



2023

Improving the Clinician-Client Relationship in Children's Speech-Language Treatment: An Exploratory Online Training Study

Kerry Danahy Ebert

University of Minnesota-Twin Cities, kebert@umn.edu

Marilyn E. Fairchild

University of Minnesota – Twin Cities, fairc003@umn.edu

DOI: 10.30707/TLCSID7.1.1675490380.853104

Follow this and additional works at: <https://ir.library.illinoisstate.edu/tlcsd>

Recommended Citation

Ebert, Kerry Danahy and Fairchild, Marilyn E. (2023) "Improving the Clinician-Client Relationship in Children's Speech-Language Treatment: An Exploratory Online Training Study," *Teaching and Learning in Communication Sciences & Disorders*: Vol. 7: Iss. 1, Article 7.

DOI: 10.30707/TLCSID7.1.1675490380.853104

Available at: <https://ir.library.illinoisstate.edu/tlcsd/vol7/iss1/7>

This Scholarship of Teaching and Learning Research is brought to you for free and open access by ISU ReD: Research and eData. It has been accepted for inclusion in Teaching and Learning in Communication Sciences & Disorders by an authorized editor of ISU ReD: Research and eData. For more information, please contact ISUREd@ilstu.edu.

Improving the Clinician-Client Relationship in Children's Speech-Language Treatment: An Exploratory Online Training Study

Abstract

Introduction: Clinician-client relationships impact treatment outcomes in speech-language pathology. Training clinicians to improve these relationships might therefore improve treatment outcomes but has not been examined in the field. This study is a preliminary investigation of whether training student clinicians can enhance clinician-client relationships in children's speech-language treatment. **Methods:** The study followed a single-subject multiple baseline design. Five graduate student clinicians completed a web-based training on clinician-client relationships, which was implemented as a series of three modules discussing goals, tasks, and bond. The training's impact on the student's relationships with their child clients was examined through weekly ratings completed by the students, their supervisor, and some parents and children. Intervention effects were measured by visual analysis of baseline versus intervention phases and by Tau-U effect sizes. **Results:** Visual analyses supported change in just under half the possible opportunities, but improvements in the relationship were also present in many of the baseline phases. Tau-U effects that corrected for baseline trend reached significance in 18 of 29 instances, providing support for the effects of the intervention. **Conclusions:** This study provides initial evidence that clinician-client relationship training can be effective for speech-language pathology graduate students. Clinician-client relationship training is a promising area for future investigation.

Keywords

supervision, alliance, single-case design

Cover Page Footnote

The authors thank Gabrielle Farrell and Liliana Williams for their assistance with data collection and management. We are also grateful to the participating students and families.

Introduction

The clinician-client relationship (also known as the working or therapeutic alliance) is widely accepted to influence a client's treatment progress and eventual outcome. Demonstrations of this effect span numerous disciplines including medicine (Fuertes et al., 2017; Rakel et al., 2011), counseling psychology (Accurso et al., 2013; Flükiger et al., 2011), occupational therapy (Morrison & Smith, 2013), and speech-language pathology (Ebert, 2017; Freckmann et al., 2017; Lawton et al., 2019). The influence of the clinician-client relationship exists with both child and adult clients, though with children it becomes important to consider the perspectives of both the child receiving treatment and at least one parent (Accurso et al., 2013; Ebert, 2017).

If the clinician-client relationship is a significant contributor to treatment outcomes, then it is important that clinicians learn how to foster and enhance working relationships with their clients. Enhancing clinician-client relationships also becomes important for treatment research studies, in which maximally effective clinician-client relationships could boost the chances for significant effects from a treatment program. To date, however, there are no empirical investigations of training programs designed to improve clinician-client relationships in speech-language pathology. This exploratory study implemented an online training program for graduate student clinicians working with children. To frame this study, we first review the theoretical model forming the basis of the training, its prior application to speech-language pathology, and the literature in related fields documenting the effects of training programs to improve clinician-client relationships.

Theoretical Bases and Application to Speech-Language Pathology. Though different conceptualizations of the clinician-client relationship exist, Bordin's (1979) tripartite model is one of the most universal. Within this model, the clinician-client relationship encompasses three elements: collaboration on therapy tasks, agreement on therapy goals, and the emotional bond between clinician and client. In contrast to relationship models more strongly aligned with psychodynamic theories (Messer & Wolitzky, 2010), the tripartite model is commonly referred to as "pantheoretical" (e.g., Horvath et al., 2011), meaning that it applies across different theoretical frameworks in psychology. It has also been applied widely outside of counseling psychology (e.g., Fuertes et al., 2017; Freckmann et al., 2017; Morrison & Smith, 2013).

Bordin's tripartite model forms the basis of rating scales that have been widely utilized to measure clinician-client relationships in research and clinical settings (see Elvins & Green, 2008, for a review of clinician-client relationship scales). For the purposes of the present study, the most important of these measures is the Therapeutic Alliance Scales for Children (TASC-r; Creed & Kendall, 2005). The TASC-r contains a set of 12 statements that assess all aspects of the tripartite model; versions appropriate for children, parents, and clinicians have been developed and validated. TASC-r ratings predict both treatment participation and treatment progress in children receiving psychotherapy (Accurso et al., 2013).

The tripartite model and its derivative measures have been extended specifically to speech-language treatment for children. Two studies (Ebert, 2017; Freckmann et al., 2017) have adapted the TASC-r to measure the clinician-client relationship in children's speech-language treatment. Ebert (2017) administered the adapted rating scale to 22 triads of participants. Each triad contained

one child (aged 6-12 years) enrolled in speech-language treatment, the treating speech-language pathologist (SLP), and one parent. The study established internal consistency and test-retest reliability for all three versions (child, parent, and SLP) of the adapted clinician-client relationship scale. It also demonstrated the scales' predictive validity: both parent and SLP ratings of the relationship predicted measures of treatment progress obtained 4 months later. Freckmann and colleagues (2017) also obtained clinician-client relationship ratings from SLPs working with 5- to 12-year-old children, though ratings from parents and children were not collected in this study. The clinician-client relationship rating scale was found to have good face validity based on its correlation with an overall measure of rapport provided by the SLPs as well as qualitative perceptions of the scale from the SLPs. The study by Freckmann and colleagues (2017) also compared relationship ratings for SLPs conducting therapy via telepractice to those conducting therapy face-to-face. No between-group differences were found, and the authors concluded that telepractice and face-to-face service delivery lead to comparable clinician-client relationships.

Our review of literature thus far has demonstrated the strong evidence for the importance of clinician-client relationships and explained Bordin's (1979) model for defining them. Clinician-client relationship rating scales based on this model have been developed in counseling psychology and adapted to speech-language pathology, with demonstrated reliability and predictive validity in children's treatment. We turn now to the question of whether clinician-client relationships can be enhanced with training.

Training Programs for Clinician-Client Relationships. A number of small-scale investigations have suggested the promise of structured trainings for student clinicians or practicing clinicians to improve their relationships with clients. The majority of these studies have come in counseling psychology (see Smith-Hansen, 2016, for a review). For example, Hilsenroth and colleagues (2002) created a manualized program for developing skills related to the clinician-client relationship, such as developing an emotional connection and creating collaborative goals. Thirteen students enrolled in a clinical doctoral program in psychology adhered to the program with their clients, whereas an additional 15 students conducted their treatment as usual. Clients treated by both groups ($n = 68$) completed a clinician-client relationship rating scale. These ratings were generally high for clinicians in both groups but were significantly higher for those who completed the experimental relationship-building program. Clinicians also completed the relationship rating scale, again with significantly higher scores found in the group that completed the relationship-building program. Finally, the authors noted that improvements occurred in all three aspects of the relationship (i.e., goals, task, and bond) within the trained group (Hilsenroth et al., 2002).

More recently, Fuertes and colleagues (2019) tested the effects of a clinician-client relationship training based on Bordin's (1979) model with a group of 104 medical residents. The brief (1 hour) video training discussed trust and communication techniques (such as acknowledging emotions, demonstrating empathy, and paraphrasing a client's message), as well as establishing collaborative goals and treatment plans. Self-rated efficacy in relationship-building skills improved for a subset of the residents after completing the program. In addition, one patient from each resident's caseload was invited to participate. Patients were unaware of the group assignment of their resident and completed questionnaires measuring patient satisfaction and treatment adherence. Scores in both domains were higher for patients treated by a relationship-trained resident than for patients

treated by a resident without the training.

These results and other successes (e.g., Carpenter et al., 2008; Crits-Cristoph et al., 2006) provide preliminary evidence that clinicians can be trained to build better relationships with their clients and that the tripartite model is an effective platform for such training. It is not clear, however, to what extent these effects can generalize across fields. The training programs studied to date have been field-specific and not readily adaptable into another discipline. In addition, it is possible that cross-disciplinary differences in clients, treatment approaches, or clinician training could influence the overall effectiveness of any such training program. Therefore, it is important to extend the investigation of clinician-client relationship training across disciplines. To date, we are not aware of any studies seeking to train speech-language pathologists or student clinicians in speech-language pathology to build better relationships with their clients.

The Present Study. This study is a preliminary investigation of whether training can enhance clinician-client relationships in children's speech-language treatment. We designed a brief, online training for graduate student clinicians, based on the tripartite model as applied to speech-language pathology. The training was broken into three modules (one for each aspect of the relationship), and the modules were introduced one at a time to the participating student clinicians following a single-subject multiple baseline design. Effects of the training were measured by documenting clinician-client relationship ratings from the perspective of the student clinician, the supervisor, and the client over time.

Method

This study was approved by the Institutional Review Board at the University of Minnesota. Informed consent was obtained from all student, parent, and child participants.

Participants. The study included three types of participants: graduate student clinicians, clients, and a clinical supervisor. Client participants included both children receiving services and their parents.

Graduate Students. Five graduate student clinicians participated. All students were completing their first or second clinical assignment within a master's degree program in speech-language pathology. The clinical assignments took place in the university's internal speech-language-hearing clinic and spanned one semester (approximately 15 weeks). All students who were assigned to the collaborating clinical supervisor and had at least one child receiving speech-language treatment on their caseload for the semester were invited to participate. Two students consented to participate in the fall semester and three consented in the spring semester. The participating students completed the training program and rated their relationship with each child on their caseload weekly throughout the semester. Because of the COVID-19 pandemic, two students worked together to treat each client in the internal clinic. There were no instances in which both members of a student pair consented to participate in the study.

Clients: Parents and Children. Children assigned to the treatment caseloads of participating student clinicians were then identified. Their parents were invited to participate, as were the children themselves if they were at least 6 years of age. Two parents and one child consented to participate, which meant they completed ratings of the clinician-client relationship each week. The participating child was 6 years old, identified as male, and was receiving treatment to address speech sound errors. The participating child's mother also consented to participate. In addition, the grandmother and primary caretaker for a second child, who was 7 years of age and receiving services for speech sounds and social communication, participated in both the fall and spring semesters. The child did not wish to participate by completing the weekly rating scales.

Clinical Supervisor. The clinical supervisor for the participating student clinicians was a collaborator on the study. The supervisor completed ratings of the relationship between the student clinician and the child, for each student-clinician child pair, each week throughout the semester.

As a result of this process, weekly data were collected for a total of nine student clinician-child client pairs. For all pairs, the student clinician and the clinical supervisor provided independent ratings. For three pairs, the parent or caregiver perspective was also collected, and one pair included the child's perspective.

Training. The training program was designed as three independent modules. Each module corresponded to each of the components of the clinician-client relationship: (a) *goals*, defined as the alignment between clinician and client on common therapy goals; (b) *task*, defined as the collaboration between clinician and client on the daily activities within a therapy session; and (c) *bond*, defined as the emotional connection between a clinician and client (Bordin, 1979). Modules were administered via an online course management system, which assigned participating student clinicians modules according to their individualized schedule (see Design). Immediately prior to their first module, students also viewed an Introduction (see Supplemental Materials) that provided an overview of the tripartite model, the importance of the clinician-client relationship, and the structure of the training itself. Before the second and third modules, students viewed an abbreviated version of the same Introduction (see Supplemental Materials) to remind them of these same concepts. Immediately after completing each module, student clinicians were asked to submit a statement on two things they had learned from the module.

Each training component consisted primarily of a recorded PowerPoint presentation with narration. The combination of Introduction plus training module lasted approximately 15-20 minutes. The slides in the training modules included a description of the relationship component of interest, specific techniques for building that component, and opportunities to reflect on previous experiences and future plans. One short video example was embedded into each of the modules to illustrate techniques. During the reflection opportunities, students were asked to write ideas to a prompt (e.g., think about a client's current goals in terms of the degree of client input into the goals and how the client feels about them). Finally, each module concluded with a summary and a list of specific homework tasks for the upcoming week. Table 1 summarizes the content in each of the three training modules. In addition, the slides and associated script used in each of the training components are included in Supplemental Materials.

Table 1*Contents of the three training modules*

Topic	Module outline
Goals	<ul style="list-style-type: none"> • Definition of <i>goals</i> • Sources of goals: clinician-driven vs. collaborative • Reflection on a clinical experience deriving goals • How to elicit and incorporate client perspective to create collaborative goals • Reflection on barriers to incorporating client perspectives in goals • Navigating challenges: addressing differing perspectives; incorporating perspectives of clients who can't express them easily • Video example of collaborative goal setting • Collaborative goal-setting as an ongoing process • Summary & homework tasks
Tasks	<ul style="list-style-type: none"> • Definition of <i>tasks</i> • Reflection on a clinical case with effective task collaboration • Explicitly connecting tasks and goals • Providing choice and support to empower clients in completing tasks • Video example of clinician introducing tasks by making connections to goals • Monitoring client engagement with tasks through listening, observing, and talking • Reflection on monitoring & troubleshooting client engagement with tasks • Summary & homework tasks
Bond	<ul style="list-style-type: none"> • Definition of <i>bond</i> • Reflection on how human emotional bonds are generated and maintained • Active and reflective listening as techniques to build bond • Video example of active and reflective listening • Fun and enjoyment as techniques to build bond • Reflection on strengths and weaknesses in building bond within clinical experiences • Summary & homework tasks

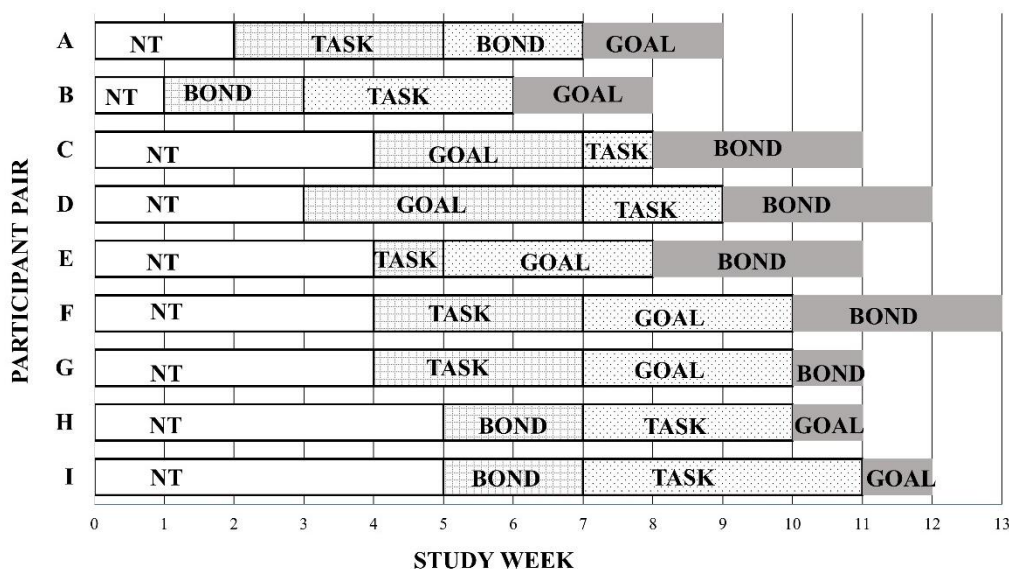
Design. The study followed a single-subject multiple baseline design across behaviors and participants, with each component of the clinician-client relationship acting as a “behavior.” During the no-treatment phase, each component of the clinician-client relationship was monitored (see Dependent Variables) but remained in baseline, meaning that no treatment was applied and no change in that component was anticipated. After this initial phase, the student completed their first module, and the related component of the relationship entered a treatment phase while the other components remained in baseline. For example, if a student completed the Task module first, the Task component would then enter the treatment phase (in which it was expected to improve), whereas Bond and Goals would remain in baseline (i.e., not treated and not expected to improve) until those modules were completed. When the student completed their next assigned module a few weeks later (e.g., Bond), then that component would enter the treatment phase and be expected to improve. The order of the modules was randomized across student clinicians. With three

modules per student and nine student clinician-child client pairs, there were 27 potential opportunities to demonstrate an effect of the training (i.e., an improvement from a baseline to an intervention phase) on the relationship. Figure 1 illustrates the order of modules across each clinician-client pair in the study.

In terms of timing, the study design called for the no-treatment phase to last 3-5 weeks, with 3 weeks in between each of the training modules, so that the study could be completed within the semester-long clinical assignment. However, several factors influenced the implementation of the planned timeline: (a) the number of weeks of clinical services offered during the fall semester was shortened due to the COVID-19 pandemic; (b) delays in recruiting participants meant that weekly ratings did not always begin during the first week of the semester; (c) and some student clinician participants were late to complete assigned modules. The first two factors shortened the number of weeks available to implement the study, whereas the third resulted in the extension of a baseline phase and the reduction in length of the subsequent treatment phase. In addition, there were isolated instances of clients cancelling a session, which resulted in a lost data point. Figure 1 illustrates the overall study design as it was implemented, including the length of each phase in weeks for each student clinician-child client pair.

Figure 1

Study design by participant pair



Note: Figure shows the actual length and order of the four study phases for each of the nine student clinician-child pairs. NT = initial no-treatment phase.

The students' clinical training and the clinical services provided to the children were unaltered with the exception of the training modules. The clinical supervisor presented feedback to students as usual and was not informed as to when the students completed the modules and which modules they had completed. Participating parents and children were also unaware of the students' module completion. Clinical services were conducted via telepractice throughout both semesters of the

study due to the COVID-19 pandemic. Children were treated once or twice per week for 60 minutes according to their usual schedule of treatment.

Dependent Variables. The student clinicians, clinical supervisor, participating parents, and participating child completed a clinician-client relationship rating scale for children's speech-language treatment every week throughout the study. This scale was validated in Ebert (2017). Three versions of the scale exist: one for a child receiving treatment, one for a parent or caregiver, and one for the clinician. Each version contains 12 statements. Six of these statements pertain to the bond, three to goals, and three to tasks. In this study, the weekly rating scales were administered using web-based survey software, REDCap (Harris et al., 2009). Using REDCap, each of the 12 statements were presented on a computer screen along with a visual analog scale ranging from "Not at all true" to "Very much true." Participants moved a slider button and placed it anywhere along the line. The visual analog scale was used instead of a Likert scale (as in Ebert, 2017) to increase precision of measurement and sensitivity to weekly change. In addition, the REDCap software replaced each reference to the student clinician in the parent and child versions of the scale with the name of the specific student working with the child. Similarly, the specific child's name was used in the student clinician scale (instead of generic references to "my client") and both the student clinician name and child name were used in the supervisor version.

For adult participants (i.e., student clinicians, supervisor, and parents), notices to complete the survey were sent via email and the participants completed them independently. For the participating child, weekly videoconference meetings were set up immediately following his speech-language treatment sessions. During these meetings, a research assistant helped the child complete the rating scale by reading and clarifying items, and by explaining the slider button.

After the ratings were completed, the REDCap software converted the position of each slider button along the scale into a number from 0 to 100. To create a weekly score for bond, the six items relating to bond were summed (with a possible maximum score of 600). Sums for goals and task were also created, with the maximum weekly score for each at 300.

Analyses. Consistent with contemporary guidelines for the interpretation of single-subject design data (e.g., Brossart et al., 2014), we utilized both visual and statistical analysis. Weekly scores for bond, task, and goals were plotted to enable consideration of level, trend, and variability (Byiers et al., 2012). We also calculated an effect size appropriate for single-subject studies, Tau-U (Parker et al., 2011). Tau-U integrates the percentage of nonoverlapping data between phases with the trend present in the intervention phase. When baseline data shows an undesirable trend (i.e., improvement without intervention), Tau-U calculations can be adjusted to control for the trend. We used a web-based Tau-U calculator (Vannest et al., 2016) and corrected for baseline trends when they were determined to be significant by the calculator. When calculating effect sizes, we combined the available scores for a relationship, meaning that the ratings from the student clinician, supervisor, and parent (if available) were aggregated. Scores were combined in order to consider overall trends from convergent perspectives.

Results

Figure 2 displays the weekly scores for bond, task, and goals from each available perspective (i.e., student clinician, supervisor, parent, and child) across the nine student clinician-child pairs. Within the figure, Panel A shows participant pairs A-C, Panel B shows participant pairs D-F, and Panel C shows participant pairs G-I. The vertical line on each graph shows when the student clinician completed the relevant training module.

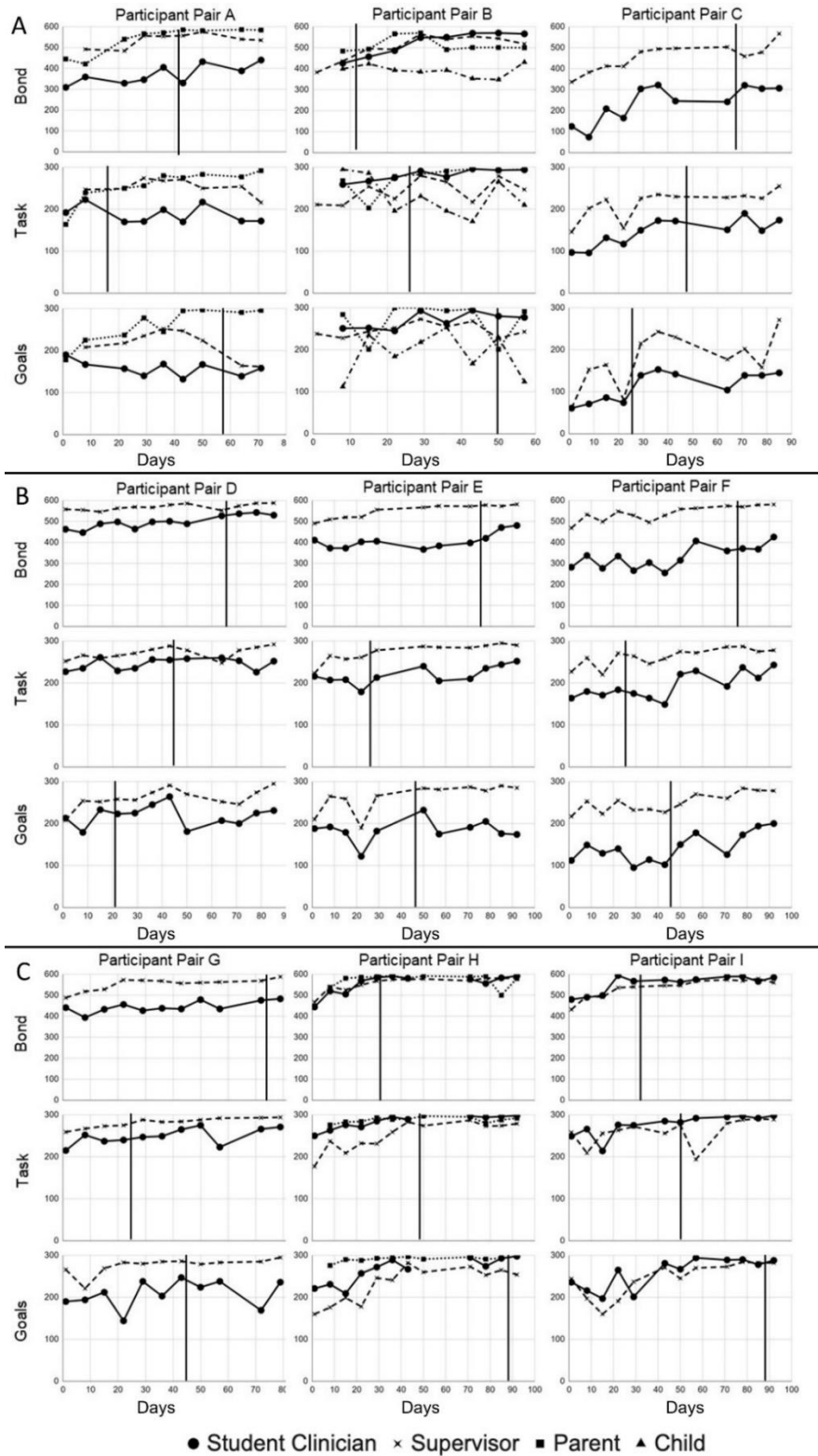
For our visual analysis, we considered each perspective separately and made a judgment as to whether (a) a visible positive trend was present in the baseline phase and (b) there were visible changes in level, trend, or variability from the baseline to the intervention phase. Because there were 9 student clinician-child pairs, 3 ‘behaviors’ (i.e., components of the clinician-client relationship), and 2-4 perspectives on each behavior (i.e., student clinician for all, supervisor for all, parent for 3, child for 1), a total of 66 graphs were available to judge. In four cases, only one data point was present in the baseline phase (due to the implementation conditions described in the Design section). No judgments were made in these cases. In the remaining 62 cases, 30 had no change from baseline to intervention. For example, for Participant Pair A: Goals, scores go down from baseline to intervention phases from the supervisor and student perspectives. For Participant Pair D: Task, there is substantial overlap between the baseline and intervention phases (again, from both student and supervisor perspectives), with minimal change in trend.

In the remaining 32 cases, there was a visible change from baseline to intervention. In each of these cases, scores in the intervention phase were slightly or substantially higher than in the baseline phase. In nine of these instances, there were also changes in trend, variability, or both from baseline to intervention, which further supported a judgement of intervention effect. However, it is important to note that 21 of the 32 instances of baseline-to-intervention improvement were judged to be compromised by the presence of a positive baseline trend. In other words, scores on the clinician-client relationship measure were improving prior to the introduction of the intervention module. For example, for Participant Pair E: Bond, Supervisor perspective, scores in the intervention phase are higher than in the baseline phase. However, there is also a visible trend of improvement over time during the baseline, making it difficult to determine whether the overall trend towards improvement was responsible for the higher scores during the intervention period rather than the intervention module itself.

Two additional observations were made during the visual analysis. First, the demonstration of a treatment effect appeared to be further complicated in some cases by high scores during the baseline phase. For example, Participant Pair D’s scores for Bond and Task fall very near the ceiling of the clinician-client relationship measure throughout the baseline phase. Demonstration of a positive change into the intervention period would not be possible in these cases. Secondly, the data from the single child participant (in Participant Pair B) is highly variable. This visual observation was corroborated by reports from the research assistants who assisted the child with the rating scale each week; the research assistants noted that the child appeared distracted by the slider button onscreen and made impulsive and variable judgments despite their support with the task.

Figure 2

Weekly measures of the clinician-client relationship across participant pairs



Tau-U Effect Sizes. Next, we calculated Tau-U effect sizes for each of baseline-to-intervention contrast. In addition to the 66 contrasts in the visual analysis (i.e., those generated by examining each perspective on each subcomponent of the clinician-client relationship), we created an additional set of contrasts for the overall effect of intervention. For this contrast, the no-treatment phase (i.e., the time before the student clinician completed the any intervention module) made up the baseline portion of the contrast; the intervention portion included all data points after the first intervention module, regardless of which subcomponent of the relationship it addressed. The total scores from the clinician-client relationship measure, rather than the subscale scores, were used for this contrast.

For each contrast, we first used the Tau-U calculator to determine whether the baseline trend was significant. Baseline correction was applied to all instances with a significant positive baseline trend. After generating a Tau-U effect for each contrast, we combined the effect sizes for a given participant pair and relationship subcomponent from all available perspectives (e.g., combining student clinician and supervisor perspectives into a single effect size for Participant Pair D: Bond) to examine trends that converged across different perspectives. Because of the concerns regarding the validity of the child data and the very small number of participant pairs with child data, we eliminated the child perspective from the combined Tau-U effects. We also eliminated any contrasts that included phases with only one data point, causing seven effect sizes to be eliminated.

The resulting combined Tau-U contrasts and their 90% confidence intervals are shown in Table 2. Of the 29 effect sizes that could be calculated, 19 reached statistical significance at the $p < .05$ level or more. One of these (Participant Pair A: Goals) was negative, indicating that the intervention module had a negative influence on the development of the Goals subcomponent of the clinician-client relationship. The remaining 18 were positive. The seven overall effect sizes all reached significance, suggesting that the introduction of any intervention module positively affected the development of the clinician-client relationship.

In summary, visual analysis supported a change from baseline to intervention in approximately half of the possible opportunities to demonstrate change (48.4%). However, in nearly two-thirds (65.6%) of these improvements, a positive trend was apparent in the baseline phase of the study. Tau-U effect sizes corrected for baseline trends and combined multiple perspectives on the same effect. A statistically significant, positive change from baseline to intervention was detected in 18 of 29 opportunities (62.1%). Finally, there was a statistically significant, positive effect of intervention overall in all 7 of the student-clinician-child participant pairs for which it could be calculated.

Discussion

This study considered whether a brief, online training focused on the tripartite model of the clinician-client relationship influences the development of relationships among student speech-language clinicians, children enrolled in treatment, and their parents. We used web-based modules to provide information on goals, task, and bond, and to promote application of the information to treatment sessions. The effects of the intervention modules were tracked weekly from the perspectives of the student clinician and clinical supervisor, as well as the parent and child when available, using subscales of a clinician-client relationship rating scale (Ebert, 2017).

Table 2*Combined Tau-U effect sizes by participant pair and relationship subcomponent.*

Pair	Bond		Task		Goals		Overall	
	Tau-U	90% CI	Tau-U	90% CI	Tau-U	90% CI	Tau-U	90% CI
A	0.57*	[0.17-0.96]	N/A		-0.74**	[-1-0.27]	N/A	
B	N/A		0.89***	[0.48-1.0]	-0.32	[-0.80-0.15]	N/A	
C	0.0	[-0.47-0.47]	0.09	[-0.35-0.53]	0.96***	[0.52-1.0]	1.0***	[0.56-1.0]
D	0.52	[0.05-0.98]	-0.01	[-0.42-0.40]	0.50	[0.03-0.97]	0.81**	[0.35-1.0]
E	0.42	[-0.06-0.89]	0.82**	[0.38-1.0]	0.57*	[0.14-0.99]	0.96***	[0.52-1.0]
F	0.47	[0.01-0.93]	0.60*	[0.18-1.0]	0.88***	[0.49-1.0]	0.56*	[0.14-0.97]
G	N/A		0.71**	[0.27-1.0]	0.0	[-0.44-0.44]	0.93***	[0.49-1.0]
H	0.42*	[0.08-0.77]	0.38	[0.03-0.73]	N/A		0.56**	[0.21-0.90]
I	0.51*	[0.11-0.92]	0.80**	[0.39-1.0]	N/A		0.94***	[0.53-1.0]

Note. N/A = baseline or intervention phase contained 1 data point and could not be used to generate an effect size.

* $p < .05$. ** $p < .01$. *** $p < .001$

Our visual analyses supported changes from baseline to intervention in just under half of the possible opportunities to demonstrate change, but baseline improvements were noted in the majority of these cases. From a clinical perspective, baseline improvements provide welcome evidence that graduate student clinicians tend to improve their relationships with their clients over time, likely due in part to the support provided in “business-as-usual” clinical supervision. From the perspective of a single-subject design research study, however, the baseline improvements interfere with the demonstration of an intervention effect. Visual analyses were further limited by potential ceiling effects and by short phases in some instances.

The visual analyses were supplemented by calculation of Tau-U effect sizes, which enabled us to correct for baseline trends and to consider convergence across perspectives. Overall, the effect sizes provided more robust support for the presence of intervention effects in the data. In particular, positive and significant effects of intervention overall (i.e., the introduction of the first intervention

module, regardless of topic, in comparison to the no-treatment phase) were found in all cases. The remaining significant Tau-U effect sizes were distributed across the three modules, with three for Bond, five for Tasks, and three for Goals. It is possible that Tasks, which relates to the daily activities of therapy, was the most concrete topic for students to grasp, and thus the easiest to change. However, more data would be needed to solidify this trend.

Overall, the results of this study offer preliminary support for the effectiveness of the intervention program, particularly when the program was viewed as a whole. Evidence for the specific effects of each individual module was somewhat weaker and more variable. We did not find consistent evidence that some intervention modules worked, and others did not, or that some student clinicians responded well and others did not. One possible explanation for the patterns in our results is that the aspects that were shared across the intervention modules had a more powerful effect than the individual strategies discussed within each module. That is, each module raised explicit awareness of clinician-client relationships and provided a clear and accessible framework for understanding these relationships (i.e., the tripartite model). These common factors may have had a consistent positive effect across modules. In contrast, the effect of any individual module may be more variable as it depends on the individual characteristics of the student clinician, the child, and their unique relationship, as well as the variable lived experiences of client and students from session to session. As this study is preliminary, further investigation would be needed to confirm the most effective components of the intervention.

Limitations. As a preliminary investigation, this study was limited in several respects. As implemented, several of the study phases contained fewer than 3 data points, which is generally considered the minimum length for single-subject design studies (see Byiers et al., 2012). We note, however, that the large number of potential replications in this study provide us with multiple cases in which phases were 3 or more data points in length. For example, participant pairs D and F had all 4 phases include at least 3 data points. For all participant pairs C through F, the no-treatment phase and overall intervention phase (i.e., the phase after the introduction of the first module) contained 3 or more points.

We also had limited participation from parents and children in this study. Despite our efforts to recruit the children and parents served by our participating student clinicians, only one child and three parent perspectives were collected. In addition, despite Ebert's evidence (2017) that children as young as 6 years old can complete the clinician-client relationship scale reliably, the 6-year-old child who participated in this study was noted to provide inconsistent answers (perhaps due to the sliding button on the web-based visual analog scale). The parents that did respond in this study tended to provide slightly higher ratings than the student clinicians or supervisor, suggesting they were relatively satisfied with the relationship. The parent sample is small, however, for drawing definitive conclusions. Ultimately, client perspectives are important when considering the impact of clinician-client relationship training and should be better captured in future work.

Implications and Future Directions. The intervention modules studied here require additional validation of their effectiveness before they could be considered an evidence-based intervention that is ready for widespread use. Nonetheless, the preliminary support for this intervention has valuable implications. We have demonstrated that clinician-client relationships can be actively enhanced for student clinicians. Given the evidence of their importance to speech-language

treatment (e.g., Ebert, 2017; Freckmann et al., 2017; Lawton et al., 2019), further study of the most effective ways to improve these relationships is warranted. Effective clinician-client relationship trainings may vary across client populations, and these differences should be investigated. The tripartite model provides a flexible framework that could be used as the basis for trainings across diverse populations.

We cannot yet offer a packaged training program for student clinicians to complete. Our preliminary results suggest there is value in reflecting on the goals, task, and bond elements of the relationship. We encourage both students and practicing clinicians to engage in such reflection. For example, clinicians might take a few moments after each session to think about how well they have aligned therapy goals with client priorities, or any barriers they can identify to the client's engagement in therapy tasks. Students and practicing clinicians might also consider tracking clinician-client relationships across time in their practice. Ebert's (2017) relationship rating scale is adapted to speech-language pathology and could be one option for tracking relationship ratings; alternatively, ultra-brief measures (such as the Session Rating Scale; Duncan et al., 2003) are available for counseling psychology and might be adapted to speech-language pathology. Internal data from relationship rating scales can then be used to identify problems in clinician-client relationships that may interfere with treatment and to determine whether efforts to enhance the relationship are successful. Supervisors, too, can integrate reflection on and discussion of clinician-client relationships into their supervision, potentially guided by feedback from clients.

To our knowledge, this study provides the first evidence that clinician-client relationship training can be effective in speech-language pathology. We consider it a promising start for further research and clinical endeavors.

Disclosures: Kerry Danahy Ebert has no financial relationships to disclose. She is the creator of the training program tested in this research study. Marilyn E. Fairchild has no financial or nonfinancial relationships to disclose.

References

- Accurso, E. C., Hawley, K. M., & Garland, A. F. (2013). Psychometric properties of the Therapeutic Alliance Scale for Caregivers and Parents. *Psychological Assessment, 25*(1), 244.
- Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research & Practice, 16*, 252-260.
- Brossart, D. F., Vannest, K. J., Davis, J. L., & Patience, M. A. (2014). Incorporating nonoverlap indices with visual analysis for quantifying intervention effectiveness in single-case experimental designs. *Neuropsychological Rehabilitation, 24*, 464-491. <https://doi.org/10.1080/09602011.2013.868361>
- Byiers, B. J., Reichle, J., & Symons, F. J. (2012). Single-subject experimental design for evidence-based practice. *American Journal of Speech-Language-Pathology, 21*, 397-414.
- Carpenter, J., Escudero, V. and Rivett, M. (2008), Training family therapy students in conceptual and observation skills relating to the therapeutic alliance: An evaluation. *Journal of Family Therapy, 30*, 411-424.
- Creed, T. A., & Kendall, P. C. (2005). Therapist alliance-building behavior within a cognitive-behavioral treatment for anxiety in youth. *Journal of Consulting and Clinical Psychology, 73*(3), 498.
- Crits-Christoph, P., Gibbons, M. B. C., Crits-Christoph, K., Narducci, J., Schamberger, M., & Gallop, R. (2006). Can therapists be trained to improve their alliances? A preliminary study of alliance-fostering psychotherapy. *Psychotherapy Research, 16*(03), 268-281.
- Duncan, B. L., Miller, S. D., Sparks, J. A., Claud, D. A., Reynolds, L. R., Brown, J., & Johnson, L. D. (2003). The Session Rating Scale: Preliminary psychometric properties of a “working” alliance measure. *Journal of Brief Therapy, 3*(1), 3-12.
- Ebert, K.D. (2017). Measuring clinician-client relationships in speech-language treatment for school-age children. *American Journal of Speech-Language Pathology, 26*, 146-152.
- Elvins, R., & Green, J. (2008). The conceptualization and measurement of therapeutic alliance: An empirical review. *Clinical Psychology Review, 28*(7), 1167-1187.
- Flükiger, C., Del Re, A. C., Wampold, B. E., Symonds, D., & Horvath, A. O. (2011). How central is the alliance in psychotherapy? A multilevel longitudinal meta-analysis. *Journal of Counseling Psychology, 59*, 10-17.
- Freckmann, A., Hines, M., & Lincoln, M. (2017). Clinicians’ perspectives of therapeutic alliance in face-to-face and telepractice speech–language pathology sessions. *International Journal of Speech-Language Pathology, 19*(3), 287-296.
- Fuertes, J. N., Anand, P., Toporovsky, A., Wolpoff, A., Reyes, M., Hungria, F. C., Fernandez, D. & Taborga, M. (2019). A training program in working alliance communication skills. *Medical Science Educator, 29*(4), 987-994.
- Fuertes, J. N., Toporovsky, A., Reyes, M., & Osborne, J. B. (2017). The physician-patient working alliance: Theory, research, and future possibilities. *Patient Education and Counseling, 100*(4), 610-615.
- Harris, P. A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., & Conde, J. G. (2009). Research electronic data capture (REDCap)—A metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of Biomedical Informatics, 42*(2), 377-381.

- Hilsenroth, M. J., Ackerman, S. J., Clemence, A. J., Strassle, C. G., & Handler, L. (2002). Effects of structured clinician training on patient and therapist perspectives of alliance early in psychotherapy. *Psychotherapy: Theory, Research, Practice, Training*, 39(4), 309-323.
- Horvath, A. O., Del Re, A. C., Flückiger, C., & Symonds, D. (2011). Alliance in individual psychotherapy. *Psychotherapy*, 48, 9-16.
- Lawton, M., Haddock, G., Conroy, P., Serrant, L., & Sage, K. (2018). Which aspects of the therapeutic alliance are valued by people with aphasia in speech and language therapy? A Q-methodology study. *Aphasiology*, 32, 122-123.
- Messer, S. B., & Wolitzky, D. L. (2010). A psychodynamic perspective on the therapeutic alliance. In J. C. Muran & J.P. Barber (Eds.), *The therapeutic alliance: An evidence based guide to practice* (pp., 97-122). Guilford Press.
- Morrison, T. L., & Smith, J. D. (2013). Working alliance development in occupational therapy: A cross-case analysis. *Australian Occupational Therapy Journal*, 60(5), 326-333.
- Parker, R. I., Vannest, K. J., Davis, J. L., & Sauber, S. B. (2011). Combining nonoverlap and trend for single-case research: Tau-U. *Behavior Therapy*, 42(2), 284-299.
- Rakel, D., Barrett, B., Zhang, Z., Hoeft, T., Chewning, B., Marchand, L., & Scheder, J. (2011). Perception of empathy in the therapeutic encounter: effects on the common cold. *Patient Education and Counseling*, 85(3), 390-397.
- Smith-Hansen, L. (2016). The therapeutic alliance: From correlational studies to training models. *Journal of Psychotherapy Integration*, 26(3), 217-229.
- Vannest, K.J., Parker, R.I., Gonen, O., & Adiguzel, T. (2016). *Single Case Research: Web-based calculators for SCR analysis* (Version 2.0) [Web-based application]. <http://singlecaseresearch.org/calculators/tau-u>