried & Davila, 2005; Hill, 2005). It is surprising that the effect of adherence on alliance only emerged halfway through treatment, as adherence to the MST treatment model also requires focussing on topics, such as client motivation and engagement, which are important at the start of treatment. However, for the purposes of the current study, we only included items clearly distinguishing between alliance and adherence. The resulting adherence measure mainly consisted of items reflecting problem-solving techniques, which are expected to be most apparent in the middle of therapy, where the therapist and client jointly work on the client's problems (Henggeler et al., 2009). Moreover, the current findings are comparable to the results of Hukkelberg and Ogden (2013) regarding PMTO. They assessed alliance and adherence at the 3rd (T1), 12th (T2) and 20th (T3) session (with a mean number of 24 sessions). The effect of alliance on adherence was strongest at the start of therapy (from T1 to T2), whereas the effect from adherence on alliance was strongest halfway the treatment process (from T2 to T3). Although none of these associations were significant, the standardised effects were larger than corresponding associations in our study.

Our cross-lagged effects did not vary across client demographic characteristics nor across type and severity of adolescent behavioural problems. The conclusion that alliance and adherence may reinforce one another does therefore seem to hold for a varied MST population. Nevertheless, closer inspection of the data revealed that adherence scores did vary across client characteristics. For example, nonwestern families and families participating in MST on court order provided higher adherence scores than western families or families participating in

MST without a court order. Adherence at the start of treatment was lower for adolescents with externalising behavioural problems in the clinical range than for adolescents without externalising behavioural problems. This is in line with previous research suggesting that problem severity may hamper adherent implementation of MST (Schoenwald, Letourneau, & Halliday-Boykins, 2005). Alliance did not appear to vary much across client characteristics, although this may be a consequence of the small variance of alliance in the current study.

Alliance only increased between T1 and T2, after which it stabilised. This is consistent with the MST treatment model, stating that alliance should be established in the initial phase, after which it should remain relatively stable (notwithstanding that this may require considerable work on the part of the therapist; Henggeler et al., 2009). Previous research has shown that alliance may be characterized by short rupture-and-repair sequences (Stiles et al., 2004). As these ruptures can be repaired in just one or two sessions, identifying such ruptures would require session-to-session assessments, instead of our monthly assessments. It would be interesting to investigate whether such temporary ruptures of alliance would also impact therapist adherence.

Contrary to alliance, adherence increased during the whole treatment period. This may indicate that adherence becomes easier as treatment progresses. However, so far, little is known about such underlying processes. An alternative hypothesis for the increasing adherence scores may be that, as treatment progresses, parents develop a better understanding of what the therapist is doing, and, therefore, are better able to identify adherent therapist behaviour. It is also possible that families become more positive about their therapist when positive treatment outcomes are being achieved, and hence give higher scores on the adherence items.

We should note that, although our results were significant, the effects were relatively small. It is likely that other factors, such as parental engagement or therapist experience, influence the development of alliance and therapist adherence during treatment as well. Besides, MST is a treatment with an elaborate quality assurance and improvement system, aimed at supporting therapists providing MST. This is reflected in the high mean scores on alliance and therapist adherence and the small standard deviation. With such restricted ranges, it may be harder to detect effects. Nevertheless, significant cross-effects were found. An important strength of the cross-lagged panel design employed is its control for the initial correlation between alliance and adherence, and for their stabilities over time. Given these controls, the size and consistency of the cross-lagged effects suggest meaningful relationships of sufficient strength to warrant attention.

Several caveats should be kept in mind when interpreting our results. Firstly, the TAM-R was developed to measure adherence to the MST treatment model, and was not designed as an alliance measure. In addition, both alliance and adherence were scored by the same informant, meaning that the results might have been inflated due to shared-method variance. Nevertheless, since the correlation between both scales at the start of the treatment was only medium, the factors can be assumed to measure two distinct processes. The TAM-R scales for alliance and adherence

also had high internal consistencies and achieved high stability within an MST treatment episode. Thus, the reliability and validity of the two factors of the TAM-R seem adequate.

Secondly, some scholars have argued that caregivers may be less accurate adherence-informants than therapists or trained raters (Chapman, McCart, Letourneau, & Sheidow, 2013). Being untrained in the treatment, caregivers may not be able to detect changes in adherence. Due to their loyalty towards their therapist, they may further be unwilling to rate the therapist poorly (Chapman et al., 2013; Schoenwald et al., 2011). Nevertheless, the TAM-R is a validated and reliable adherence measure, and predicts a range of short- and long-term treatment outcomes (Huey, Henggeler, Brondino, & Pickrel, 2000; Schoenwald et al., 2009). The increasing adherence scores in our study further suggest that families may be capable of detecting changes in adherence.

It would be interesting to replicate the current findings using other informants for alliance and adherence. Previous studies on client–therapist alliance and therapist adherence within MST suggest that adolescents tend to report somewhat lower levels of alliance and adherence than caregivers (Chapman et al., 2013; Ryan et al., 2013). Adolescent–therapist alliance may be more difficult to achieve and maintain, since these adolescents usually do not experience their life as problematic and may feel frustrated in their freedom as parental interventions are being implemented (personal communication with a panel of clinicians). In a study on alliance in family therapy (multidimensional family therapy; MDFT), adolescent-reported alliance was associated with decreases in externalising behavioural problems, but only if the initial alliance was weak and subsequently improved (Hogue et al., 2006). It would be interesting to investigate whether such lower adolescent–therapist alliance is compensated for by an increase in adherence.

Although our study was restricted to MST, we have no reason to believe that the reinforcing patterns of alliance and therapist adherence would be different in other family therapies whereby sessions primarily take place with the caregiver. However, since the mean alliance and adherence scores in our sample were high, we do not know whether alliance and adherence would equally reinforce one another if one of them is very low. Indeed, previous research has suggested that a rigid focus on adherence in the absence of alliance may hamper treatment (Barber et al., 2006; Castonguay et al., 1996). Notwithstanding the caveats mentioned above, the present study represents one of the first attempts to model the bidirectional associations of alliance and therapist adherence over five assessments for almost 2000 families. The large number of participating clients further allowed us to conduct moderator analyses, to investigate whether the results would differ for different subgroups of clients. Our findings were not dependent on client characteristics.

Conclusion

Taken together, we have put theoretical models on the associations of alliance and adherence to the test. Our results support the importance of building a strong alliance at the start of the treatment, as this may facilitate adherent implementation of intervention techniques.

Adherence may be important to maintain a strong working alliance.

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References

- Achenbach, T., & Rescorla, L. (2001). *Manual for the ASEBA school-age forms & profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth & Families.
- Barber, J.P., Gallop, R., Crits-Christoph, P., Frank, A., Thase, M.E., Weiss, R.D., & Gibbons, M.B.C. (2006). The role of therapist adherence, therapist competence, and alliance in predicting outcome of individual drug counseling: Results from the National Institute Drug Abuse Collaborative Cocaine Treatment Study. *Psychotherapy Research*, 16, 229–240.
- Barnhoorn, J., Broeren, S., Distelbrink, M., de Greef, M., van Grieken, A., & Jansen, W., ... & Raat, H. (2013). *Cliënt-, professioneel- en alliantiefactoren: Hun relatie met het effect van zorg voor jeugd [Cliënt-, professional-, and alliancefactors: Their association with the effect of youth care]*. Nijmegen/Rotterdam/Utrecht, Rotterdam, Utrecht, the Netherlands: HAN, Erasmus MC/Gemeente Rotterdam, Verwey-Jonker Instituut.
- Bentler, P.M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238–246.
- Berkel, C., Mauricio, A.M., Schoenfelder, E., & Sandler, I.N. (2011). Putting the pieces together: An integrated model of program implementation. *Prevention Science*, 12, 23–33.
- Bordin, E.S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research and Practice*, 16, 252–260.
- Castonguay, L.G., Goldfried, M.R., Wiser, S., Raue, P.J., & Hayes, A.M. (1996). Predicting the effect of cognitive therapy for depression: A study of unique and common factors. *Journal of Consulting and Clinical Psychology*, 64, 497–504.
- Chapman, J.E., McCart, M.R., Letourneau, E.J., & Sheidow, A.J. (2013). Comparison of youth, caregiver, therapist, trained, and treatment expert raters of therapist adherence to a substance abuse treatment protocol. *Journal of Consulting and Clinical Psychology*, 81, 674–680.
- Crits-Christoph, P., Gibbons, M.B., Hamilton, J., Ring-Kurtz, S., & Gallop, R. (2011). The dependability of alliance assessments: The alliance-outcome correlation is larger than you might think. *Journal of Consulting and Clinical Psychology*, 79, 267–278.
- Deković, M., Asscher, J.J., Manders, W.A., Prins, P.J.M., & van der Laan, P. (2012). Within-intervention change: Mediators of intervention effects during Multisystemic Therapy. *Journal of Consulting and Clinical Psychology*, 80, 574–587.
- Ellis, M.L., Weiss, B., Han, S., & Gallop, R. (2010). The influence of parental factors on therapist adherence in Multi-systemic therapy. *Journal of Abnormal Child Psychology*, 38, 857–868.
- Friedlander, M.L., Escudero, V., Heatherington, L., & Diamond, G.M. (2011). Alliance in couple and family therapy. *Psychotherapy*, 48, 25–33.
- Goldfried, M.R., & Davila, J. (2005). The role of relationship and technique in therapeutic change. *Psychotherapy: Theory, Research, Practice, Training*, 42, 421–430.
- Granic, I., Otten, R., Blokland, K., Solomon, T., Engels, R.C., & Ferguson, B. (2012). Maternal depression mediates the link between therapeutic alliance and improvements in adolescent

- externalizing behavior. *Journal of Family Psychology*, 26, 880–885.
- Henggeler, S.W., Borduin, C.M., Schoenwald, S.K., Huey, S.J., & Champan, J.E. (2006). *Multisystemic Therapy Adherence Scale-Revised (TAM-R)*. Unpublished instrument, Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, SC.
- Henggeler, S.W., Schoenwald, S.K., Borduin, C.M., Rowland, M.D., & Cunningham, P.B. (2009). *Multisystemic Therapy for antisocial behavior in children and adolescents*. New York: Guilford.
- Henggeler, S.W., Schoenwald, S.K., Liao, J.G., Letourneau, E.J., & Edwards, D.L. (2002). Transporting efficacious treatments to field settings: The link between supervisory practices and therapist fidelity in MST programs. *Journal of Clinical Child Psychology*, 31, 155–167.
- Hill, C.E. (2005). Therapist techniques, client involvement, and the therapeutic relationship: Inextricably intertwined in the therapy process. *Psychotherapy: Theory, Research, Practice, Training*, 42, 431–442.
- Hogue, A., Dauber, S., Stambaugh, L.F., & Cecero, J.J. (2006). Early therapeutic alliance and treatment outcome in individual and family therapy for adolescent behavior problems. *Journal of Consulting and Clinical Psychology*, 74, 121–129.
- Hougaard, E. (1994). The therapeutic alliance – A conceptual analysis. *Scandinavian Journal of Psychology*, 35, 67–85.
- Hu, L.T., & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6, 1–55.
- Huey, S.J., Henggeler, S.W., Brondino, M.J., & Pickrel, S.G. (2000). Mechanisms of change in Multisystemic Therapy: Reducing delinquent behavior through therapist adherence and improved family and peer functioning. *Journal of Consulting and Clinical Psychology*, 68, 451–467.
- Hukkelberg, S.S., & Ogden, T. (2013). Working alliance and treatment fidelity as predictors of externalizing problem behaviors in parent management training. *Journal of Consulting and Clinical Psychology*, 81, 1010–1020.
- Karver, M.S., Handelsman, J.B., Fields, S., & Bickman, L. (2005). A theoretical model of common process factors in youth and family therapy. *Mental Health Services Research*, 7, 35–51.
- Karver, M.S., Handelsman, J.B., Fields, S., & Bickman, L. (2006). Meta-analysis of therapeutic relationship variables in youth and family therapy: The evidence for different relationship variables in the child and adolescent treatment outcome literature. *Clinical Psychology Review*, 26, 50–65.
- Lange, A.M.C., & van der Rijken, R.E.A. (2014). *Structuur van de 'Therapist Adherence Measure-Revised' (TAM-R) binnen Multisysteem Therapie (MST) [Structure of the 'Therapist Adherence Measure-Revised' (TAM-R) within Multisystemic Therapy (MST)]*. Halsteren, the Netherlands: The Viersprong Institute for Studies on Personality Disorders.
- Martin, D.J., Garske, J.P., & Davis, M.K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 68, 438–450.
- McLeod, B.D. (2011). Relation of the alliance with outcomes in youth psychotherapy: A meta-analysis. *Clinical Psychology Review*, 31, 603–616.
- McLeod, B.D., Southam-Gerow, M.A., Tully, C.B., Rodríguez, A., & Smith, M.M. (2013). Making a case for treatment integrity as a psychosocial treatment quality indicator for youth mental health. *Clinical Psychology: Science and Practice*, 20, 14–32.
- Mihalic, S. (2004). The importance of implementation fidelity. *Report on Emotional and Behavioral Disorders in Youth*, 4, 83–105.
- MST Institute (n.d.a). *MST Therapist Adherence-Revised (TAM-R): Guidelines for administration*. Available from: www.mst institute.org/qa_program/tam.shtml [last accessed 3 June 2016].
- MST Institute (n.d.b). *MST Therapist Adherence Measure – Revised (TAM-R): Guidelines for interpretation*. Available from: www.mst institute.org/qa_program/tam.shtml [last accessed 3 June 2016].
- MST Services (2014). *Multisystemic Therapy® (MST®) organizational manual*. Charleston, SC: Author.
- Muthén, L.K., & Muthén, B.O. (1998–2012). *Mplus user's guide* (7th edn). Los Angeles: Author.
- Norcross, J.C., & Wampold, B.E. (2011). Evidence-based therapy relationships: Research conclusions and clinical practices. *Psychotherapy*, 48, 98–102.
- Perepletchikova, F., & Kazdin, A.E. (2005). Treatment integrity and therapeutic change. Issues and research recommendations. *Clinical Psychology: Science and Practice*, 12, 365–383.
- Robbins, M.S., Turner, C.W., Alexander, J.F., & Perez, G.A. (2003). Alliance and dropout in family therapy for adolescents with behaviour problems: Individual and systemic effects. *Journal of Family Psychology*, 17, 534–544.
- Ryan, S.R., Cunningham, P.B., Foster, S.L., Brennan, P.A., Brock, R.L., & Whitmore, E. (2013). Predictors of therapist adherence and emotional bond in Multisystemic Therapy: Testing ethnicity as a moderator. *Journal of Child and Family Studies*, 22, 122–136.
- Satorra, A., & Bentler, P.M. (2001). A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika*, 66, 507–514.
- Schoenwald, S.K. (2008). Toward evidence-based transport of evidence-based treatments: MST as an example. *Journal of Child and Adolescent Substance Abuse*, 17, 69–91.
- Schoenwald, S.K., Chapman, J.E., Sheidow, A.J., & Carter, R.E. (2009). Long-term youth criminal outcomes in MST transport: The impact of therapist adherence and organizational climate and structure. *Journal of Clinical Child and Adolescent Psychology*, 38, 91–105.
- Schoenwald, S.K., Garland, A.F., Chapman, J.E., Frazier, S.L., Sheidow, A.J., & Southam-Gerow, M.A. (2011). Toward the effective and efficient measurement of implementation fidelity. *Administration and Policy in Mental Health and Mental Health Services Research*, 38, 32–43.
- Schoenwald, S.K., Letourneau, E.J., & Halliday-Boykins, C. (2005). Predicting therapist adherence to a transported family-based treatment for youth. *Journal of Clinical Child and Adolescent Psychology*, 34, 658–670.
- Steiger, J.H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behaviour Research*, 25, 173–180.
- Stiles, W.B., Glick, M.J., Osatuke, K., Hardy, G.E., Shapiro, D.A., Agnew-Davies, R., . . . & Barkham, M. (2004). Patterns of alliance development and the rupture-repair hypothesis: Are productive relationships U-shaped or V-shaped. *Journal of Counselling Psychology*, 51, 81–92.
- The Multisite Violence Prevention Project (2014). Implementation and process effects on prevention outcomes for middle school students. *Journal of Clinical Child and Adolescent Psychology*, 43, 473–485.
- Tschuschke, V., Crameri, A., Koehler, M., Berglar, J., Muth, K., Staczan, P., . . . & Koemeda-Lutz, M. (2015). The role of therapists' treatment adherence, professional experience, therapeutic alliance, and clients' severity of psychological problems: Prediction of treatment outcome in eight different psychotherapy approaches. Preliminary results of a naturalistic study. *Psychotherapy Research*, 25, 420–434.
- Webb, C.A., DeRubeis, R.J., Dimidjian, S., Hollon, S.D., Amsterdam, J.D., & Shelton, R.C. (2012). Predictors of patient cognitive therapy skills and symptom change in two randomized clinical trials: The role of therapist adherence and the therapeutic alliance. *Journal of Consulting and Clinical Psychology*, 80, 373–381.
- Weck, F., Grikscheit, F., Jakob, M., Höfling, V., & Stangier, U. (2015). Treatment failure in cognitive-behavioural therapy: Therapeutic alliance as a precondition for an adherent and competent implementation of techniques. *British Journal of Clinical Psychology*, 54, 91–108.

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