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International distance coaching of therapists to improve verbal behavior by children with autism

Ana Barkaia
James Madison University

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International Distance Coaching of Therapists to Improve
Verbal Behavior by Children with Autism

Ana Barkaia

A thesis submitted to the Graduate Faculty of

JAMES MADISON UNIVERSITY

In

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Dedication

I dedicate my thesis work to my teachers and friends Dr. Barry Parsonson, Dr. JaneMary Castelfranc-Allen and Dr. Trevor Stokes who put a huge effort to giving me the wonderful chance to complete my master's degree in psychological sciences in United States and who opened the door for me to the field of Applied Behavior Analysis. Who gave me lots of opportunities to develop myself as a behavior therapist and a researcher. I want to say special thanks to them for the great support, encouragement and huge inspiration they have been giving all these time to work with children with autism, and for giving great examples of how to be a good person.

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Abstract

This study examined the effects of distance coaching on the mastery of therapists' skills and the development of verbal behavior of children with autism. Three therapists and three children receiving early intervention services in the NGO Children of Georgia in the developing country of Georgia-Sakartvelo in Eastern Europe participated in this research. The therapists received distance coaching about the implementation of ABA therapy from Virginia. The intervention was recorded and coded by observers in Georgia-Sakartvelo and in Harrisonburg/Virginia, USA. The effects of distance coaching was investigated within a multiple baseline across participant.

Introduction

Children with Autism reveal persistent deficits in social communication and social interaction skills across multiple contexts (APA, 2013). One of the most difficult to treat characteristics of children with autism is their severe verbal skill deficit. Empirical research shows that early, intensive, structured intervention, based on the principles of applied behavior analysis, is effective in remediating these deficits. Most notably, Lovaas and his colleagues (1973, 1987, 1993) demonstrated that if children receive intensive Applied Behavior Analysis (ABA) intervention by trained therapists, they will achieve significant gains in IQ, verbal behavior and social functioning.

In their study, Lovaas, Koegel, Simons, & Long (1973) implemented behavior therapy for children with autism. They demonstrated that during the behavioral treatment children gained positive improvements in behaviors. Inappropriate behaviors decreased and appropriate behaviors increased with all children during the study, significant gain in IQ was achieved and some children developed spontaneous interaction and spontaneous speech. To demonstrate that treatment gains can be maintained after treatment is stopped and generalized across situations and time, follow-up studies were conducted by Lovaas (1987, 1993). In his study “Behavioral Treatment and Normal Educational and Intellectual Functioning in Young Autistic Children” Lovaas (1987) implemented behavior therapy for children with autism. Average age of the children was 34 months and they received intensive, 40 hours treatment per week for two or more years. Their performance was compared to the performance of the children from the control group who did not receive intensive behavior therapy. Study showed that the best outcomes were achieved by the children from the experimental group, who had been involved in

the intensive behavioral treatment from the early age. Follow-up assessment of these children by McEachin, Smith & Lovaas (1993) when they were at an average age of 11.5 demonstrated that they had maintained their gains over control group. The children who showed best outcomes from 1987 study by Lovaas, were evaluated in an average age of 24 years. Results showed that they had maintained their gains in IQ and neuro-psychological functioning, they had established close relationships and considerable independence. To summarize, behavior therapy is an evidence-based treatment for children with autism and the best results can be achieved when children receive intensive, 40 hours behavioral treatment per week, from early childhood.

Verbal Behavior Development

Speech deficit is the most difficult to treat in children with autism. Applied behavior analytic language interventions, which produce positive gains for children with autism are often influenced by Skinner's Analysis of Language (LeBlanc, Esch, Sidener&Firth, 2006). Skinner in his "Verbal Behavior"(1957) described language as a verbal behavior that is learned, reinforced and maintained by the same types of environmental variables that control non-language behaviors and, all basic principles of applied behavior analysis that apply to non-verbal behaviors apply to verbal behaviors too. For example, talking is learned in the same way as walking or running. According to Skinner (1957), verbal behavior is the distinction between the behavior of speaker and the behavior of the listener. The primary concern of Skinner's verbal behavior is the behavior of the speaker, who gain access to reinforcement and control their environment through the behavior of the listener. For example, a speaker verbal response, "open the door," can be reinforced by an open door mediated through a listener behavior (Cooper, Heron, Heward, 2007). The speaker behavior consists of several verbal operants that are the core of functional analysis of verbal behavior (Skinner, 1957). The elementary verbal operants

described by Skinner (1957) are: Mand-asking reinforcement that you want; Tact- naming or identifying objects; Intraverbal-answering questions; Echoic-repeating what you hear; Textual-reading written words; and Transcription - writing and spelling words spoken to you (Cooper, Heron, Heward, 2007).

Skinner's theory of verbal behavior (1957) became a basis for the development of an important behavioral intervention programs for language development of children with Autism referred as Applied Verbal Behavior (LeBlanc et al., 2006). Applied Verbal Behavior (AVB) is focused on the acquisition of Skinnerian verbal operants and guides assessment effort (LeBlanc et al.,2006).

Drash, High and Tudor (1999) in their study "Using Mand Training to Establish an Echoic Repertoire in Young Children with Autism" showed that verbal operants such as mand, tact and echoic can be taught by using ABA techniques. They examined three non-verbal children with autism and demonstrated that teaching mands can be the first step to produce tact and echoic operants in children with autism. As a result of the intervention all three children with autism acquired mand and echoic repertoires and two of them acquired a tact repertoire.

Sundberg (2008) applied Skinner's theory in the development of the Verbal Behavior Milestones Assessment and Placement Program (VB-MAPP) which is successfully used to assess children's language skills and helps to implement treatment program for language development. The VB-MAPP is designed in such way that it identifies the existing language operants for a child with autism and suggests intervention programs. To summarize, the best outcomes in language development are achieved when the intervention is based on acquisition of basic verbal operants.

Coaching

Research suggests that the intervention with children with autism is successfully implemented by the therapists who have been taught to deliver ABA techniques. Training and coaching of people working with children with autism to improve their communication skills produces significant changes in children's behavior. Parsonson, Baer & Baer (1974), conducted a study where the effectiveness of feedback procedure was examined. They observed teachers' interaction with children and provided feedback after teachers gave attention to children who revealed appropriate behaviors. Teachers who participated in this study demonstrated increases in their attention toward children's positive behavior and maintained these effects after feedback procedure was concluded. This study is a well-controlled experimental demonstration of using feedback procedure as a teaching method.

A similar type of feedback procedure, which has been successfully used in educational settings and in ABA practice, is coaching. Bethune & Wood (2013), analyzed the effects of coaching on special education teachers' implementation of function-based interventions with children with disabilities. They trained teachers to develop intervention plans for children and then provided coaching after they watched teachers' intervention with children. Coaching consisted of feedback and suggestions. After teachers had been coached, their performance of implementing intervention plans improved and their fidelity scores increased. Teachers also generalized the learned strategies to other situations with the target children.

Simons, White, Longerbeam & Stokes (2014) examined the effectiveness of training and coaching procedures in teaching ABA strategies to Speech and Language Pathology (SLP) graduate students, working with children with autism in a clinic setting. A wireless audio system, sometimes referred to as bug-in-the-ear, that includes a transmitting microphone and a separate

receiving headpiece was used for coaching by an experienced clinicians. The headpiece was worn by the SLP student receiving coaching and so only this person could hear coach's comments. The study clearly demonstrated that after SLP students had been coached they were able to incorporate ABA techniques in their therapy and maintained the use of these techniques after coaching was discontinued.

Another type of coaching that is widely used in practice is side-by-side coaching. The coach stays in close physical proximity to the therapist/parent/teacher when she/he is implementing intervention and provides coaching comments promptly. Training in relevant therapy skills seems to be critical for parents of children with developmental disabilities. The effectiveness of training parents of children with developmental delays including autism is successfully demonstrated in the study "Planned Activities Training for Mothers of Children with Developmental Disabilities: Community generalization and Follow-up" by Huynen, Lutzker, Bigelow, Touchette and Campbell (1996). The results of this study showed that teaching parents to appropriately use Planned Activities Training procedures, will improve children's appropriate behavior. Four parents received side-by-side training at home setting during play activities with their children in this study and they were given handouts, instructions or feedback on managing child behavior. Three of four mothers demonstrated improvements in use of Planned Activity Training procedures and children showed significant improvements in appropriate behavior. This study is one more demonstration of effectiveness of training and coaching of people who work with children with developmental disabilities.

Laski, Charlop and Schreibman (1988) in their study, "Training Parents To Use The Natural Language Paradigm To Increase Their Autistic Children's Speech" demonstrated that parent coaching to use natural language paradigm procedures increases generalization of speech

by children with Autism. At the beginning of study, an experimenter was in the room where parent was implementing intervention with child and was providing side-by-side training. After two or three sessions, the experimenter observed the parent's interaction with the child through a one way mirror and provided coaching comments by using an intercom. After parents were coached in the clinic setting they were asked to implement the same interventions at home without coaching. Researchers evaluated post treatment results and observed significant gains in children's and parents' target behaviors. This study demonstrated that parents can be trained effectively and coached to develop their children's verbal behavior.

A third type of coaching, now more widely used in practice, is provided from a distance using communications technology. Though this type of coaching is now developing there are a few studies which have documented the effective use of communications technology for coaching. In their study "Psychotherapy Using Distance Technology: A comparison of Face-to-Face, Video, and Audio Treatment" Day and Schneider (2002) examined effectiveness of psychotherapy when it was conducted by communications technology (video and audio) as compared to face-to-face intervention. They found that clients' participation in therapy sessions was higher when therapy was delivered via communications technology (video and audio) where the clients were not face-to-face with their therapists. However, the results of this study indicated that the therapeutic outcome of video and audio treatment has similar effects as face-to face intervention.

The effective use of communications technology has been documented by Vismara, Young, Stahmer, Griffith and Rogers (2009) in their study, "Dissemination of Evidence-Based Practice: Can We Train Therapists From a Distance?" Authors of this study examined whether distance learning was as effective as face-to-face learning for therapists working to implement

the Early Start Denver Model (ESDM). Participants of this study were 10 therapists working with children with autism. In the first phase of study they were taught to use ESDM during one-on-one treatment with ASD children. In the second phase they were taught to coach parents. Five therapists in this study participated only via communications technology and other five participated in the same activities in live, face-to-face learning. Results revealed that distance learning in both phases (working with children and parent coaching) was as effective as face-to-face learning and there was no difference in therapist performance on using ESDM for those who were taught via distance learning and those who were taught in live.

In summary, there have been three types of coaching: side-by-side coaching, when coach is close physical proximity to therapist; Bug-in-the-ear coaching, when coaching comments are provided by headpiece device as intervention is observed from different room through one way mirror; and distance coaching, which is provided from distance place by communications technology. All coaching methods have been found to be effective.

Communications technology includes telephone, chatrooms, text, fax, e-mail, interactive videoconferencing including publicly accessible Voice over Internet Protocol Systems (Skype, VSee, Viber). Communication can be written images, sound or data in real time or delayed transmission (Parsonson & Stokes, 2013). Because of application of communications technology has some advantages, interest in distance coaching has been expanded. The main advantage of distance coaching is that it is less expensive than face-to-face intervention, reserves time associated with traveling, serves a wider client community without additional travel and office rental expenses, can be conducted in any setting including home, clinic, hospital and school, and affords coaching in geographically distant areas such as other countries and rural/remote locations (Parsonson & Stokes (2013).

There are, however, risks and challenges associated with using technologies, and a major concern is confidentiality (Parsonson & Stokes, 2013). Electronic communications can be a subject of interception or hacking or technological devices used during the distance coaching can be stolen, also, information transfer from one place to another by internet can be monitored by service providers. People using communication technologies (both clients and therapists) can experience confidentiality breaches as professional communication may be heard or seen by others in clinics, homes or other working places. To minimize these risks, there are some suggestions provided: Installation of anti-spyware, anti-malware and high quality anti-virus software on computers will protect computers and restrict an unauthorized access, additional protection can be achieved by adopting coded personal identification information. Encryption for data transfer is suggested as well, though communication providers do not guarantee freedom from hacking or employee monitoring. Clients should be informed about these risks and all these issues should be addressed in informed consent forms (Parsonson & Stokes, 2013).

Brearily, Cannady, Barkaia and Stokes (2013) recommended to use the following systems in order to provide distance coaching. For the coach: a computer or mobile device with internet connection and videoconferencing software installed, the Vsee or Skype application, that are simple to set up, work on a PC, Mac, as well as tablet/mobile devices (Android and iOS) and can be used for free. For therapist/teacher/parent, a computer or mobile device with internet connection and high quality webcam, external microphone and In-ear Bluetooth earpiece.

Purpose

Applied behavior analysis is the just developing field of study in the country of Georgia-Sakartvelo in eastern Europe (Barkaia, Chkhaidze & Stokes, 2014). Currently only 600 children with autism receive ABA treatment in the country. All centers for children with autism are

located in Tbilisi/capital of Georgia. There is a strong need to deliver high quality ABA services in other regions of Georgia. One way of expanding services is through communications technology, so therapists in Tbilisi will be able to train and supervise therapists in regions from Tbilisi (Barkaia & Stokes 2014).

The current study is the pilot study that was bespoken by the non-governmental organization “Children of Georgia”. Organization was founded by New Zealand and Georgian psychologist in 2006 and from that moment is oriented on the satisfaction of the individual needs of the children and adolescents in order to provide their psychological well being and personal development (Barkaia & Stokes 2014).

The study aims to demonstrate that communications technology can be effectively used for coaching, and that distance coaching is an effective practice for enhancing mastery of therapeutic skills, as well as having indirect effects on the development of verbal behavior skills of children with autism. We expect therapists to show a higher frequency of using therapeutic skills and we expect that the frequency of children’s verbal behavior repertoire will be enhanced.

Method

Participants

Participants of this study were three therapists working with children with autism and three children diagnosed with Autism Spectrum Disorder. The three therapists worked at the non-governmental agency (NGO) called “Children of Georgia” in Tbilisi, Georgia-Sakartvelo in Eastern Europe. The three child participants were clients served by the NGO in the homes of the children, as part of the early intervention services provided by the NGO.

Therapists. Anna was a 32-years-old female who held a bachelor’s degree in pedagogical psychology and had one year’s experience working with children with autism. Tatia was a 24-years-old female who held a master’s degree in child and adolescent psychological assessment and had one year’s experience of working with children with autism. Mari was a 25-years-old female. She held a bachelor’s degree in applied psychology and had two years’ experience of working with children with autism in an autism clinic. Mari and Tatia had completed an ABA class at the undergraduate university level and Anna had been trained in ABA techniques by consulting behavior analysts post-graduation. All of the therapists were familiar with ABA concepts and techniques although they had never been coached in ABA techniques in practice. Mari had used some Applied Verbal Behavior (AVB) techniques but Anna and Tatia were not familiar with AVB approach.

Children. Andrea was a four-year-old male, diagnosed with Autism Spectrum Disorder. His verbal repertoire consisted of some sounds and syllables, which were spontaneously pronounced by him and did not have any meaning. He was not able to mand objects or items, was not able to imitate the sounds he already had in his repertoire, but could point on objects. He

had been involved in ABA therapy over one year. Sandro was a six-year-old male, diagnosed with Autism Spectrum Disorder. His verbal repertoire consisted of some different sounds, syllables and one word, which was “erti” (one). He was not able to mand, to imitate sounds, but he could repeat “erti” if he was asked to repeat and could name number one-erti when he saw it in the book. He had been involved in ABA therapy over two years. Sunny was a six-year-old male, diagnosed with Autism Spectrum Disorder. His verbal repertoire consisted of some syllables and some sounds. He was able to imitate sounds and syllables but he could not imitate words, he also was able to approximate the name a few objects, to point on objects, but he could not mand for items and objects. He had been involved in ABA therapy over four years.

All participants or their legal representatives were provided informed written consent for participation in this research, consistent with the James Madison University Institutional Review Board approved protocol. Consent forms were written in the Georgian language and the consent process completed by Georgian speaking therapists. (A copy of the consent form is provided in Appendix A.)

Setting

The intervention was conducted at the child participant’s home. Andrea’s sessions were conducted in his bedroom. With Sandro and Sunny sessions were conducted in their living rooms. Andrea’s bedroom was four meters wide and four meters long. There was a bed on the left side of the bedroom and a table and a chair in the right corner of this bedroom. Sandro’s living room was six meters wide and four meters long. There was a couch, a table and chairs in the middle of the room. There was a computer table with a computer on it in the corner of the room. Sunny’s living room was nine meters wide and five meters long. There was a couch in the middle of the room, a TV on the left side of the wall of the room and book shelves on the right

side wall, a large table and chairs in the right corner of the room and a computer table with a computer behind this table. For all three children therapy was implemented at the table, where only the therapist and the child were sitting. There were some toys and intervention materials provided on the table. These included papers, pencils, books, boxes, blocks, bubbles, tenpins, cards with numbers and different objects on it, toy animals with sounds and playdoh. For Andria intervention consisted of non-structured activities and he was moving in the room during the therapy. Sandro and Sunny were involved in structured activities and they spent their therapy time only at the table without moving in the room. Andria and Sunny were alone in the room together with their therapists, while there were some other family members doing their work in the room when Sandro was involved in the therapy session.

The rooms were equipped with communication technologies including video cameras and laptop computers. Twelve minutes of intervention were videotaped and both visual and audio records were made of each session. Video cameras were provided by the NGO "Children of Georgia" and all video records were stored in the "Children of Georgia" office computers. Video records were uploaded to password protected Drop Box for the observer in Harrisonburg, Virginia to score target behaviors.

Laptops were located in front of the table where the intervention was implemented, at 1-3 meters distance on another table or a chair. This allowed the coach to be able to observe an intervention. The location of the laptop was changed by the therapist if the child moved from the intervention area, went to another part of the room and stayed there more than two minutes.

Dependent Variables

Therapist behaviors observed and coded were as follows:

Positive consequence was coded when the therapist provided labeled or unlabeled praise, or positive touch following the child's target behaviors (Eyberg, Nelson, Duke & Boggs, 2009).

Labeled praise specifically addressed the child's behavior, for example, "I like the way you said apple." Unlabeled praise was a non-specific evaluation of the child's behavior, for example if the therapist said "good job" after the child performed a target behavior it was considered as unlabeled praise.

Direct command to verbalize was coded when the therapist made a declarative statement that contained an order or direction for a particular vocal behavior to be performed, for example "say apple" when it did not include questions (Eyberg, Nelson, Duke & Boggs (2009).

Repetition of command was coded if the child did not respond by repeating any sound requested, the therapist waited for five seconds, then repeated the same command. If then, child did not respond within five seconds, the therapist provided a verbal prompt. For example, Therapist: "Say Apple!" The child did not respond with a verbalization. The therapist waited for five seconds and said, "say apple!" The child did not respond with a verbalization. The therapist again waited for five seconds and said "apple."

Error correction was coded when the child gave an incorrect verbal response to a therapist's command and the therapist corrected it and repeated the same command. For example, Therapist: "Say toy." Child: "buh," Therapist: "a toy, say toy."

Reflection was coded when the therapist repeated a word or syllable pronounced by child (Eyberg, Nelson, Duke & Boggs (2009). For example: Child: “buhbuh.” Therapist: “buhbuh.” Child: “drink.” Therapist: “drink.”

Children Behaviors observed and coded (Cooper, Heron, Heward, 2007; Sunberg, 2008) were as follows:

Mand was when a child independently, without any prompt asked verbally for an item, an object or an action. E.g., if a child wanted a ball, he should have said, “ball” or an approximation of the word, (e.g., “bl”) to be considered as a mand.

Tact was the naming of an object, for example if the child was introduced to a book or picture of the book and was asked “what is this?” He should have said “a book” or an approximation of “book” to be considered as a tact.

Echoic was repeating what the therapist said; it could be a word or any sound. For example if therapist said “doll” the child should have said “doll” or an approximation such as “do.”

Vocalization was a consonant sound or syllables without any meaning, which was spontaneously pronounced by a child in the situation when he was not manding, tacting or repeating what therapist said. For example, “bababa,” “hhhhh.”

Verbalization was a word or the approximation of a word, spontaneously said by a child in the situation when he was not manding, tacting or repeating what therapist said. For example, “Apple”.

Independent Variables

The following comments were observed for the coach (Barkaia & Stokes, 2014):

Labeled praise. The coach provided a positive evaluation of the therapist, specifically addressing the therapist's behavior such as a verbalization or action: E.g., "Nice labeled praise"; "Great reflection"; "That was a good direct command."

Unlabeled praise. The coach provided a positive evaluation of the therapist's or a nonspecific behavior of the therapists. E.g., "That was great!" "Good"; "Excellent"; "Nice."

Descriptive label. The coach described therapist's behavior in a non-evaluative way. E.g., "You are waiting"; "Reflection."

Direct command. The coach provided a declarative statement that contained an order or direction for a particular vocal or motor behavior to be performed. E.g., "repeat the command," "use labeled praise."

Higher order. The coach provided an evaluative statement commenting upon management issues that were general evaluations of therapeutic style and simple interaction consequences. E.g., "This increase in the child's verbal responses is a result of your using error corrections"; "nice interaction"; "good prompt."

Data Collection

Video records of therapy sessions were used for data collection. These were observed by two people. One observer was in Harrisonburg, Virginia and the other observer was in Tbilisi, Georgia-Sakartvelo. The observer in Harrisonburg was the primary investigator of this study and the observer in Tbilisi was a psychologist working at "Children of Georgia". Before starting observation they had training together on target behavior definitions, via Skype, over the

internet. A ten-minute partial interval recording procedure was used to score target behaviors. The first occurrence of children's and therapists' target behaviors in ten-second intervals was coded. Coaching comments were tallied by the coach from video recordings of the coaching process. The coach watched and scored coaching behaviors after the therapy session had concluded. No interobserver agreement was scored for coaching comments. Copies of the data collection sheets are represented in Appendices B, C and D.

Interobserver agreement (IOA) was scored for 33% of the total baseline and distance coaching sessions of the study for the children's and the therapists' behaviors. IOA per session was calculated by the total number of intervals of agreement on the scoring of each behavior, divided by the total number of intervals, multiplied by 100, for each behavior. Overall IOA in baseline was 97%, and for each behavior was at least 85% agreement: Mand-100%, Tact-100%, Echoic-97 %, Vocalization-85%, Verbalization-95%, Positive Consequences-99%, Direct Command-95%, Repetition of Command-99%, Error Correction-100%, Reflection-98%. Overall IOA for distance coaching sessions was 92% and for each behavior there was at least 84% agreement: Mand-96%, Tact-93%, Echoic-92%, Vocalization-85%, Verbalization-97%, Positive Consequences-87%, Direct Command-84%, Repetition of command-92%, Error Correction-99%, Reflection-93%. IOA represented adequate level of agreement.

Experimental Design

Professionals in applied behavior analysis often use single-case designs to evaluate the effectiveness of treatment (Cooper, Heron, & Heward 2007). One type of single-case design is the multiple baseline design, which enables researchers to analyze the effects of an independent variable across multiple behaviors, settings and/or participants (Cooper, Heron, & Heward, 2007). A multiple-baseline design across participants was selected for this study, where the same

behaviors of participants were compared across time in the same settings. In this design, data collection of participants' behaviors started at the same time. After stable levels of responding had been achieved in the participants' behavior under baseline conditions, the independent variable (distance coaching) was applied to one participant while others remained in the baseline phase. The criterion to identify the stability of the data path was the last three data points converged on the low level of vertical axis or last three data points with decreasing trend (Cooper, Heron, & Heward, 2007; Parsonson, 2003). The intervention was introduced sequentially to the other two participants after successful intervention with the first (and second) participant. This design allowed comparison of the intervention effects with a prediction of the participant's behavior if they stayed on the same level in baseline condition if the independent variable was not applied. It also showed that changes in behavior after introducing an independent variable in multiple participants, demonstrating that these changes could be interpreted as occurring as a result of treatment.

Instrumentation

Sessions were video-taped in the participant's homes in Tbilisi, Georgia-Sakartvelo. The coach observed the intervention through Skype, although the incoming sound from Skype was muted. Additionally, the coach made a technology connection using telephone calls via the Viber application that enabled transmission of sound from Georgia-Sakartvelo. Headphones were attached to the phones and coaching comments were heard only by therapists and not by the children. A coach wore headphones as well, she was alone in the coaching room and the sound incoming from Georgia-Sakartvelo was heard only by her. After coaching was concluded, 12 minutes of the intervention was videotaped. Each video-taped session was uploaded into password protected Dropbox. After the video record was watched and coded by the two

observers, one in Tbilisi, Georgia and one in Harrisonburg, Virginia it was deleted from the Dropbox. The original video recordings were saved at “Children of Georgia’s office computer and the access of these video tapes was allowed only for observer in Georgia and therapists who participated in this study if they wanted to watch their own tape. These video recordings were saved as needed to review for interobserver agreement.

Procedures

The participants were in Tbilisi, Georgia-Sakartvelo, while the coach was in Harrisonburg, Virginia.

Baseline was started at the same time for the three therapists in this concurrent multiple baseline design. During baseline, therapists were instructed to implement interventions for language development of the child. Prior to the beginning of baseline, language development had not been one of the behaviors targeted for intervention. Anna was less experienced in this study and was not familiar with language development techniques and the coach’s instruction did not affect her intervention procedures. She continued to work on her previous goals, which were behavior management and academic skills development, while the other two therapists became more oriented to the children’s language development. The coach watched the session for 15 minutes and then provided general evaluative comments about the intervention. No coaching occurred specifically related to the development of verbalization and language. If it was needed during baseline, the coach provided recommendations regarding general behavior management and session activities.

Anna was not familiar with verbal behavior operants, as this was a new concept for her and she needed extra time to fully demonstrate a discrimination between target behaviors. After three baseline therapy sessions, distance training through Skype was conducted for her, which

lasted for two hours. First, verbal operants were explained to her and then target behaviors were introduced and discussed. After target behaviors were discussed and explained, practice exercises were provided for her where the second observer participated too. During the training Anna learned activities that would be helpful for child's language development.

After one session of training, coaching was started on the following intervention session, whereas two other therapists remained on baseline level. Coaching with Anna lasted for 15 minutes and ended with brief feedback which included an evaluation of the session. After coaching concluded, 10 minutes of the therapy session was video-taped and later watched by observers, who then coded the target behaviors of the therapist and the child.

The second therapist with whom the intervention was introduced next was Tatia. She was observed over nine sessions in baseline. A coach watched her interaction with the child through Skype over 15 minutes for each session and then provided general evaluative statements. During the baseline a coach gave her recommendations to change activities which seemed less preferable for child into more preferable ones, so Tatia changed her intervention activities in baseline. After steady state data were achieved with Tatia distance coaching was conducted for her too. Training with her lasted for one hour, she was familiar with verbal operants and did not need extra time or the second observer for practice exercises. Training with Tatia was stopped when she fully demonstrated a discrimination between target behaviors. The coaching with her started on the following therapy session. Coaching comments were provided during 15 minutes and the session was concluded with brief feedback and a general evaluation of the session. After coaching, 10 minutes of the therapy session was video-taped and later coded by the observers.

The third therapist, Mari was observed over 14 sessions in baseline. A coach watched her during 15 minutes for each session and then provided general evaluation comments about the

session. After steady state data were achieved distance coaching was introduced for her too, which lasted for one hour. As with the other participants, all target behaviors were explained and discussed with Mari. She was more experienced in Applied Behavior Analysis principles, she knew verbal operants and did not need the second observer and practice exercises to learn the target behaviors. Training with Mari concluded when she fully demonstrated a discrimination between target behaviors. Coaching comments for her were provided during 15 minutes as it was provided with other therapists. Similarly, coaching concluded with brief feedback and a general evaluation of the session. After coaching was finished 10 minutes of the therapy session was videotaped and later coded by the observers.

Coaching was responsive to the local time in Tbilisi, Georgia-Sakartvelo. There was 9 hours difference. Therefore, coaching sessions were conducted at 10 a.m. and 5 p.m. times In Tbilisi. That time was 1 a.m. and 7 a.m. in United States.

The coach was a graduate student in applied behavior analysis at James Madison University. She had a master's degree in school psychology, had six years' experience as a therapist of children with autism, and two years' experience with coaching using communication technologies. She was fluent in English and Georgian languages. The coach was supervised by a licensed clinical psychologist and licensed behavior analyst who was a faculty member at James Madison University. The supervisor had 30 years' experience as a licensed psychologist and as a coach of parents and teachers. As a precaution in case a procedure caused any concern or if there were issues to attend to in the overall clinical treatment program for the children, a psychologist was available in Tbilisi to provide back-up support for the families and therapists if needed. This psychologist had a master's degree in neuropsychology and had eight years' experience in human service programs. She was the member of the "Children of Georgia" NGO

staff who had responsibilities as the agency supervisor of the therapists in this study. However, the NGO supervisor did not supervise direct therapy activities but maintained contact with the program to ensure it is proceeding smoothly.

Results

The goal for this study was to demonstrate that distance coaching would increase the frequency of therapeutic skills and would have a positive influence on children's verbal behaviors. To assess the effect of distance coaching the data were graphed and visual analysis of therapists' and children's performance was conducted to determine whether changes in intervention condition occurred.

Therapist Behavior

The following five target behaviors were observed for all three therapists during baseline and intervention: Positive consequence, direct command, repetition of command, error correction and reflection. The therapist behaviors were grouped into two classes of behavior: positive consequences and reflection were combined under positive consequences as a class of behaviors, while direct command, repetition of command and error correction were combined under correct commands as a class of behaviors. Practice suggests that most necessary skills for therapists working with children with autism are to give a child correct commands and to follow through with positive consequences. Figure 1 shows the frequency of classes of positive consequences and correct commands by the therapists across sessions.

During baseline, the therapists were observed before they distance coaching was introduced. For Anna baseline was observed over three sessions and during baseline she demonstrated a stable, low level of target behaviors. Distance coaching for her was conducted during 16 sessions, but the videotape of the session fifth was not made and data are analyzed from 18 sessions (3 in baseline and 15 in intervention). During Baseline Anna was performing positive consequences at a low level, stable trend with mean of 1, which increased into higher

level, with a slight increasing trend with mean of 3 after distance coaching was introduced. She was performing correct commands at a low level, stable trend, with mean of 2 in baseline. After distance coaching was introduced she performed these skills at a higher level, with an increasing trend and mean of 11.

Tatia was observed over 20 sessions, nine sessions in baseline and 11 in intervention. Data points in baseline are representing eight sessions, as the videotape of the fourth session was not made because of a technical recording error. Tatia was performing positive consequences at a low level, stable trend with mean of 1.5, which increased to a higher level, with an increasing trend with mean of 5 after distance coaching was introduced. Her performance of correct commands was at a moderate level, with a decreasing trend and a mean of 9. After distance coaching was introduced, correct commands changed to a high and stable level, with mean of 30.

Mari was observed over 20 sessions - 14 sessions in baseline and six sessions in intervention. The videotape of the first session was not made because of a technical recording error. Mari was performing positive consequences at a low level, stable trend, with mean of 4 in baseline. After distance coaching was introduced she started performing at a high level, with an increasing trend and a mean of 27.5. Correct commands did not occur in baseline. This changed into high level with mean of 22 during distance coaching.

Changes in each of the therapists' five behaviors were analyzed separately and demonstrated in graphs, which are represented on the figure 2.

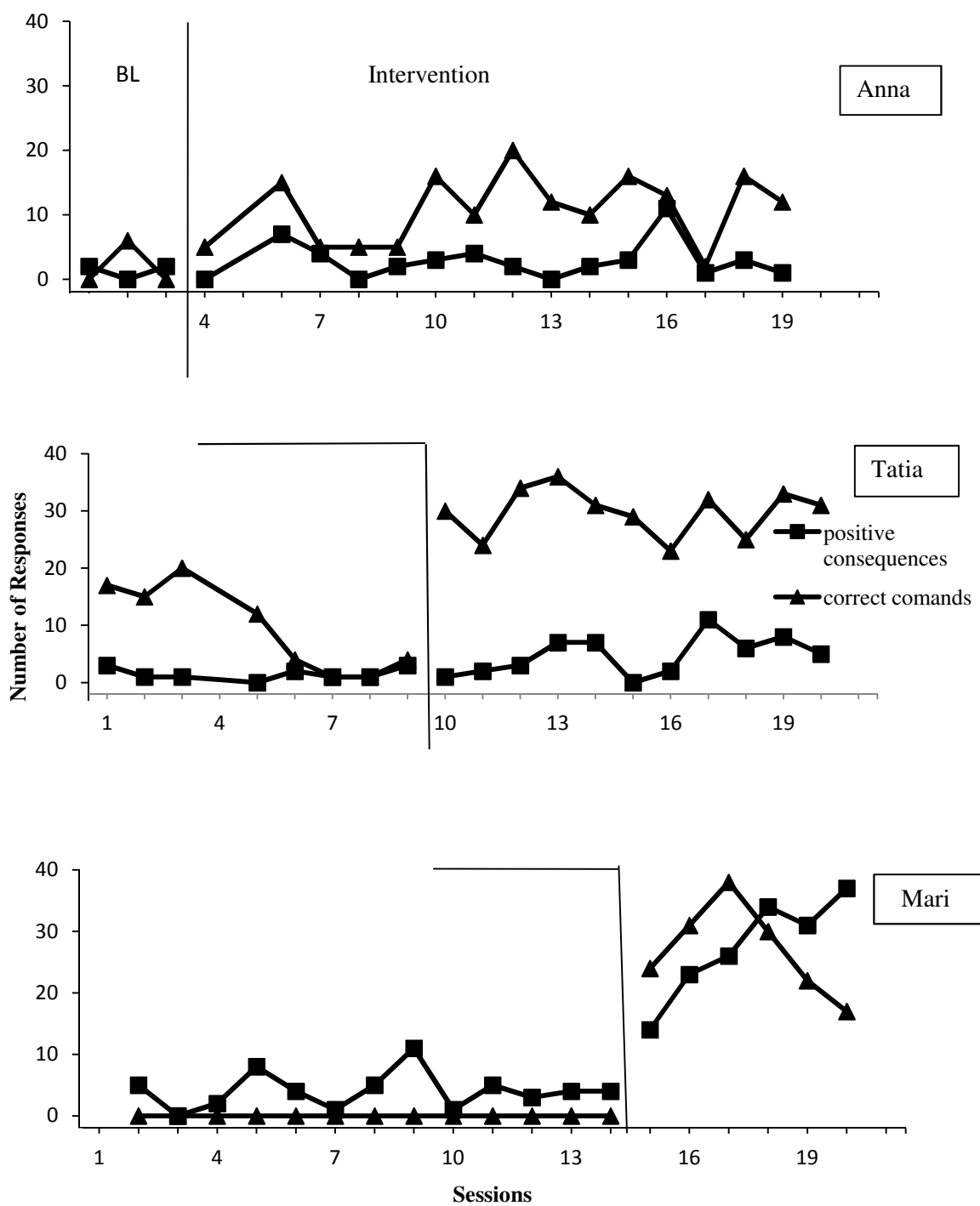


Figure 1: Frequency of two classes of behaviors across sessions by the therapists

During Baseline Anna was performing positive consequences at a low level, stable trend with mean of 1. After distance coaching was introduced her performance of this skill did not change. Anna's performance of direct command was at a low level, stable trend with mean of 2 in baseline. This changed to a higher and stable level, with mean of 7 during distance coaching. Repetition of command, error correction and reflection did not occur during baseline. After distance coaching commenced, Anna started performing repetition of command at higher and stable level, with a mean of 4, reflection occurred at a higher level, with a slightly increasing trend and a mean of 2. Error correction did not occur in distance coaching.

Tatia was performing positive consequence at a low and stable level, with mean of 1, which changed to higher and variable level, with mean of 5 in distance coaching. Tatia started performing direct command at a high level, with a decreasing trend evident during the last four data points, and with mean of 9 in baseline. After distance coaching was introduced her performance of direct command changed to a high and stable level, with a mean of 16. No repetition of command and error correction occurred during baseline. During intervention, Tatia started performing these skills at a higher and stable level, with some variability and mean of 9 for repetition of command and mean of 4 for error correction. Tatia's performance of reflection in baseline was at a low level, stable trend with mean of 0.6. After distance coaching was introduced, data path demonstrated a slightly increasing trend, with a small increase in mean to 1.

Mari was performing positive consequence at a low and stable level, with mean of 1. This changed into high level, with an increasing trend and a mean of 13 during distance coaching. Direct command, repetition of command and error correction did not occur during baseline. After distance coaching was introduced Mari started performing direct command at a high level,

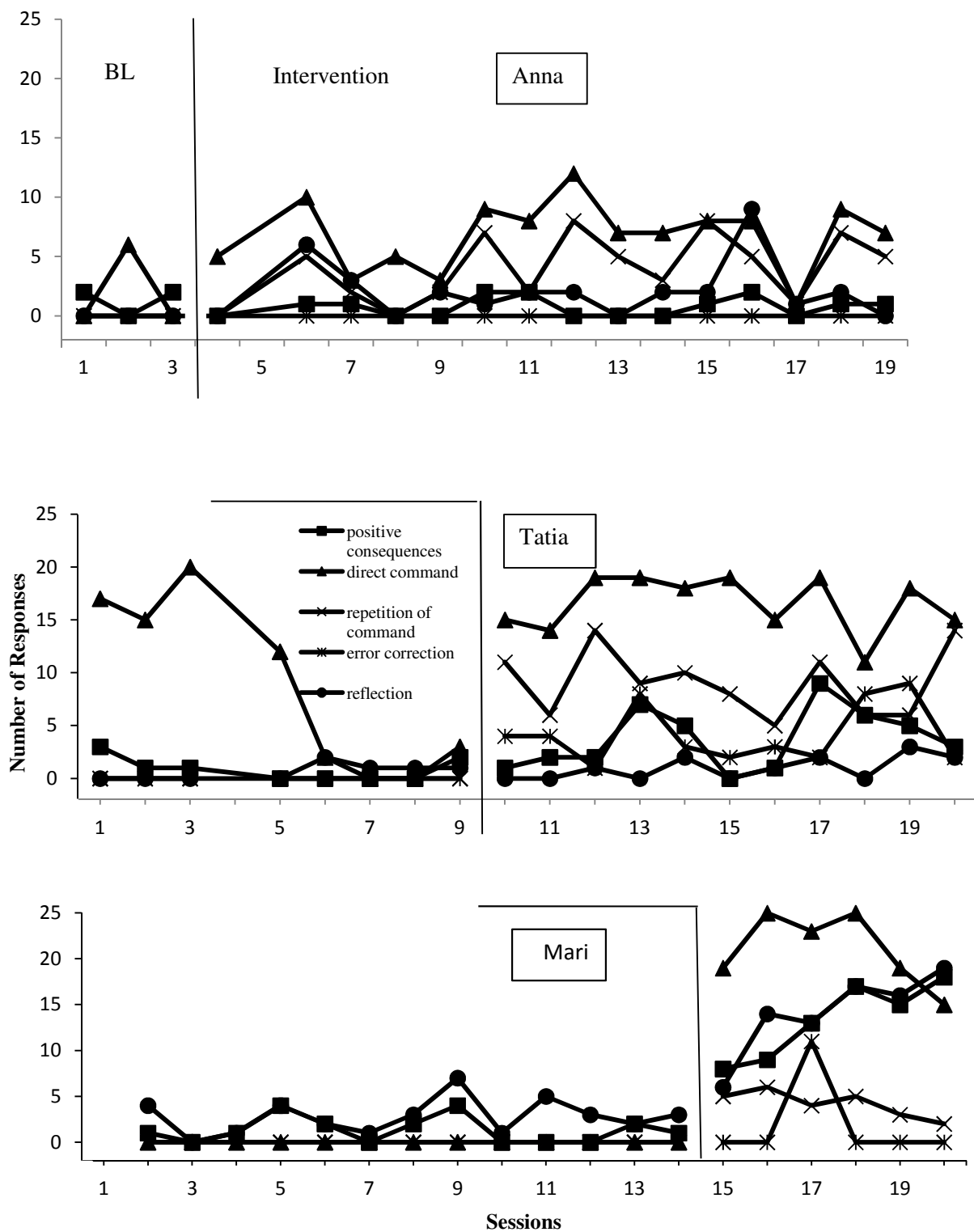


Figure 2: Frequency of target behaviors across sessions by the therapists

with mean of 21. Repetition of command was performed at a higher level, with a slight decreasing trend and a mean of 4. Error correction occurred during one session after distance coaching was introduced with a mean of 2. Mari started performing reflection at a low and stable level, with a mean of 3 in baseline. During distance coaching, this changed into high level, with an increasing trend and a mean of 14 in intervention.

Child Behavior

Effects of distance coaching on children's verbal behaviors were examined as well. The following five behaviors were observed for children: Mand, Tact, Echoic, Vocalization and Verbalization. For visual analysis data of those behaviors are represented on two graphs. Changes in mand, tact and echoic are demonstrated in Figure 3 and changes in vocalization and verbalization are demonstrated in Figure 4.

Andrea was observed over 19 sessions-three sessions in baseline and 16 sessions in distance coaching. Figure 3 demonstrated that mand, tact, and echoic did not occur in baseline. After distance coaching was introduced, Andria started performing mand and echoic at a stable low level, with a mean of 0.2 for mand and a mean of 0.5 for echoic. There was no change demonstrated for tact. As demonstrated in Figure 4, Andria started performing vocalization at a high level, with a decreasing trend and a mean of 14 in baseline. After distance coaching was introduced, he continued at a lower level, with a slight downward trend and a mean of 9. Verbalization did not occur in baseline. After distance coaching, Andrea performed at a stable low level with a mean of 0.2.

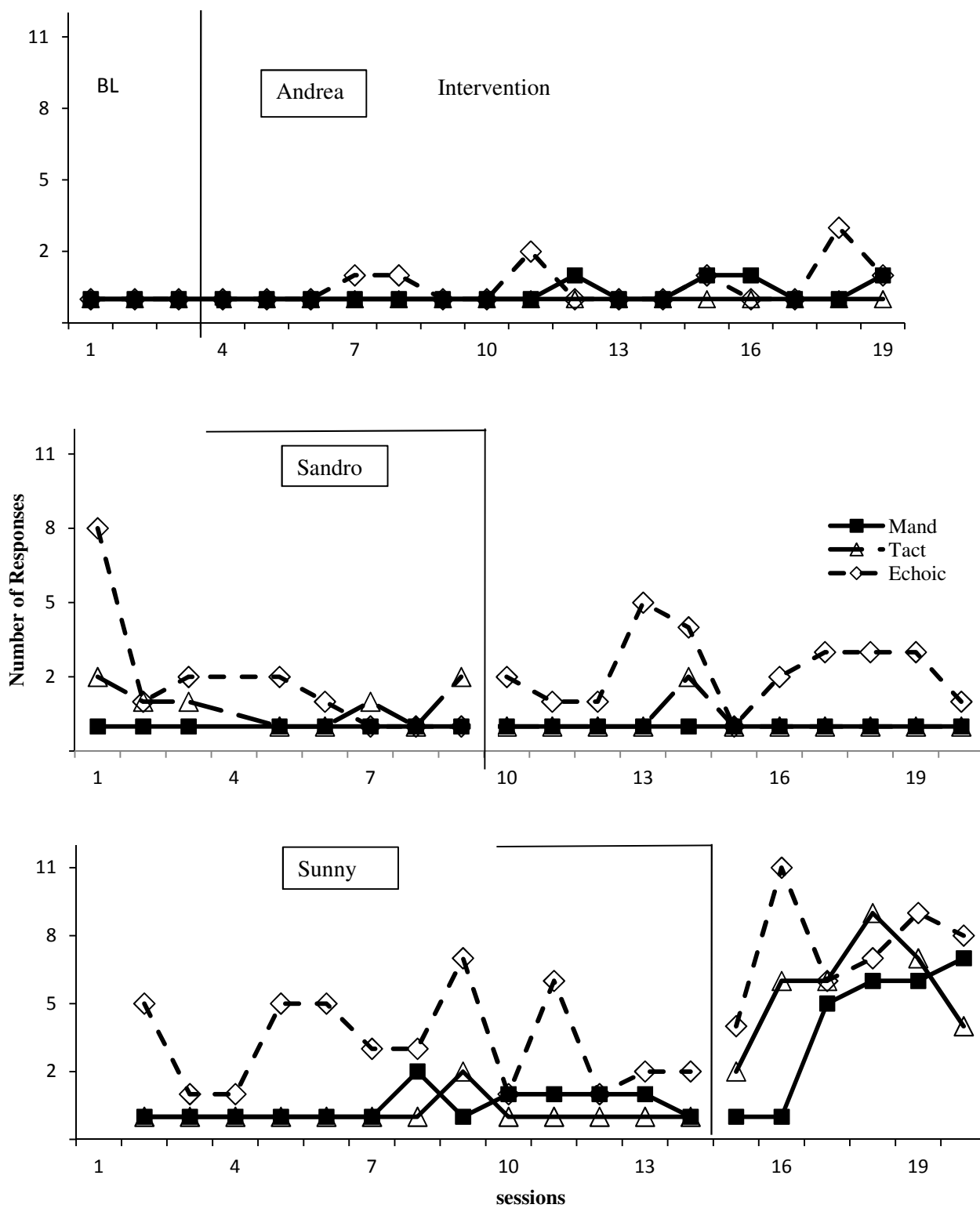


Figure 3: Frequency of mand, tact and echoic behavior across sessions by the children

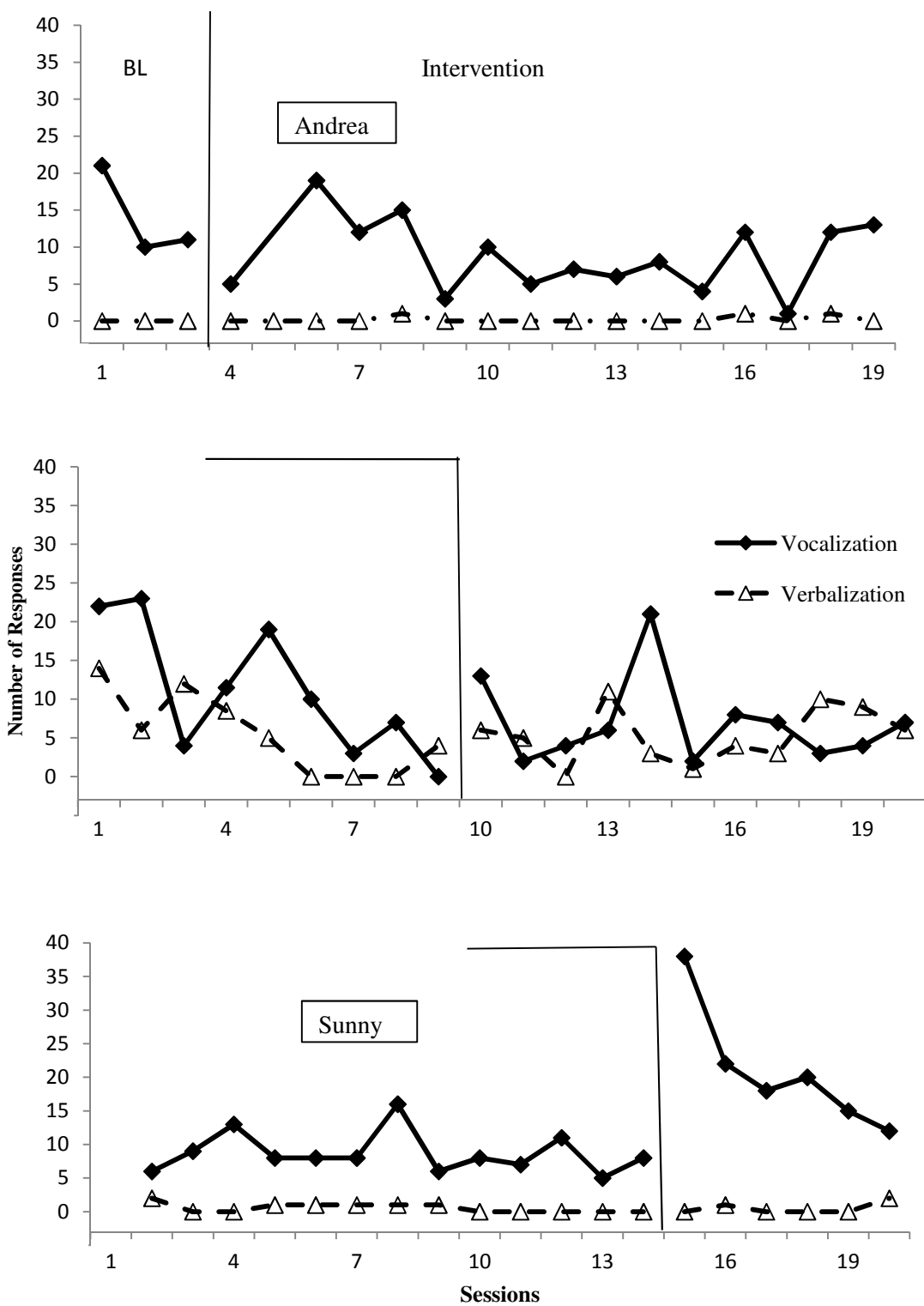


Figure 4: Frequency of Vocalization and verbalization across sessions by the children

Sandro was observed over 20 sessions-nine sessions during baseline and 11 sessions in distance coaching. As demonstrated in Figure 3, mand did not occur in baseline or during distance coaching. Sandro's performance of tact was at a low stable level, with a mean of 1 in baseline. There was only one occurrence of tact in distance coaching. Echoic behavior was performed at a low level, with a decreasing trend in baseline with a mean of 1.3. During distance coaching was introduced, Sandro started performing this skill at a higher level, with a slightly increasing trend and a mean of 1.5. As seen in Figure 4, Sandro's performance of vocalization in baseline demonstrated a decreasing trend with a mean of 11. After distance coaching, there was a decrease to a mean of 7 with no trend. Sandro started performing verbalization at a moderate level, with a decreasing trend and a mean of 5. After distance coaching commenced, there was a slightly increasing trend with the same mean of 5.

Sunny was observed over 20 sessions- 14 sessions in baseline and six in intervention. As demonstrated in Figure 3, Sunny was performing Mand at a low and stable level, with a mean of 0.4 in baseline. After distance coaching was introduced he started performing it at a high level, with an increasing trend and a mean of 4. Sunny's performance of Tact was at a stable low level with mean of 0.1 as there was only one occurrence in baseline. This changed to high level, with an increasing trend and a mean of 6 during distance coaching. He was performing Echoic at a low stable level, with a mean of 3 in baseline. After distance coaching, this changed to a higher level, with a slightly increasing trend and a mean of 7.5. As demonstrated in Figure 4, Sunny was performing vocalization at a moderate stable level, with mean of 8. After distance coaching of the therapist was introduced, he started performing this skill at a higher level, with a decreasing trend and a mean of 21. Sunny performed verbalization at a low stable level with mean of 0.5 in baseline, which was remained the same in intervention.

Coach Comments

The frequency and content of coaching comments were examined as well. The following coaching comments were provided for therapists: Labeled praise, unlabeled praise, direct command, descriptive label and higher order comments. The mean of each coaching comment was calculated for each therapist and the data are summarized in Figure 5. During distance coaching, the coach made a mean of 2.2 comments per minute to Anna, 2.0 comments per minute to Tatia, and 2.3 comments per minute to Mari.

The mean frequency of the coach's labeled praise comments during 15 minutes of coaching for Anna was 7.5, for Tatia it was 7 and for Mari it was 9. The mean frequency of unlabeled praise for Anna was 13, for Tatia it was 11 and for Mari it was 14. The mean frequency of direct command for Anna was 12, for Tatia it was 10 and for Mari it was 8. The mean of descriptive label comments for Anna was 1, for Tatia 2, and for Mari it was 3.5. The mean of higher order comments for Anna was 0.1, for Tatia 0.1 and for Mari it was 0.2.

Social Validity

After the study was finished, therapists were asked to complete a social validity questionnaire to evaluate appropriateness of coaching procedures, goals and outcomes. The therapists were encouraged to provide any comments they think will be beneficial to assess effectiveness of distance coaching. (Kazdin, 1977; Wolf 1978). The social validity questionnaire is available on Appendix E. (These data will be collected after the last day of the study. The research will continue for another month or two to examine outcomes in verbal behavior development, even though the data at present are sufficient to show experimental control with outcomes in therapist and child behavior.)

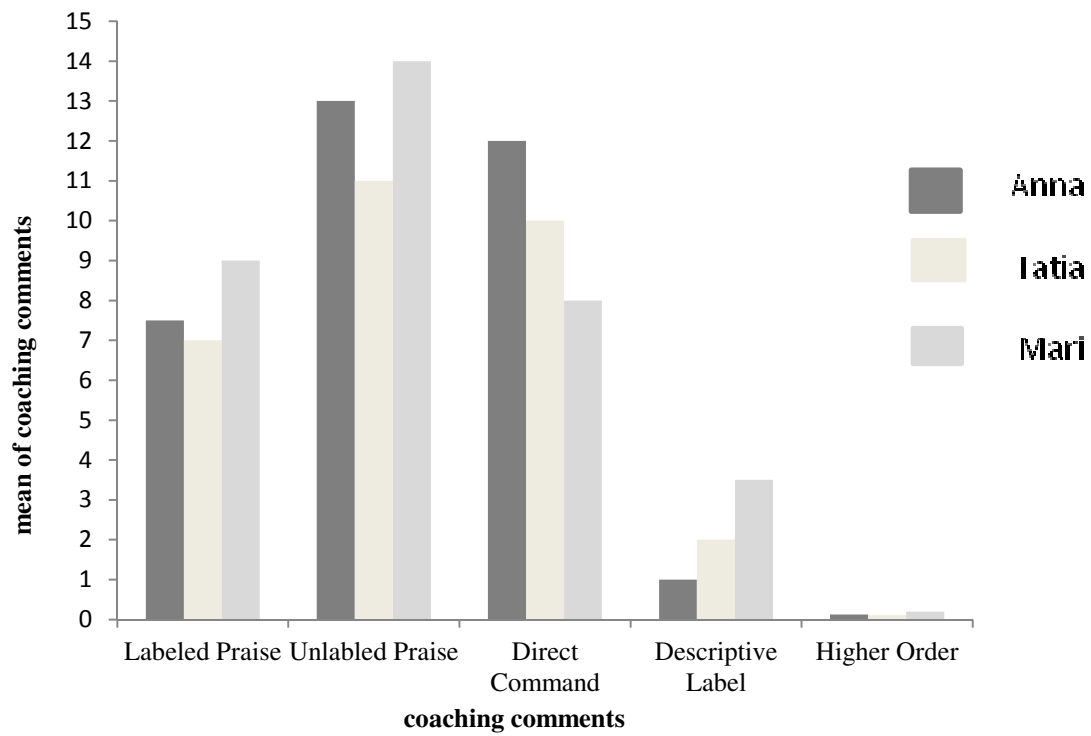


Figure 5: Frequency and content of coaching comments

Discussion

The experimental goal was to examine whether communications technology can effectively be used for distance training and coaching, and whether it would result in increased use of therapeutic skills by the therapists and increased use of verbal operants by the children with autism.

To perform distance coaching the following communication technologies were used: participants of this study were equipped with a laptop computer, video cameras, headphones and telephones. A connection between the therapists and the coach was established via the internet. This allowed the coach to watch the therapy and provide coaching during the live sessions from a distance across continents, countries separated by space of 9600 kilometers. Even though the internet connection was variable in quality, all coaching sessions were completed. Sometimes incoming signals followed with extraneous sounds, but the therapists still were able to hear coaching comments and the additional technology noise did not disrupt the coaching session. If the phone connection terminated unexpectedly, the coach placed another call and the coaching session was continued. Skype was a reliable connection which never terminated, although the coach was concentrated more on the sound incoming from the telephone call via Viber rather than the video signal. There were some technical errors related to video recording, but it was detected at the early stage of the study and it was never repeated. Although there were minor technical issues related to technologies, distance coaching never was terminated and the study demonstrated that communications technology could be effectively used for coaching.

To assess the performance of the therapists target behaviors were scored and analyzed via visual analysis. Visual analysis was conducted for two classes of behaviors and for each target behavior separately. All three therapists demonstrated positive changes in the performance of

two classes of behaviors. There were differences in performance of each of the target behaviors by the therapists. Anna demonstrated positive changes in three out of five target behaviors. The frequency of performing direct command, repetition of command and reflection increased after she had been coached. Tatia demonstrated positive changes in four behaviors from five and her performance of positive consequence, direct command, repetition of command and error correction increased after she had been coached. Mari demonstrated positive changes in all five behaviors. To summarize, distance coaching improved the therapists' performance on therapeutic skills, though generalization of these skills will be the next step. To demonstrate maintenance of learned skills, therapists should be able to implement same type of intervention with other children with autism in different settings (Stokes & Baer, 1977).

Coaching consisted of the following comments: labeled praise, unlabeled praise, direct command, descriptive label and higher order comments. About two comments per minute were provided for the therapists. There was a consistency in the frequency of the coaching comments. Coaching comments were primarily praise and direct commands. Cultural differences occurred while providing coaching comments. Usual practice suggests the use of more labeled praise than unlabeled praise. In this study, the mean frequency of unlabeled praise was higher than labeled praise. English language offers short forms of labeled praise, which could not be easily translated into the Georgian language. Georgian equivalence of English labeled praise required longer statements, which was not appropriate for 15 minute coaching sessions where the therapist was active in interaction with a child. Instead of long sentences, the coach used short unlabeled praise statements, e.g “good job following through” is the labeled praise used in coaching in the U.S, which would be translated in Georgian language as “I liked how you followed your direct command with the labeled praise (dzalian mometsona, rogorc daasrule sheni pirdapiri instrucia

specificuri sheqebit).” There was a difference in providing coaching comments for different therapists. There were more direct command comments used with less experienced therapist and more labeled and unlabeled praise with the more experienced therapist.

Visual analysis was conducted to evaluate increased use of verbal behaviors by each child. Andrea demonstrated positive changes in mand, echoic and verbalization after distance coaching was introduced. Sandro demonstrated some improvements in verbalization and echoic behavior. Sunny demonstrated positive changes in four behaviors: mand, tact, echoic and vocalization.

The effectiveness of distance coaching as an independent variable intervention for the therapists’ and children’s behavior was demonstrated within a multiple baseline design across participants. After steady state data were established for one therapist, distance coaching was introduced for her, while other therapists remained in baseline. Changes occurred with the first therapists when she was coached, though the two other therapists, who were on baseline level, did not show any change. Changes in their behaviors occurred only when distance coaching was introduced to them. The study demonstrated experimental control with a few variations of the therapists’ and children’s behavior.

While discussing results of this study, it is important to consider that therapists and children had different backgrounds and skill levels. Anna did not have any experience being supervised while working with children with Autism, while Mari had experience working in an Autism clinic under the supervision for several years. Also, two participants, Mari and Tatia, had completed an ABA class at the university level, while Anna had training in ABA post-graduation. Anna was the therapist who demonstrated the least dramatic change in her therapeutic skill repertoire and also she was the therapist who was working with the child with the poorest verbal skills who presented with interfering problem behavior. When she started

implementing therapy for verbal development, the child responded with increased challenging behavior, so, Anna, instead of working on verbal behavior worked on reducing the child's problem behavior. Data points from the sessions 8, 9 and 17 in the multiple baseline design (see figures 1 and 2) represent the sessions when child was engaged in problem behavior and this affected Anna's performance of therapeutic skills. Anna did not demonstrate changes in positive consequences. Positive consequences were provided when the child responded with verbalization to the therapist's command, so the use of this skill was related to child's performance. Error correction never occurred with Anna. The use of this skill was directly connected to the child's incorrect response. If the child gave an incorrect response to the therapist's command, the therapist had to provide a correct response and repeat the same command. Anna's child had only vocalizations and each occurrence of an approximation of words was reinforced and never corrected. So, performance in error correction was directly affected by the child's performance. The child's vocalizations changed in quality, as he was displaying more protesting sounds in baseline. After distance coaching began, he started to pronounce different sounds, which did not occur in baseline, while he was engaged in play activities, though these changes in this behavior were not reflected in the data numbers.

Distance coaching had less effect on Sandro's behaviors. Vocalization started occurring at a high level in a baseline showing a decreasing trend. This behavior continued decreasing during distance coaching. During baseline he was pronouncing "meme" as a result of the therapist's command to say "mome (give me)", although his response was never reinforced by the therapist. During baseline the therapist was coached to change activities and she changed by stopping to ask him to say "mome". When distance coaching was introduced, the child started pronouncing different vocalizations such as "dadada", "eeeer", "mamimami", and "riri." Thus,

distance coaching resulted in content and diversity change in vocalizations, although was not reflected in the data numbers. Also, there were family members talking and moving around the room when there was a therapy session provided for the child. In these conditions the child might be distracted which could have influenced his performance. The room where the therapy was implemented was the living room, where usually the child's twin sibling was studying and there was no extra room for therapy. Also, this child was engaged in limited activities which was less preferable for him and the therapy materials did not have high value for him as they had for other two children.

Sunny started performing vocalizations at a high level but showed a decreasing trend during distance coaching. When distance coaching was introduced to the therapist, she changed her commands towards Sunny and he responded to it with a high number of vocalizations. In the following sessions he learned how to discriminate between sounds and words and started to respond with mand, tact and echoic behaviors appropriately to therapist's commands. Sunny's performance affected therapist's performance of a repetition of command and error correction. Sunny was responding direct command with words and there was no need to repeat commands or correct responses.

The study has recommendations for future implementation of verbal development via distance coaching. While conducting a verbal behavior program, activities implemented for the child should be enjoyable and the objects and items used in these activities should have high values for the child. At the beginning, any attempt by the child to pronounce a sound or word should be reinforced. If a child is engaged in problem behaviors which are interfering with the verbal behavior development it should be addressed first, but if the problem behavior is not severe, the therapist can concentrate on the management of both simultaneously.

Therapists working on children's verbal behavior should be familiar with verbal operants and should be able to discriminate between them. Also, it is very important to know how to correctly use commands from correct command classes and provide positive consequences after child pronounces sounds, syllables and words.

Coaching played a significant role in developing therapeutic skills and verbal behaviors. As it is an important variable for therapists' and children behaviors, a coach needs to be trained and supervised in coaching to be able to provide coaching comments relevant to therapists' behaviors with relevant timing.

Most critical in distance coaching is communications technology. Also, it is very important to adjust the comfort of administration of procedures and provide secure protection of the participants, which can be achieved by using strong password protected computers and internet applications. There should be encryption provided for data transfer, which would reduce risks associated with confidentiality.

In summary, the research employed a multiple baseline design to show experimental control of the delivery of distance coaching across countries from North America to Eastern Europe. Therapists demonstrated improved skills in treatment and children showed improvements in verbal behavior.

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Appendix A: Consent forms

Consent forms for Therapists

Consent to Participate in Research

Using distance coaching of therapists to enhance verbalizations by children with autism

Principal Investigator: Ana Barkaia

barkaiax@dukes.jmu.edu

Identification of Investigators & Purpose of Study

You are being asked to participate in a research study conducted by Ana Barkaia and faculty from James Madison University. The purpose of this study is to investigate effectiveness of distance coaching on developing mastery skills of therapists and enhancing verbal behavior repertoire in children with autism. This study will contribute to the researcher's completion of her master's thesis.

Research Procedures

Should you decide to participate in this research study, you will be asked to sign this written consent form once all your questions have been answered to your satisfaction. This study consists of reviewing goals and procedures. First, your intervention with child will be watched through SKYPE and recorded on a video tape, which will be reviewed by your supervisor and by Ana Barkaia as your coach. You will be asked to participate in one day training which will happen through Skype and will include role-playing of procedures. After completing this training, the coaching process starts which will be provided through SKYPE or VIBER, you will be receiving coaching comments through a Bluetooth transmitter and you will be asked to install communication technologies to your computer, which will be provided by us. To receive coaching comments you will be asked to wear a Bluetooth ear-piece. You will be able to review your performance at the end of each session.

Time Required

Participation in this study will not require extra time for you, as you are already implementing intervention with your client, coaching will be implemented during your working times with clients. Coaching will last for 15 minutes per session and maximum number of coaching sessions will be seventeen.

Risks

The investigator perceives that this research involves no more than minimal risk. The following are possible risks arising from your involvement in this study:

- You may be uncomfortable with remote observation in the beginning of the study, as it is related with extra technologies in the intervention room, but researches in this field have shown that such discomforts are usually temporary.
- Your interventions with child will be videotaped and both Video and Audio recordings will be made in this study. Video cameras will be provided by the NGO. Records first will be uploaded in Dropbox and then deleted once they are downloaded in “Children of Georgia’s” office computer (Video recording is common practice for NGO for usual program monitoring of treatment sessions) and in “Alvin Baird Attention and Learning Disability Center’s” computer in Harrisonburg, Virginia (in order to score target behaviors for the current outcome assessment).The video footage in Baird center’s computer will then be transferred via thumb drive to another computer which has no internet access. Once this transfer occurs, then the video will be deleted from the original computer at the Baird Center. There is a little chance that the transfer of video recordings will be monitored by the internet service provider. Your faces and voices will be identifiable and to protect your confidentiality, we will use strong password protected computer and all files and documents will be stored on an encrypted or additionally password protected folders.

Benefits

The main potential benefit from participation in this study is to improve your skills in therapeutic interaction with young children on the autism spectrum. The research will also help JMU and Children of Georgia to develop collaborative goals for distance consultation mode.

Confidentiality

The results of this research will be presented at the investigator’s thesis committee meeting in which the thesis will be defended, and will be presented at the Psychological Sciences Symposium at JMU. The research may be presented and published at academic conferences and journals. The results of this project will be coded in such a way that the participant’s identity will not be identified. All data will be stored in a secure location without names attached and accessible only to the research team members.

Participation & Withdrawal

Your participation is entirely voluntary. You are free to choose not to participate. Should you choose to participate, you can withdraw at any time without consequences of any kind. Your work in Children of Georgia will not be affected by whether you agree or decline to participate in this research.

Questions about the Study

If you have questions or concerns during the time of your participation in this study, or after its completion or you would like to receive a copy of the final aggregate results of this study, please contact:

Ana Barkaia

Psychological Sciences

James Madison University

barkaiax@dukes.jmu.edu

Trevor Stokes

Baird Center

James Madison University

Telephone: (540) 568-8829

stokestf@jmu.edu

Questions about Your Rights as a Research Subject

Dr. David Cockley

Chair, Institutional Review Board

James Madison University

(540) 568-2834

cocklede@jmu.edu

Giving of Consent

I have read this consent form and I understand what is being requested of me as a participant in this study. I freely consent to participate. I have been given satisfactory answers to my questions. The investigator provided me with a copy of this form. I certify that I am at least 18 years of age.

I give consent for me to be videotaped during my participation_____ (therapist's initials)

Name of Participant (Printed)

Date

Name of Participant (Signed)

Date

Name of Witness (Signed)

Date



ALVIN V. BAIRD ATTENTION AND LEARNING DISABILITIES CENTER

ინფორმირებული თანხმობა

თერაპევტების დისტანციური გაწვრთნა აუტისტური სპექტრის დარღვევების მქონე ბავშვების ვერბალური უნარების გაზრდის მიზნით

ძირითადი მკვლევარი: ანა ბარქაია

barkaiax@dukes.jmu.edu

მკვლევარის იდენტიფიცირება და კვლევის მიზანი

ანა ბარქაია და ჯეიმს მედისონის უნივერსიტეტის (უნივერსიტეტი მდებარეობს ამერიკის შეერთებულ შტატებში, კერძოდ ვირჯინიის შტატ ქალაქ ჰარისონბურგში) ფსიქოლოგიური მეცნიერებების დეკანატი, გთავაზობთ მათ მიერვე ჩატარებულ კვლევაში მონაწილეობას. კვლევის მიზანია დაადგინოს თუ რამდენად ეფექტურია დისტანციური წვრთნის მეთოდი თერაპევტების პროფესიული უნარების განვითარებისათვის და აუტისტური სპექტრის დარღვევების მქონე ბავშვების ვერბალური უნარების გასაზრდელად. ეს კვლევა დაეხმარება მკვლევარს მოიპოვოს მაგისტრის ხარისხი, რამდენადაც ის წარმოადგენს მის სამაგისტრო ნაშრომს.

კვლევის პროცედურა

იმისათვის რომ მკვლევარმა განსაზღვროს რამდენად ეფექტურია დისტანციური წვრთნის მეთოდი, ის დააკვირდება თქვენი და ბავშვის ინტერვენციას სკაიპის მეშვეობით და ამავდროულად ის დააკვირდება ინტერვენციის ვიდეო ჩანაწერებსაც. კვლევის ფარგლებში თქვენ ჩაგიტარდებათ ტრენინგი სკაიპის საშუალებით, სადაც განხილული იქნება კვლევის მიზნები და პროცედურები, ტრენინგის ფარგლებში მოხდება როლური გათამაშებებიც, ტრენინგის შემდეგ კი ჩაგიტარდებათ დისტანციური გაწვრთნა რომელსაც განახორციელებს ანა ბარქაია. თქვენი და ბავშვის ინტერვენციის ვიდეო ჩანაწერს დააკვირდებიან კვლევაში მონაწილე სხვა პირები, იმისთვის რომ აღრიცხონ თქვენი და ბავშვის შედეგები.

კვლევისთვის განკუთვნილი დრო

კვლევაში მონაწილეობა არ მოითხოვს თქვენს დამატებით დროს, რამდენადაც გაწვრთნა მოხდება მაშინ როდესაც თქვენი ახორციელებთ ჩარევას ადრეული ინტერვენციის სერვისის ფარგლებში. დისტანციური გაწვრთნა გაგრძელდება 15 წუთის მანძილზე მაქსიმუმ 17 სესიის განმავლობაში.

რისკები

ინტერვენციის ვიდეო ჩანაწერების გადაგზავნა ინტერნეტით საქართველოდან ამერიკაში დაკავშირებულია რისკებთან.

- ინტერვენცია ჩაიწერება ორგანიზაცია „საქართველოს ბავშვების“ ვიდეო კამერით, შემდეგ კი გადაიწერება ამავე ორგანიზაციის ოფისის კომპიუტერში საიდანაც აიტვირთება Dropbox-ში. მას შემდეგ რაც ვიდეო Dropbox-დან გადმოიტვირთება ჯეიმს მედისონის უნივერსიტეტთან დაკავშირებული ალვინ ბეარდის სწავლის სირთულეებისა და ყურადღების დეფიციტის ცენტრის კომპიუტერში, ვიდეო წაიშლება Dropbox-დან და შეინახება ფოლდერში, რომელზეც ხელმისაწვდომობა ექნება მხოლოდ მკვლევარსა და დამკვირვებელს. კომპიუტერიც და ფოლდერიც დაცული იქნება ძლიერი კოდით, იმისთვის რომ ვიდეო არ მოხვდეს იმ პირებთან რომლებიც არ იღებენ ამ კვლევაში მონაწილეობას. თუმცა არსებობს მინიმალური რისკი რომ ინტერნეტ სესვისის მომწოდებლები გააკონტროლებენ დოკუმენტებისა და ვიდეო ფაილების გადაგზავნას. მსგავსი რისკი უკავშირდება ასევე სკაიპ ჩართვებსაც. თუმცა მხოლოდ თქვენი ხმა და სახე იქნება იდენტიფიცირებული.
- თავიდან თქვენ შეიძლება შეგექმნათ დისკომფორტი დისტანციური წვრთნის განხორციელების პროცესში, რამდენადაც დისტანციური წვრთნა დაკავშირებულია ტექნოლოგიების გამოყენებასთან, თუმცა ამ სფეროში ჩატარებული კვლევები უჩვენებს რომ მსგავსი დისკომფორტი არის დროებითი.

კვლევაში მონაწილეობის უპირატესობა

კვლევაში მონაწილეობა ხელს შეუწყობს ბავშვის სამეტყველო უნარებისა და თქვენი, როგორც თერაპევტის პროფესიულ განვითარებას. მიმდინარე კვლევა ასევე დაეხმარება ორგანიზაცია „საქართველოს ბავშვებსა“ და ჯეიმს მედისონის უნივერსიტეტს განახორციელონ ერთობლივი მიზნები დისტანციური კონსულტაციის კუთხით.

კონფიდენციალობა

კვლევის შედეგები წარდგენილი და განხილული იქნება სამაგისტრო თემის დაცვაზე და ფსიქოლოგიური მეცნიერებების დეპარტამენტის სიმპოზიუმზე ჯეიმს მედისონის უნივერსიტეტში. კვლევა შეიძლება გამოქვეყნდეს სხვადასხვა სამეცნიერო ჟურნალებსა და კონფერენციაზე, თუმცა თქვენი კონფიდენციალობა მაქსიმალურად იქნება უზრუნველყოფილი, რამდენადაც მონაცემები იქნება კოდირებული. კვლევის ყველა მონაცემი პერსონალური ინფორმაციით შეინახება დაცული ოთახის სპეციალურ კომოდში, რომელზეც ხელმისაწვდომობა ექნება მხოლოდ მკვლევარს.

კვლევაში მონაწილეობა

თქვენი კვლევაში მონაწილეობა არის ნებაყოფლობითი. თქვენ გაქვთ სრული თავისუფლება უარი თქვათ ან ნებისმიერ დროს შეწყვიტოთ კვლევაში მონაწილეობა. თქვენი უარი არ აისახება თქვენს სამსახურზე „საქართველოს ბავშვებში“.

კითხვები კვლევის შესახებ

თუ თქვენ გაქვთ დამატებითი შეკითხვები კვლევის შესახებ ან გაქვთ სურვილი მიიღოთ დაწვრილებითი ანგარიში კვლევის დასრულების შემდეგ, გთხოვთ დაუკავშირდეთ:

ანა ბარქაია

Trevor Stokes

ფსიქოლოგიური მეცნიერებების ფაკულტეტი

Baird Center

ჯეიმს მედისონის უნივერსიტეტი

James Madison University

barkaiax@dukes.jmu.edu

Telephone: (540) 568-8829

stokestf@jmu.edu

თუ გაქვთ შეკითხვები თქვენი როგორც კვლევაში მონაწილე პირის უფლებების შესახებ, გთხოვთ დაუკავშირდეთ:

Dr. David Cockley

Chair, Institutional Review Board

James Madison University

(540) 568-2834

cocklede@jmu.edu

ინფორმირებული თანხმობა კვლევაში მონაწილეობაზე

ყურადღებით გავეცანი ინფორმირებული თანხმობის ფორმას და ყველა ჩემს კითხვაზე მივიღე ამომწურავი პასუხი. ჩემთვის სრულიად გასაგებია თუ რისი შესრულება მომეთხოვება როგორც კვლევაში მონაწიელ პირს და ვადასტურებ რომ ჩემი მონაწილეობა კვლევაში არის სრულიად ნებაყოფლობითი. ამასთანავე ვადასტურებ რომ ჩემი ასაკი არის 18 წელს ზემოთ.

გამლევთ ნებართვას, იმისთვის რომ ჩემი ინტერვენცია ბავშვთან გადაიღოთ ვიდეო კამერით კვლევის პროცესში _____ (თერაპევტის ინიციალები)

კვლევაში მონაწილე პირის სახელი და გვარი

თარიღი

კვლევაში მონაწილე პირის ხელმოწერა

თარიღი

მოწმის ხელმოწერა

თარიღი



ALVIN V. BAIRD ATTENTION AND LEARNING DISABILITIES CENTER

Consent Forms for Parents

Consent to Participate in Research

Using distance coaching of therapists to enhance verbalizations by children with autism

Principal Investigator: Ana Barkaia

barkaiax@dukes.jmu.edu

Identification of Investigators & Purpose of Study

Your child is asked to participate in a research study conducted by Ana Barkaia and faculty from James Madison University. The purpose of this study is to investigate effectiveness of distance coaching on developing mastery skills of therapists and enhancing verbal behavior repertoire in children with autism. This study will contribute to the researcher's completion of her master's thesis.

Research Procedures

Should you decide for your child to participate in this research study, you will be asked to sign this written consent form after all your questions have been answered to your satisfaction. Intervention with your child implemented by therapists will be recorded on videotapes and will be watched through Skype by investigators. Your child's performance will be observed. All investigators will be in Harrisonburg, Virginia. You will be asked to allow therapists using communications technologies in your home. You will be provided a detailed report on your child's performance after this study is completed.

Time Required

Participation in this study will not require extra time for you and for your child, as he/she already receives service from the therapists, and coaching will not affect your time schedule. Your child's behavior will be observed for maximum 17 sessions.

Risks

The following possible risk arising from your child's involvement in this study is related to transferring video records from Georgia to United States in Harrisonburg, Virginia.

Your Child's interaction with therapists will be videotaped. Video cameras will be provided by the NGO. Records first will be uploaded in Dropbox and then deleted once they are downloaded in "Children of Georgia's" office computer (Video recording is common practice for NGO for

usual program monitoring of treatment sessions) and in “Alvin Baird Attention and Learning Disability Center’s” computer in Harrisonburg, Virginia (in order to score target behaviors for the current outcome assessment).The video footage in Baird center’s computer will then be transferred via thumb drive to another computer which has no internet access. Once this transfer occurs, then the video will be deleted from the original computer at the Baird Center. There is a little chance that video transferring will be monitored by the internet service provider. Faces and voices of your child, also his first name will be identifiable in these records. To protect your child’s confidentiality, we will use strong password protected computer and beyond this, all files and documents will be stored on an encrypted or additionally password protected folders.

Benefits

The main potential benefit from participation in this study is to improve your children’s verbal behavior repertoire and to enhance therapist’s mastery of therapeutic skills. The research will also help JMU and Children of Georgia to develop collaborative goals for distance consultation mode.

Confidentiality

The results of this research will be presented at the investigator’s thesis committee meeting in which the thesis will be defended, and will be presented at the Psychological Sciences Symposium. The research may be presented and published at academic conferences and journals. The results of this project will be coded in such a way that the participant’s identity will not be identified. All data will be stored in a secure location without names attached and accessible only to the research team members.

Participation & Withdrawal

Your child’s participation in this study is entirely voluntary. You are free to choose not to participate. Should you choose to participate, you can withdraw at any time without consequences of any kind. Receiving treatment services from Children of Georgia will not be affected by whether you agree or decline to participate in this research.

Questions about the Study

If you have questions or concerns during the time of your participation in this study, or after its completion or you would like to receive a copy of the final aggregate results of this study, please contact:

Ana Barkaia

Psychological Sciences

James Madison University

barkaiax@dukes.jmu.edu

Trevor Stokes

Baird Center

James Madison University

Telephone: (540) 568-8829

stokestf@jmu.edu

Questions about Your Rights as a Research Subject

Dr. David Cockley

Chair, Institutional Review Board

James Madison University

(540) 568-2834

cocklede@jmu.edu

Original consent form in Georgian Language

ინფორმირებული თანხმობა

თერაპევტების დისტანციური გაწვრთნა აუტისტური სპექტრის დარღვევების მქონე ბავშვების ვერბალური უნარების გაზრდის მიზნით

ძირითადი მკვლევარი: ანა ბარქაია

barkaiax@dukes.jmu.edu

მკვლევარის იდენტიფიცირება და კვლევის მიზანი

ანა ბარქაია და ჯეიმს მედისონის უნივერსიტეტის (უნივერსიტეტი მდებარეობს ამერიკის შეერთებულ შტატებში, კერძოდ ვირჯინიის შტატ ქალაქ ჰარისონბურგში) ფსიქოლოგიური მეცნიერებების დეკანატი, თქვენს შვილს სთავაზობს მათ მიერვე ჩატარებულ კვლევაში მონაწილეობას. კვლევის მიზანია დაადგინოს თუ რამდენად ეფექტურია დისტანციური წვრთნის მეთოდი თერაპევტების პროფესიული უნარების განვითარებისათვისა და აუტისტური სპექტრის დარღვევების მქონე ბავშვების ვერბალური უნარების გასაზრდელად. ეს კვლევა დაეხმარება მკვლევარს მოიპოვოს მაგისტრის ხარისხი, რამდენადაც ის წარმოადგენს მის სამაგისტრო ნაშრომს.

კვლევის პროცედურა

იმისათვის რომ მკვლევარმა განსაზღვროს რამდენად ეფექტურია დისტანციური წვრთნის მეთოდი, ის დააკვირდება თქვენი ბავშვისა და თერაპევტის ინტერვენციას სკაიპის მეშვეობით და ამავდროულად ის დააკვირდება ინტერვენციის ვიდეო ჩანაწერებსაც, ამ პროცესის უზრუნველსაყოფად საჭიროა თქვენი წერილობითი თანხმობა თქვენს სახლში კომუნიკაციური ტექნოლოგიების გამოყენებაზე. დაწვრილებითი ანგარიში თქვენი ბავშვის შედეგების შესახებ წარგედგინებათ კვლევის დასრულების შემდეგ.

კვლევისთვის განკუთვნილი დრო

კვლევაში მონაწილეობა არ მოითხოვს თქვენი და თქვენი ბავშვის დამატებით დროს, იმდენად რამდენადაც თერაპევტების გაწვრთნა მოხდება მაშინ როდესაც თქვენი ბავშვი ჩვეულებრივ იღებს ადრეული ინტერვენციის სერვისის მომსახურებას. თქვენი ბავშვს კვლევის ფარგლებში დააკვირდებიან მაქიმუმ 17 სესიის მანძილზე.

რისკები

ინტერვენციის ვიდეო ჩანაწერების გადაგზავნა ინტერნეტით საქართველოდან ამერიკაში დაკავშირებულია რისკებთან. ინტერვენცია ჩაიწერება ორგანიზაცია „საქართველოს ბავშვების“ ვიდეო კამერით, შემდეგ კი გადაიწერება ამავე ორგანიზაციის ოფისის კომპიუტერში საიდანაც აიტვირთება Dropbox-ში. მას შემდეგ რაც ვიდეო Dropbox-დან გადმოიტვირთება ჯეიმს მედისონის უნივერსიტეტთან დაკავშირებული ალვინ ბეარდის სწავლის სირთულეებისა და ყურადღების დეფიციტის ცენტრის კომპიუტერში, ვიდეო წაიშლება Dropbox-დან და შეინახება ფოლდერში, რომელზეც ხელმისაწვდომობა ექნება მხოლოდ მკვლევარსა და დამკვირვებელს. კომპიუტერიც და ფოლდერიც დაცული იქნება ძლიერი კოდით, იმისთვის რომ ვიდეო არ მოხვდეს იმ პირებთან რომლებიც არ იღებენ ამ კვლევაში მონაწილეობას. თუმცა არსებობს მინიმალური რისკი რომ ინტერნეტ სესვისის მომწოდებლები გააკონტროლებენ დოკუმენტებისა და ვიდეო ფაილების გადაგზავნას. მსგავსი რისკი უკავშირდება ასევე სკაიპ ჩართვებსაც. თუმცა მხოლოდ თქვენი ბავშვის სახელი (რამდენადაც არსებობს შანსი რომ ინტერვენციის დრო თერაპევტი სახელით მიმართავს ბავშვს), ხმა და სახე იქნება იდენტიფიცირებული.

კვლევაში მონაწილეობის უპირატესობა თქვენი ბავშვისთვის

კვლევაში მონაწილეობა ხელს შეუწყობს თქვენი ბავშვის სამეტყველო უნარებისა და თერაპევტების პროფესიულ განვითარებას. მიმდინარე კვლევა ასევე დაეხმარება ორგანიზაცია „საქართველოს ბავშვებსა“ და ჯეიმს მედისონის უნივერსიტეტს განახორციელონ ერთობლივი მიზნები დისტანციური კონსულტაციის კუთხით.

კონფიდენციალობა

კვლევის შედეგები წარდგენილი და განხილული იქნება სამაგისტრო თემის დაცვაზე და ფსიქოლოგიური მეცნიერებების დეპარტამენტის სიმპოზიუმზე ჯეიმს მედისონის უნივერსიტეტში. კვლევა შეიძლება გამოქვეყნდეს სხვადასხვა სამეცნიერო ჟურნალებსა და კონფერენციაზე, თუმცა თქვენი ბავშვის კონფიდენციალურობა მაქსიმალურად იქნება უზრუნველყოფილი, რამდენადაც მონაცემები იქნება კოდირებული. კვლევის ყველა მონაცემი პერსონალური ინფორმაციით შეინახება დაცული ოთახის სპეციალურ კომოდში, რომელზეც ხელმისაწვდომობა ექნება მხოლოდ მკვლევარს.

კვლევაში მონაწილეობა

თქვენი ბავშვის კვლევაში მონაწილეობა არის ნებაყოფლობითი. თქვენ გაქვთ სრული თავისუფლება უარი თქვათ ან ნებისმიერ დროს შეწყვიტოთ კვლევაში მონაწილეობა. თქვენი უარი არ აისახება „საქართველოს ბავშვების“ მიერ ადრეული ინტერვენციის სერვისის მოწოდების ხარისხზე.

კითხვები კვლევის შესახებ

თუ თქვენ გაქვთ დამატებითი შეკითხვები კვლევის შესახებ ან გაქვთ სურვილი მიიღოთ დაწვრილებითი ანგარიში კვლევის დასრულების შემდეგ, გთხოვთ დაუკავშირდეთ:

ანა ბარქაია

Trevor Stokes

ფსიქოლოგიური მეცნიერებების ფაკულტეტი

Baird Center

ჯეიმს მედისონის უნივერსიტეტი

James Madison University

barkaiax@dukes.jmu.edu

Telephone: (540) 568-8829

stokestf@jmu.edu

თუ გაქვთ შეკითხვები თქვენი როგორც კვლევაში მონაწილე პირის უფლებების შესახებ, გთხოვთ დაუკავშირდეთ:

Dr. David Cockley

Chair, Institutional Review Board

James Madison University

(540) 568-2834

cocklede@jmu.edu

ინფორმირებული თანხმობა კვლევაში მონაწიელობაზე

ყურადღებით გავეცანი ინფორმირებული თანხმობის ფორმას და ყველა ჩემს კითხვაზე მივიღე ამომწურავი პასუხი. ჩემთვის სრულიად გასაგებია თუ რისი შესრულება მომეთხოვება როგორც კვლევაში მონაწიელ პირს და ვადასტურებ რომ ჩემი მონაწიელობა კვლევაში არის სრულიად ნებაყოფლობითი. ამასთანავე ვადასტურებ რომ ჩემი ასაკი არის 18 წელს ზემოთ და წარმოვადგენ ბავშვის კანონიერ მეურვეს.

გამლევთ ნებართვას, იმისთვის რომ ჩემი ბავშვი გადაიღოს ვიდეო კამერით კვლევის პროცესში _____ (მშობლის ინიციალები)

კვლევაში მონაწილე პირის სახელი და გვარი

თარიღი

კვლევაში მონაწილე პირის ხელმოწერა

თარიღი

მოწმის ხელმოწერა

თარიღი



Appendix B: Child behavior recording data form

Child ID:
Observer ID:

Date:

Minute 1		M	T	E	V	V
				C	C	B
1						
2						
3						
4						
5						
6						
1						
2						
3						
4						
5						
6						

Minute 3		M	T	E	V	V
				C	C	B
1						
2						
3						
4						
5						
6						
1						
2						
3						
4						
5						
6						

Minute 5		M	T	E	V	V
				C	C	B
1						
2						
3						
4						
5						
6						
1						
2						
3						
4						
5						
6						

Minute 7		M	T	E	V	V
				C	C	B
1						
2						
3						
4						
5						
6						
1						
2						
3						
4						
5						
6						

minute 9		M	T	E	V	V
				C	C	B
1						
2						
3						
4						
5						
6						
1						
2						
3						
4						
5						
6						

Behavior definitions

MD - Mand child verbally

asks for

Desirable item

TC -Tact is naming an object

EC – Echoic is repeating what

Therapist says

VC- Vocalization is a sound spontaneously

Pronounced by child

VB – Verbalization is a word spontaneously pronounced

By the children

Appendix C: Therapist behavior recording data form

Therapist ID:

Observer ID:

Date:

	P C	D C	R C	E C	R F
Minute 1	1				
	2				
	3				
	4				
	5				
	6				
Minute 2	1				
	2				
	3				
	4				
	5				
	6				

	P C	D C	R C	E C	R F
Minute 3	1				
	2				
	3				
	4				
	5				
	6				
Minute 4	1				
	2				
	3				
	4				
	5				
	6				

	P C	D C	R C	E C	R F
Minute 5	1				
	2				
	3				
	4				
	5				
	6				
Minute 6	1				
	2				
	3				
	4				
	5				
	6				

		P C	D C	R C	E C	R F
Minute 7	1					
	2					
	3					
	4					
	5					
	6					
Minute 8	1					
	2					
	3					
	4					
	5					
	6					

10		P C	D C	R C	E C	R F
Minute	1					
	2					
	3					
	4					
	5					
	6					

Behavior definitions

PC - Positive Consequence

when

DC - Direct Command

RC - Repetition of Command

EC - Error Correction

RF – Reflection

Appendix D

Coaching comments evaluation checklist

Date _____

Therapist ID _____

Coaching comments	Tally each occurrence	Total number of comments
Labeled praise		
Unlabeled praise		
Direct command		
Descriptive label		
Higher order		

Appendix E

Social Validity questionnaire

Name-----

Date-----

Questions for therapists	agree	Somewhat agree	neutral	Somewhat disagree	disagree
	5	4	3	2	1
1.Using communications technology during the intervention was comfortable for me					
2.Coaching comments were easily heard and understood through the headphone					
3.I will recommend same communications technology for distance coaching if this study is replicated					
4. I will recommend similar training and coaching for therapists who work on verbal development of children with autism					
5. It is important to learn therapeutic skills such as to develop children's verbalizations					

6. I learned beneficial skills during the coaching					
7. I felt confident implementing these skills after I had been coached					
8. I will use these skills while working with other children in my future practice					

Social Validity questionnaire in original language

სოციალური ვალიდურობის შესაფასებელი კითხვარი

სახელი, გვარი :

თარიღი:

კითხვები თერაპევტისთვის	ვეთანხმები	მეტნაკლებად ვეთანხმები	თავს შევიკავებ	მეტნაკლებად არ ვეთანხმები	არ ვეთანხმები
	5	4	3	2	1
კომუნიკაციური ტექნოლოგიების გამოყენება ინტერვენციის პროცესში იყო კომფორტული ჩემთვის					
მწვრთნელის კომენტარები იყო ადვილად გასაგები ყურსასმენის საშუალებით					
რეკომენდაციას გავუწევ იგივე ტექნოლოგიების გამოყენებას, თუ ეს კვლევა					

განმეორებით ჩატარდება					
რეკომენდაციას გავუწევ მსგავსი ტრენინგისა და წვრთნის ჩატარებას იმ თერაპევტებისთვ ის, რომელბიც მუშაობენ ბავშვების ვერბალური უნარების განვითარებაზე					
ძალიან მნიშვნელოვანია იმ უნარების შემენა ბავშვების მეტყველების განვითარებისთვ ის, რაც მე კვლევის პროცესში შევიძინე					
შევიძინე ძალიან მნიშვნელოვანი უნარები და საჭირო უნარები					
წვრთნის შემდეგ მე თავს ვგრძნობდი თავაჯერებულად ბავშვთან მუშაობის პროცესში					
მე გამოვიყენებ ამ უნარებს					

მომავალში ბავშვებთან მუშაობის პროცესში					
---	--	--	--	--	--