

Associations between Therapeutic Alliance and Treatment Outcomes in an
Intervention for Children with Externalizing Behavior and Mild to Borderline
Intellectual Disabilities

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Abstract

The quality of the alliance between client and therapist is suggested to be a critical factor in explaining treatment outcomes in both adult and child psychotherapy. This study examines associations between the therapeutic alliance (TA) and the effectiveness of Standing Strong Together (SST), a group-based parent and child intervention for children with mild to borderline intellectual disabilities (MBID; IQ 55-85) and externalizing behavior. A repeated measures design is used to assess externalizing behavior, positive parenting and the parent-child relationship before and after treatment ($N = 97$). Audio-recordings of mid-treatment sessions were analyzed to examine the TA quality. In the current study, children in families with a high TA quality showed greater reductions in externalizing behavior, reported by their parents, than did children in families with a low TA quality. The child-therapist alliance individually predicted externalizing behavior reductions, while the parent-therapist alliance did not. Therapeutic alliance quality was not associated with SST outcomes in terms of positive parenting and the parent-child relationship. Findings of the current study demonstrate that a high quality of therapeutic alliance in Standing Strong Together is associated with a stronger decrease of externalizing behavior in children with MBID.

Keywords: Therapeutic alliance; Standing Strong Together; Children; Adolescents;

Externalizing behavior; Mild to borderline intellectual disabilities.

Introduction

Research to evidence-based psychotherapy practices has shown that approximately 75-80% of psychotherapy patients benefit from treatment and that these results can be generalized across several types of problems, treatments, and settings (Lambert & Ogles, 2004). At this time, research looking at therapy effectiveness not only examines *if* therapies are effective but also *what* factors contribute to this effectiveness. A dominant theoretical viewpoint is that successful psychotherapy outcomes can be ascribed to a variety of factors, which can be roughly distinguished into intervention-specific and non-specific factors. Intervention-specific factors are unique for each treatment, whereas non-specific factors commonly occur across all types of treatment (Lambert & Bergin, 1994). Research has confirmed the assumption that not only intervention-specific factors, but also non-specific factors contribute to treatment outcomes (e.g. Alexander, Barton, Schiaro, & Parsons, 1976; Karver, Handelsman, Fields, & Bickman, 2005; Lambert & Barley, 2001). Moreover, it has been suggested that therapeutic techniques account for approximately 15 % of variance in therapy outcomes, while 30% of variance is attributable to non-specific factors (Lambert & Barley, 2001). A growing body of literature on psychotherapy effectiveness points out that therapeutic alliance (TA) quality is a non-specific factor associated with treatment success across various types of treatment and disorders (Martin, Garske, & Davis, 2000). Also, in child and adolescent therapy, TA quality has been found to be associated with treatment outcomes, especially in children with externalizing behavior (Shirk & Karver, 2003).

The therapeutic alliance is mostly conceptualized as a combination of three essential elements: agreement on treatment *goals*, agreement on treatment *task(s)*, and the quality of the *bond* between therapist and client (Bordin, 1979). It is emphasized that it is of particular importance that the therapist and client come to an agreement on therapeutic goals and on ways to achieve these goals. Disagreements on goals or tasks decrease the collaboration between client

and therapist and therefore increase the risk of a negative alliance. The bond between therapist and client addresses the affective relationship, in which factors such as empathy, respect, and trust play an important role (Bordin, 1979). Although there are multiple formulations and perspectives on TA (Elvins & Green, 2008), most alliance measurements are based on a three-dimensional formulation such as Bordin's (Willemse & Hafkenscheid, 2009).

As it comes to the relation between TA quality and treatment outcomes, meta-analytic studies revealed that high TA quality, compared to low TA quality, is modestly but consistently associated with better treatment outcomes for both adults (Martin et al., 2000) and children (Shirk & Karver, 2003). Concerning psychotherapy for adults with mental health problems, TA quality was found to have a moderate effect on treatment outcomes, which was consistent across different treatments, outcomes, and informants (Martin et al., 2000). Regarding TA-outcome associations in child and adolescent therapy, effect sizes comparable to TA-outcome associations in adult literature were found (Shirk & Karver, 2003). However, unlike in adult psychotherapy, TA-outcome associations were found to be stronger in children/adolescents with externalizing behavior than in children/adolescents with internalizing behavior (Shirk & Karver, 2003). A stronger TA-outcome association for externalizing behavior in child/adolescent psychotherapy is consistent with the view that the establishment of TA in children and adolescents with externalizing behavior is more difficult and therefore more critical, when compared to children/adolescents with internalizing behavior (DiGiuseppe, Linscott, & Jilton, 1996; Eltz, Shirk, & Sarlin, 1995).

Interventions targeting externalizing behavior in children and adolescents mostly combine parent management training (PMT) with child-focused cognitive behavioral therapy (CBT), since the combination of PMT and CBT is suggested to be most effective (Kazdin, Siegel, & Bass, 1992; Lochman & Wells, 2004; McCart, Priester, Davies, & Azen, 2006). It has been found that

children who completed CBT view TA quality as highly important for treatment success (Kendall & Southam-Gerow, 1996). Additionally, almost 90% of child/adolescent therapists evaluate TA quality as one of the most important factors for treatment success (DiGiuseppe et al., 1996). Regarding PMT, a higher quality of the parent-TA was found to be related to greater improvements in parenting skills and children's behavior after treatment (Kazdin, Whitley, & Marciano, 2006). On the contrary, a comparable study did not report relations between TA quality and improvements in children's behavior (Hawley & Weisz, 2005). More recently, relations between TA quality and externalizing behavior, family functioning and perceived social support were found across several types of alliances, such as child-TA, parent-TA, and family-TA (Hawley & Garland, 2008). Although research on TA-outcome associations may differ to some extent, existing literature overall provides strong indications that both child-TA as parent-TA quality contribute to several treatment outcomes, especially in psychotherapy targeting externalizing behavior.

However, although TA is viewed as a pivotal mechanism for change in child and adolescent therapy, research on this subject lag far behind adult-focused research (Shirk & Karver, 2003). Furthermore, the majority of studies examined TA-outcome associations in children and adolescents with average intelligence, which makes it unclear if their findings also apply for children with mild to borderline intellectual disabilities (MBID; IQ 50-85). It is found that children with MBID have a three to four times greater risk of developing externalizing behavior, when compared to children with average intelligence (Dekker, Koot, Van der Ende, & Verhulst, 2002). Also, externalizing behavior in children with MBID seems to be more persistent over time (Green, O'Reilly, Itchon, & Sigafos, 2005) and children with MBID and externalizing behavior have found to be overrepresented in child welfare and justice systems (Kaal, 2010). Given that TA-outcome associations seem stronger for externalizing behavior in child and

adolescent therapy, it can be hypothesized that TA is of substantial importance for intervention effectiveness in children with MBID and externalizing behavior.

The current study examines TA-outcome associations in Standing Strong Together (SST): a group-based, multicomponent intervention intended for children/adolescents with MBID and externalizing behavior. It has been demonstrated that cognitive behavioral therapeutic techniques and PMT can be beneficial, provided that adaptations are made to meet the needs of children with MBID (Kazdin & Whitley, 2006a; Van Nieuwenhuijzen, Orobio de Castro, & Matthys, 2006). A randomized control trial (RCT) showed that SST (combined with care as usual (CAU)) was more effective in reducing externalizing behavior in children with MBID, as reported by teachers, when compared with CAU only. Furthermore, SST led to more improvements in the parent-child relationship and increased positive parenting, when compared to CAU (Schuiringa, Van Nieuwenhuijzen, Orobio de Castro, Lochman, & Matthys, 2016). Although studies to the effectiveness of interventions for children/adolescents show promising results, overall effect sizes of intervention effects on treatment outcomes are found to be in the small to middle range (Cohen, 1998). As TA quality is found to be related to intervention outcomes in children with average intelligence (Shirk & Karver, 2003), it is assumable that TA quality also contributes to intervention outcomes in children with MBID.

Yet, concerning TA in children/adolescents (with MBID), it can be questioned if TA can be defined by adult-based definitions and conceptualizations (Bordin, 1979; Elvins & Green, 2008), or that an alternative conceptualization of TA is preferable. First, as it comes to TA structure in children/adolescents, a conceptualization of TA in terms of a more unidimensional construct might be preferable (DiGiuseppe et al., 1996; Faw, Hogue, Johnson, Diamond, & Liddle, 2005), because children and adolescents, regardless of intelligence, are assumed to be less able to discriminate between different aspects of TA (goals, tasks or bond). Second, the

development of TA in children/adolescents is suggested to be different from those in adults (DiGiuseppe et al., 1996). Especially in children with MBID, it can be assumed that the development of TA revolves around different or additional factors, when compared with TA in adults and TA in children with average intelligence (Rose, Loftus, Flint, & Carey, 2005). To clarify; children with MBID often show deficits in cognitive skills, such as working memory, attention, planning, verbalizing feelings (Joyce, Globe, & Moody, 2006; Van Nieuwenhuijzen, Orobio de Castro, van Aken, & Matthys, 2009) and social information processing (Van Nieuwenhuizen et al., 2005), which might affect the development of TA. Also, people with MBID generally tend to be passive in their communication with those of higher social status (Heal & Sigelman, 1995), causing less participation in treatment and lower TA quality. Active encouragement by the therapist could, therefore, be essential in enhancing TA quality in children with MBID. As children with MBID often are referred for treatment without a clear understanding of their problems, more often show problems with authority figures and generally are less motivated in therapy, it is essential to pay attention to the (un)awareness of their problems and their (un)willingness to change in early therapy stages, in order to establish a high TA quality (Karver et al., 2005; Rose et al., 2005). Therapists' techniques to address the client's perception and motivation, and with that to establish a high TA quality, include: providing structure, stimulate participation, and positive reinforcement (DiGiuseppe et al., 1996). It is proposed that therapists should avoid techniques such as confronting the client or defining their problems for them, since these techniques could negatively affect the TA quality (Rollnick & Miller, 1995).

As it comes to group-based interventions such as SST, Bordin's (1979) individual therapy-based conceptualization of TA (Willemse & Hafkenscheid, 2009) may also be less desirable. In group therapy, TA includes more than one relationship (therapist-client) and

therefore relies on the combination of intrapersonal elements (e.g. therapy commitment, acceptance), interpersonal elements, and intra-group elements (mutual trust, support, and stimulation). A more systemic definition of TA is therefore assumed to be more accurate in group therapy (Burlingame, Fuhriman, & Johnson, 2001). In group therapy, it is suggested that clients are likely to adapt their behavior to that of their therapist (Barlow, Hansen, Fuhriman, & Finley, 1982). Interpersonal engagement between group members can in this way be stimulated by the therapist. In addition, an optimistic attitude and the provision of positive rather than negative feedback are viewed as therapeutic techniques that contribute to higher TA quality in group therapy (Morran, Stockton, Cline, & Teed, 1998). Therapists' behavior may, therefore, be more important in forming TA in group therapy, when compared to individual therapy. Given the importance of the therapists' behavior, in particular in child/adolescent and group therapy, the current study addressed TA quality in terms of therapists' in-session behavior that aims to build a high-quality alliance, rather than in terms of the agreements on goals and tasks, and the affective bond.

Concerning associations between TA quality and intervention outcomes in children with MBID and externalizing behavior, it is first hypothesized that children's externalizing behavior will decrease more in families with a high-quality TA, compared to a low-quality TA. Second, both parenting behavior and the parent-child relationship are expected to increase more in families with a high-quality TA, compared to families with a lower TA quality. Finally, it is expected that both the child-TA and parent-TA quality individually predict externalizing behavior reductions in children with MBID. To address these issues, SST outcomes and audio-recorded sessions from a previous study to SST effectiveness (Schuiringa et al., 2016) are used to examine associations between TA quality and externalizing behavior, positive parenting, and the parent-child relationship.

Methods

Design

The current study used data derived from a cluster RCT on the effectiveness of SST (Schuiringa et al., 2016). This RCT was conducted in twelve Dutch treatment centers, all with multiple treatment locations, where children with MBID received treatment for externalizing behavior problems. A repeated measures design was used to examine differences in SST outcomes between participants with high and low TA quality. The current study included two moments of measurement: pre-test measures were conducted before the start of the intervention and post-test measures followed immediately after the intervention.

Participants

A total of 169 families with a child with MBID, receiving treatment for externalizing behavior, participated in the RCT to examine the effectiveness of SST. Children ranged from nine to sixteen years, since SST is indicated for children from these ages. All families were required to be able to communicate in Dutch and children were required to live with their biological parents or alternative legal caregivers. Children met the inclusion criteria regarding MBID if they had an IQ score between 55-70, or between 71-85 with additional limitations in social adaptive functioning, as this corresponds with the definition of MBID in the Dutch welfare system. Requirements regarding externalizing behavioral problems were met if children scored above the 90th percentile on the Rule Breaking or Aggression scale of the Child Behavior Check List (CBCL, see Measures). Families were excluded from participation in cases of active psychosis, severe visual/auditory problems and when children were clinically diagnosed with autism spectrum disorder, since SST as an intervention is not suitable for these families. Cluster

randomization at the location level assigned each family to the intervention condition or control condition.

The current study on TA-outcome associations in SST only included families assigned to the intervention condition ($N = 97$), since families in the control condition did not receive SST. Information on IQ and socio-economic status (SES) was absent for 19 children, who were therefore excluded from data analysis. Thus, a total of 68 families was analyzed in the current study. Families were assigned to either the *low TA quality* group ($N = 30$) or the *high TA quality* group ($N = 38$), based on their observed TA quality in SST. Participating children were boys (75,3%) and girls (24,7%) with ages between 9 and 16 ($M = 12.34$, $SD = 0.43$). Children's mean IQ was 74.9 ($SD = 10.70$). The average socio-economic status (SES) was 4,50 ($SD = 2.02$), indicating a parental educational level of lower vocational education. Parents were involved as informants on SST outcomes in the study as much as possible. In 17,6% of the cases, questionnaires were filled in by both parents together. The majority of the questionnaires were filled in by only one parent (mothers: 72,1%, and fathers: 8,8%), and type of informant was unknown in 1,5% of the cases.

Procedure

During the first stage of the study, families were considered eligible for participation depending on the inclusion criteria regarding MBID, externalizing behavior, age, language, and residence situation. After participant selection, information letters containing detailed information on the study content and purpose and a request for written consent were distributed through participating treatment centers. After obtaining active consent, pre-test assessments for parents were conducted during a home visit. A visiting researcher verbally administered the questionnaires and registered parents' responses. The researcher provided additional explanations when parents did not

understand subjects in the questionnaires, using a list with synonyms and additional explanations. After the last session of SST, post-test assessments were conducted following the same procedure as pre-treatment assessments. Questionnaires intended for teachers were sent and returned by mail at pre-test and post-test.

During the intervention period, both parent-sessions and child-sessions were audio-recorded, and recordings of session five (session six if session five was not recorded) were coded by a research employee and two research assistants. It has been suggested that a TA develops around the third or fourth session (DiGiuseppe et al., 1996), and therefore there has been chosen to code a session in the middle of treatment, rather than a session at the start. Measures of TA at different sessions across different trainers were unfavorable, since these measures would yield a less comparable image of TA quality.

The Intervention

Standing Strong Together (SST) is a protocolled intervention aiming to reduce externalizing behavioral problems in children with MBID between nine and sixteen years old. SST is based on the Utrecht Coping Power Program (UCPP; Van de Wiel et al., 2007), and combines CBT for the child with PMT. Adaptations that were made to be a better fit to children with MBID and their caregivers included: (1) supplementary psycho-education for parents regarding the functioning of children with MBID, (2) enhanced repetition of subjects during the course of SST, (3) increased usage of visual cues, (4) providing less information per session, (5) increased use of active exercises, and (6) simplified language.

SST sessions include a retrospect on the previous session, after which new skills are introduced and practiced through exercises such as role-play, memory games and videotapes. New homework is presented and discussed at the end of each session. Parent sessions are offered

parallel to the child sessions. Themes addressed in parent sessions match themes in child sessions as much as possible. The main focus in the parent intervention is to increase parenting skills that aim to improve positive behavior and reduce negative behavior in children. For additional information on the content of SST sessions, see the intervention protocol (Van 't Hof et al., 2014) or the RCT on SST effectiveness (Schuiringa et al., 2016).

Clinical Staff Training

Before the start of the intervention, clinicians working in participating treatment centers attended a one-day clinical staff training to become a certified SST trainer. During the clinical staff training, clinicians received information about SST in terms of theoretical background, implementation of content and relevance of following the protocol. Clinicians also actively practiced with important therapeutic techniques, such as motivating, establishing a safe environment, distributing their attention and explaining exercises from the protocol. During the intervention, clinicians attended two supervision sessions, in which relevant subjects and challenging experiences were brought up, discussed, or practiced between clinicians. Training and supervision regarding clinical staff training were provided by trainers who were involved in the development of SST.

Measures

Therapeutic alliance quality

A self-developed observer rating scale for TA was used to rate TA quality in the child and parent sessions. The developed instrument was based on an existing measure for TA in individual therapy (McLeod & Weisz, 2005), but several adaptations were made to provide an instrument suitable for group therapy. The instrument contained a total of twelve items to measure TA in

both children and parent sessions, with one additional question exclusive for parent sessions. Items assessed therapists' in-session behavior in terms of, among other things, participation stimulation, motivating behavior, provision of structure and positive versus negative feedback. All items were rated on a Likert scale ranging from 1 (*not at all*) to 5 (*very often*), with higher ratings indicating higher TA quality. One item was formulated in reverse, so ratings of this item were reversed after coding. Individual child and parent TA ratings were combined into a total parent-child TA scale. The reliability of the total parent-child TA scale showed to be questionable with a Cronbach's alpha of .60. After deletion of two questions concerning the explanation of the therapist and therapist's preparation, the reliability was good (Cronbach's alpha = .80). A dichotomous TA quality variable (0 = *low TA quality*, 1 = *high TA quality*), based on the median of the mean parent-child TA scores (4.05), was used in TA-outcome analyses.

Inter-rater reliability between the coded data of the research employee and two research assistants was calculated to examine which coder showed highest reliability with the other coders. The research employee showed highest rates of inter-rater reliability ($r = .70-.90$ in 95% of the sessions, and $r = .67-.70$ in 5% of the sessions) and therefore only ratings of the research employee were used to analyze TA.

Externalizing behavior

Parents and teachers acted as informants on children's externalizing behavior. Parents completed the Aggression and Rule breaking subscales of the Dutch version of the Child Behavior Check List (CBCL; Verhulst, Van der Ende, & Koot, 1996) at the start of SST (pre-test) and directly after SST (post-test). Teachers completed the same subscales (Aggression, Rule-breaking) on the Teacher Report Form (TRF; Verhulst, Van der Ende, & Koot, 1997), at pre-test and post-test. For

both the CBCL and TRF, Cronbach's alphas above .87 were found, indicating high subscale reliability. Raw scores were used in the current study in further analyses.

Positive parenting

To assess positive parenting, subscales from both the Dutch version of the Alabama Parenting Questionnaire (APQ; Shelton, Frick, & Wootton, 1996) and the Ghent Parental Behavior Scale (GPBS; Van Leeuwen & Vermulst, 2004) were combined into a positive parenting scale. The subscales Parental Involvement, Positive Parenting, Monitoring and Positive Discipline of the Dutch version of the APQ were combined with the Rule Setting subscale of the GPBS to assess a broader variety of positive parenting characteristics. Reliability of the composed positive parenting scale was good in the current study. Cronbach's alphas were .81 at pre-test and .86 at post-test.

Parent-child relationship

A Dutch version of the Parent Stress Index (PSI): the Nijmeegse Stress Index (NOSI), was used to measure the parent-child relationship. The subscales Acceptance, Sense of Competence, and Attachment from the NOSI were integrated into a parent-child relationship scale. Psychometric properties of the NOSI are found to be satisfactory (De Brock, Vermulst, Gerris, & Abidin, 1992). At both pre-test and post-test, parents completed the parent-child relationship scale to assess parent-child relationship before and after the course of SST. Recoded values for all items of the NOSI were used in all analyses so that high values represented a better parent-child relationship. Cronbach's alphas of sufficient and good value were found at pre-test (.77) and post-test (.81).

Intelligence

Children's intelligence scores (IQ) were estimated by the subtests Vocabulary and Block Design of the Dutch version of the Wechsler Intelligence Scale (WISC-III-NL; Kort et al., 2005).

Completing the WISC-III entirely was judged as time-consuming and too much of a burden for children with MBID. A combination of Vocabulary and Block Design has found to correlate most strongly with outcomes of the complete WISC-III, when compared to (combinations of) other subtests (Silverstein, 1970). Therefore, Vocabulary and Block Design together would yield relative valid estimates of children's intelligence.

Data Analysis

First, to examine the comparability of the low TA and high TA quality groups, it was tested whether these groups differed at baseline in IQ, age, gender, SES, and SST outcomes, using independent sample *t*-tests. Second, associations between TA quality and SST outcomes were examined using a series of repeated measures ANCOVA's. The dichotomous TA quality variable was included as between-subjects factor, with SST outcomes included as within-subjects factors. Demographic characteristics IQ, age, gender, and SES were included as to control for their possible attribution to treatment effects. Associations between TA quality and SST outcomes were examined by interaction effects between TA quality (*low* versus *high*) and changes in SST outcomes over time.

A multiple regression analysis was conducted to analyze if child-TA and parent-TA quality predicted changes in parent-reported externalizing behavior. Mean child-TA and parent-TA scores were included as predictors, and differences between pre- and post-test measures of the CBCL were included as the dependent variable in the regression model.

Results

Descriptive Analysis of Therapeutic Alliance and SST Outcomes

Participants in the current study were appointed to the low TA quality or high TA quality group, based on their TA score, which could range from 1 to 5. Alliance quality in the low TA quality group ranged from 3.67 to 4.05, with a mean TA quality score of 3.90 ($SD = 0.14$). In the high-quality TA group, TA quality ranged from 4.05 to 4.71, with a mean score of 4.43 ($SD = 0.19$). Scores on all SST outcomes were approximately normally distributed in both TA quality groups at pre- and post-test.

There were no significant differences between the low and high TA quality groups in demographic characteristics IQ, SES, and gender. However, children in the high-quality TA group were significantly older than children in the low TA group ($F = 5.82, p = .005$). By including age as covariate, we prevented age differences from confounding the results. No differences were found on parent-reported externalizing behavior, positive parenting and parent-child relationship. However, a significant difference between the low and high TA quality groups at baseline was found on teacher-reported externalizing behavior: teachers reported a higher degree of children's externalizing behavior in families with a low TA quality than did teachers of families with high TA quality ($F = 3.30, p = .05$).

Associations between Therapeutic Alliance and SST Outcomes

Main effects (*pre-test* versus *post-test*) and interaction effects between groups (*low TA quality* versus *high TA quality*) and time were analyzed to examine if TA quality was associated with SST outcomes. Results of the analysis are shown in Table 1.

Table 1. Means, standard deviations of SST outcome variables at pre- and post-test and results of repeated measures ANCOVA's with IQ, age, gender, and SES as covariates.

Measure	Low TA quality		High TA quality		Time effect <i>F(p)</i>	Interaction effect <i>F(p)</i>
	<i>M (SD)</i>		<i>M (SD)</i>			
	Pre-test	Post-test	Pre-test	Post-test		
CBCL T-score	67.95 (6.11)	65.97 (6.64)	68.67 (8.07)	62.33 (8.63)	0.02 (.90) ¹	8.08 (.01)*
TRF T-score	69.58 (9.16)	66.59 (8.67)	63.29 (11.35)	61.96 (10.19)	4.35 (.04) ^{1*}	2.05 (.16)
Positive parenting	2.75 (0.44)	2.75 (0.42)	2.69 (0.26)	2.76 (0.32)	0.90 (.35)	1.11 (.30)
Parent-child relationship	2.79 (0.43)	3.04 (0.49)	2.78 (0.49)	3.05 (0.49)	0.16 (.70)	0.01 (.93)

Note. CBCL T-score = Child Behavior Checklist, externalizing behavior subscale; TRF T-score = Teacher Report Form, externalizing behavior subscale.

¹ Raw scores were analyzed for time and interaction effects.

* $p < .05$.

First, concerning parent-reported externalizing behavior, a significant interaction effect was found between group and time, showing that parents in the high TA quality group reported stronger decreases in their child's externalizing behavior over the intervention period than did parents with a low TA quality. Regarding teacher-reported externalizing behavior, no interaction effect was found for group and time. Teacher-reported externalizing behavior at post-test was

found to be significantly lower in the high TA quality group, compared to low TA quality group, although this difference was also present at pre-test.

Second, associations between TA quality and positive parenting and the parent-child relationship were examined. It was found that parents in the low TA quality group reported equal scores on positive parenting behavior over time, while parents with a high-quality TA showed improvements in positive parenting. However, no significant interaction effect for group and time was found for positive parenting. Regarding the parent-child relationship, both TA quality groups showed improvements over time, but no interaction effect was found: participants with a high TA quality did not report greater improvements than participants from the lower TA group.

Parent and Child Therapeutic Alliance Effects on Externalizing Behavior Change

A multiple regression analysis was used to examine if child-TA and parent-TA quality predicted changes in parent-reported externalizing behavior. The regression model, with child-TA quality and parent-TA included as predictors, showed to be significant and explained 13% of variance in externalizing behavior changes after SST ($F(2,59) = 5.62, p = .006, R^2 = .13$). However, although the total model predicted changes in externalizing behavior after SST, only child TA quality individually predicted changes in children's parent-reported externalizing behavior in children ($p = .004$) after SST: A higher child-TA quality predicted a stronger decrease in parent-reported externalizing behavior in children with MBID after SST.

Discussion

Research has shown that the TA quality is a crucial factor as it comes to intervention effectiveness in both adult as child psychotherapy (Martin et al., 2000; Shirk & Karver, 2003).

The current study examined associations between TA quality and treatment outcomes in

a group-based, combined parent and child intervention for children with MBID and externalizing behavior. It was found that a high-quality TA was associated with greater improvements in children's externalizing behavior, as reported by their parents, when compared to alliances of lower quality. The quality of TA was not related to improvements in positive parenting behavior and the parent-child relationship. With regard to TA quality and SST outcomes in terms of externalizing behavior, only child-TA quality individually predicted changes in externalizing behavior in children with MBID, while parent-TA quality did not.

First, it was found that families reported improvements in children's externalizing behavior directly after the intervention period, regardless of their TA quality. Moreover, following the expectations and consistent with existing literature (Shirk & Karver, 2003), families with a high-quality TA showed stronger decreases in parent-reported externalizing behavior, when compared to families with a lower TA quality. Contrary to expectations, this association was not found for teacher-reported externalizing behavior. However, teacher-reported externalizing behavior was the only SST outcome that was different between the TA quality groups at baseline, which made the high and low TA quality group less comparable as it comes to teacher-reported externalizing behavior in the first place. Alternatively, since TA quality is found to be more critical to intervention outcomes in interventions targeting externalizing behavior, when compared to internalizing behavior (Eltz et al., 1995; Kendall, 1994), it could be possible that associations between TA quality and SST outcomes are moderated by the severity of externalizing behavior. Another explanation is that changes in externalizing behavior might be small and therefore unnoted by teachers. In addition, during SST, parents learn to observe their child's behavior and to recognize behavioral problems (Van 't Hof et al., 2014). Minor positive changes in behavior might therefore be detected by parents and be overlooked by teachers.

Second, unlike findings in existing literature demonstrating greater improvements in parenting behavior in clients with a high-quality TA (Kazdin et al., 2006; Kazdin & Whitley, 2006b), TA quality was not associated with changes in positive parenting in the current study. However, these findings might be somehow distorted, since TA quality was measured as a combination of parent- and child-TA quality. Positive parenting might be less affected by the child-TA quality and more by the parent-TA quality, since parenting skills are exclusively addressed in the parent intervention of SST (Kazdin et al., 2006; Van 't Hof et al., 2014). Another cause could be that the overall TA quality in this study was relatively high, resulting in small differences in TA quality between the low and high TA quality groups. Although there were no substantial differences in positive parenting between the groups, families with a high TA quality reported little improvements, while the lower TA quality group reported no improvements. This could indicate that associations between TA quality and positive parenting might be found in a sample with more variance in TA quality.

Third, concerning improvements in the parent-child relationship after treatment, no associations with TA quality were found in the current study. Moreover, the low and high TA quality groups reported nearly identical improvements in their parent-child relationships. These findings might suggest that improvements in the parent-child relationship in SST are not associated with TA quality, and that TA quality is primarily associated with more behavioral aspects of intervention outcomes. However, these findings could also be explained by a lack of variance in TA quality in the current study. The parent-child relationship may not be sensitive to small differences in TA quality, yet when examined in a sample with more variance in TA quality ratings, TA-outcome associations might be found. Additionally, children's externalizing behavior is found to be related to the quality of the parent-child relationship (Schuiringa, Van Nieuwenhuijzen, Orobio de Castro, & Matthys, 2015), although the direction of this relation is

unclear. Greater reductions in children's externalizing behavior for the high TA quality group, as found in the current study, might lead to greater improvements in the parent-child relationship over time as well. Perhaps, associations between TA quality and the parent-child relationship are not evident directly after treatment but are at follow-up measurements if greater (sustained) externalizing behavior reductions in the high TA quality lead to improvements in the parent-child relationship over time.

Lastly, child-TA and parent-TA quality combined predicted changes in externalizing behavior after SST. However, only child-TA quality appeared to be substantial. The establishment of a high-quality TA in the child intervention therefore seems to be crucial to optimize intervention effectiveness in externalizing behavior reductions. This can be explained by the fact that the child intervention in SST directly focuses on children's externalizing behavior, while the parent intervention aims to reduce externalizing behavior through more indirect paths such as improving parenting skills (Schuiringa et al., 2016). Alternatively, the importance of the child-TA could be related to children's intellectual disabilities and frequent co-occurring cognitive deficits, which are assumed to complicate the use of cognitive techniques in therapy (Sturmey, 2004). Children with MBID may, therefore, benefit more from a high-quality TA, compared to parents or children with average intelligence. In addition, children with MBID often show problems in social information processing and tend to focus more on negative social stimuli (Van Nieuwenhuijzen et al., 2007). Therefore, children with MBID may benefit more from the therapists' use of stimulating techniques and their avoidance of negative techniques in treatment, when compared to children with average intelligence. Also, active stimulation and motivation of children with MBID in treatment enhance self-competence and with that their willingness to learn and practice with new, adaptive behavioral skills (Theeboom, De Knop, &

Weiss, 1995). With this, TA in terms of the therapists' in-session behavior may be of particular importance for treatment outcomes in children with MBID.

Strengths and Limitations

The current study adds weight to a growing body of research and literature on the importance of the therapeutic alliance in child and adolescent therapy. Moreover, this study deviated from the general assessed population with average intelligence and can be viewed as one of the first studies to examine TA-outcome associations exclusively within children with MBID. Also, the current study adds knowledge on elements contributing to the effectiveness of interventions intended for children with MBID and externalizing behavior. Given the multicomponent, group-based structure of SST and the cognitive complications in children with MBID, commonly used instruments to measure TA were less suitable in the current target population. Therefore, a self-developed TA rating-scale based on factors that could affect TA quality in group-based therapy and in children/adolescents with MBID was used and was partly found to successfully predict SST outcomes.

Several limitations in the current study possibly influenced the results, and therefore must be taken into account when interpreting or generalizing current findings. First, quality of TA was based on audio-recorded sessions. Therefore, observers relied only on auditory information and were not able to analyze therapists' nonverbal behavior. Children with MBID often show difficulties in their ability to process verbal and nonverbal information simultaneously, and conflicting verbal and non-verbal expressions from others may lead to misinterpretation in children with MBID (Collot d'Escury, Ebbekink, & Schijven, 2009). Therefore, also nonverbal communication of a therapist might influence TA quality. Second, since there was relatively little

variance in TA quality in the current study, it is possible that differences in TA quality between the groups in the current study were too small to detect associations with SST outcomes.

Nevertheless, even though there was little variance in TA quality in the current sample, a high TA quality was associated with greater improvements in parent-reported externalizing behavior, indicating that even small differences in TA quality contribute to intervention effectiveness as it comes to reductions in externalizing behavior in children with MBID.

Implications for Further Research and Clinical Practices

The current study illustrated the likely benefit of a high-quality TA in a group-based, multicomponent intervention for externalizing behavior in children with MBID. It would be valuable to examine differences in intervention outcomes in study samples with more variance in TA quality. In addition, it might be feasible to rate TA quality based on information of more than one session to yield a more representative image of TA over the entire course of the intervention. As it comes to the assessment of TA quality, a comparison of observers' TA ratings and ratings of other informants, such as therapists, parents, or children would be valuable. Using a multi-informant design is relevant for both validation of the currently used instrument as the assessment of TA from a broader perspective.

Regarding implications for clinical practices, findings of the current study validate the expectations that therapists' in-session behavior focused on the stimulation of a high-quality TA is associated with greater improvements in externalizing behavior. Findings of this study could be included in the content of the clinical staff training, by emphasizing the importance of therapists' TA-stimulating in-session behavior.

The present study shows that TA quality, especially child-TA quality, is associated with improvement in children's externalizing behavior after treatment and therefore might be a

contributing factor to the effectiveness of interventions for children with MBID and externalizing behavior.

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