



Coaching Parents to Conduct Trial-Based Functional Analysis via Telehealth

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Introduction. The procedure of trial-based functional analysis implemented by parents has the potential to determine the purpose of problematic behaviors. A telehealth strategy may be less expensive, it takes less time, and provides more families with access to treatments. As a result, it could be a good alternative for families as poor access to resources and knowledge may worsen problem behaviors. *Objectives.* The purpose of this study was to evaluate the ability of mothers to conduct a trial-based functional analysis at home, with training and coaching via telehealth. *Methodes.* Three mothers aged between 32 and 54 and their children between 18 and 26 years participated in the study. The study employed a multiple baseline design across behaviors to examine the effectiveness of behavioral skill training and coaching through telehealth on the accurate use of trial-based functional analysis conditions by mothers of children with developmental disabilities. *Results.* Results showed that mother participants conducted each condition of trial-based functional analysis with 100% accuracy. Moreover, the mothers had positive opinions regarding the study. *Conclusion.* In conclusion, this study provided support for parent involvement in the assessment of their children with developmental disabilities.

Keywords: trial-based functional analysis, problem behavior, developmental disabilities, telehealth, coaching

Introduction

Developmental disabilities (DD) is an umbrella term that covers a wide range of cognitive and/or physical disabilities, such as intellectual disability and autism spectrum disorder (ASD; American Association on Intellectual & Developmental Disabilities, 2020). Evidence to date indicates that approximately

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10%–20% of individuals with DD exhibit problem behaviors such as aggression or self-injury (Emerson et al., 2001; McClintock et al., 2003), with prevalence increasing into the teenage or adult years (Lundqvist, 2013). Lundqvist (2013) found that adult individuals with DD showed more demanding problem behaviors than those in younger age groups. Function-based interventions are a commonly used method to reduce or eliminate problem behaviors, with studies supporting their effectiveness for adults with ASD (Steinbrenner et al., 2020; Wong et al., 2015). These interventions consist of identifying the function of a problem behavior and delivering an intervention based on that function (Tiger et al., 2008). Functional behavioral assessment is a collection of strategies (i.e., functional analysis) to determine the underlying function(s) of a problem behavior through identifying environmental conditions that are associated with the occurrence and nonoccurrence of the problem behavior (Gresham et al., 2001).

Functional analysis is the experimental manipulation of environmental events to assess and identify reinforcing contingencies that maintain the problem behavior (Gresham et al., 2001). Although the traditional functional analysis has been widely used and replicated across a lot of studies (Saini et al., 2020), trial-based functional analysis (TBFA) is a promising and increasingly common procedure to determine the function of problem behaviors and is recommended for use with natural implementers (Gerow et al., 2019; Rispoli et al., 2014). The primary difference between traditional functional analyses and TBFA is that the former is session-based, and the latter is trial-based. In other words, traditional functional analyses involve repeated series of sessions up to 15 minutes in which the problem behavior may occur multiple times. On the contrary, TBFA involves single opportunity for the problem behavior to occur per trial segment (control and test). Another difference is the context in which both methods are conducted. That is, sessions are conducted one after another in a structured setting for a few hours in traditional functional analyses. In TBFA, on the other hand, trials are embedded in naturally occurring activities when the opportunities arise in structured or unstructured settings such as homes (Bloom et al., 2013). Thus, TBFA shows promise as an alternative to traditional functional analysis that requires substantial time, resources, and training to complete (Rispoli et al., 2014).

A large number of studies on TBFA have been conducted since the first study on TBFA by Sigafoos and Sagers in 1995 (e.g., Bloom et al., 2011; Flynn & Lo, 2016; Lambert et al., 2012; Prykanowski, 2018). In their study, the researchers used 1–2 minute trial segments in natural settings to identify the function of problem behaviors of two students. The researchers provided motivational operations (attention, tangible, and task trials) during the control condition and did not provide them during the test condition. Using these procedures, the researchers were able to identify the function of problem

behaviors (Sigafoos & Sagers, 1995). Also, there are studies comparing and validating the results from TBFA to those from traditional functional analyses (e.g., Bloom et al., 2011; Rispoli et al., 2013; Rispoli et al., 2016). For example, Bloom et al. (2011) found a full correspondence between TBFA and traditional functional analyses for six out of 10 participants and a partial correspondence for one participant. They also observed correspondence for two participants when they conducted modified trials. Some studies also evaluated the accuracy of results from TBFA by matching them to treatment and validating the results (e.g., Flynn & Lo, 2016; LeJeune et al., 2019). For example, Flynn and Lo (2016) trained three teachers to conduct TBFA and differential reinforcement of alternative behavior with their students in their classrooms. Results showed that all teachers were able to conduct TBFA with a high level of procedural fidelity. The problem behavior decreased, and the replacement behavior increased across six student participants.

Despite this versatility of studies with different purposes for investigating TBFA methodology, TBFA have been mostly implemented by special education teachers or service providers in classrooms or self-contained settings (Prykanowski, 2018; Rispoli et al., 2014). There are only a handful of studies in which parents were trained to implement TBFA. Three mothers were trained to conduct TBFA by giving them written and verbal instructions about the procedures and coaching through verbal comments during the implementation of TBFA in the study of Gerow et al. (2019). Based on the results of the TBFA, the researchers taught the parents to implement functional communication training to decrease their child's problem behavior and increase independent communication. The parent-implemented TBFA successfully identified functions of problem behaviors. The parents also implemented the treatment with high fidelity and rated the TBFA as socially valid. Standish et al. (2021) used a partially automated training package to train six caregivers to utilize a TBFA, interpret the outcomes of TBFA, and manage TBFA data. The researchers used a partially automated PowerPoint presentation that included instructions, modeling, and multiple-choice questions about the TBFA. Following training, the caregivers rehearsed conducting TBFA as well as analyzing, interpreting, and managing TBFA data. All participants successfully demonstrated proficiency in the aforementioned skills in both studies, providing evidence that parents are able to perform TBFA with a high level of fidelity with in-person support. To our knowledge, only Davis et al. (2022) evaluated the effects of remote support of parents to implement TBFA. The researchers trained and coached three mothers of children with ASD to conduct TBFA and implement functional communication training in their homes utilizing telehealth coaching, replicating the findings from previous research with in-person coaching (Gerow et al., 2019; Standish et al., 2021).

Telehealth refers to providing information, diagnosis, or educational services at a distance using information and communication technologies (Nickelson, 1998). Telehealth can be an effective way to remotely deliver treatment for problem behaviors of individuals with DD in home settings (Suess et al., 2014). A telehealth model may reduce costs, appear to be time-efficient, and increase intervention access among families (Saral & Olcay, 2021). Thus, it may be a viable option for practitioners and families as limited access to expertise and services may worsen problem behaviors (Carnett et al., 2021). In fact, Lindgren et al. (2016) found that three service delivery models (i.e., in-home therapy, clinic-based telehealth, and home-based telehealth) demonstrated similar reductions in problem behaviors of 94 participants with DD by training parents to conduct functional analysis and functional communication training. These support the potential for utilizing telehealth to train, coach, or support families of individuals with DD. This current study expands upon this line of research by training and coaching parents via telehealth to conduct a TBFA.

The purpose of the present study was to evaluate the effectiveness of training and coaching via telehealth on the accurate implementation of the TBFA by the mothers of adults with DD in home setting. Thus, the following research questions guided the study:

Research Question 1: Is remote training and coaching through telehealth effective in implementing the TBFA by mothers in identifying the function of the child's problem behavior?

Research Question 2: Do mothers maintain implementing the TBFA one and three weeks after the conclusion of the intervention?

Research Question 3: What are the parents' opinions about the study?

Method

Participants

The study was carried out with three mothers and their adult children. Their children had a diagnosis of intellectual disability or ASD (referred to as DD hereafter). The mothers asked for support from one of the researchers as their children's problem behaviors deteriorated during the COVID-19 pandemic lockdown. The researchers met the parents through Zoom and informed them about the study goals. Written and verbal consent for participation was obtained from all mothers. The inclusion criteria for the individuals with DD were (a) having a doctor-certified developmental disability diagnosis, including intellectual disability and/or ASD, (b) being aged 18 years or over, and (c) exhibiting problem behaviors. All procedures performed in this study involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Thus, all mothers and their children with DD who were volunteers and met the inclusion criteria were included in the study.

Table 1 shows the demographic characteristics of the mothers and their adult children with DD.

Table 1

Demographics of mothers and participants

<i>Mothers</i>	<i>Mothers</i>		<i>Participants</i>	<i>Participants</i>		
	<i>Age</i>	<i>Education Level</i>		<i>Age</i>	<i>Diagnosis</i>	<i>Gender</i>
Mother 1	44	Primary school	Participant 1	26	Intellectual disability	Male
Mother 2	52	Bachelors' degree	Participant 2	24	ASD	Male
Mother 3	34	Primary school	Participant 3	18	ASD	Male

Mother 1 was 44 years old, a primary school graduate, and a boutique owner. Mother 2 was 52 years old and had a bachelor's degree in radiology. She was not working when the study was undertaken. Mother 3 was 34 years old, a primary school graduate, and worked as a cleaner. Participant 1 was 26 years old and had an intellectual disability. He received supportive education for two hours a week. Participant 1 was able to follow three- to four-word instructions, maintain conversations, and exhibit independent living skills. Participant 2 was 24 years old and had a diagnosis of ASD. He received education for two hours a week. Participant 2 was able to follow two-word instructions, answer simple questions, and required support for daily living skills. Participant 3 was 18 years old and had a diagnosis of ASD. He was able to follow three-word task directions, maintain conversation, and exhibit daily life skills. All individuals were special education high school graduates, and they were unemployed.

Researchers and the Observer. The first author served as a coach in the study, conducted all sessions, and collected data. The first and the third authors had a Ph.D. in special education, while the second author had an MA in applied behavior analysis for autism and continued his Ph.D. in special education. All researchers were experienced with conducting functional analysis and single-subject research studies. One graduate student in special education collected the reliability data. The observer was experienced with teaching individuals with mild to severe disabilities, conducting functional analysis, and behavioral skills training (BST).

Settings and Materials

All sessions were conducted on Zoom Video Communications, Inc. (Zoom; www.zoom.us), a videoconferencing platform. The coach and the mothers were in different locations at their homes. The coach participated in the sessions through a personal computer to video record the sessions. The mothers participated in all sessions at a quiet and bright place through their mobile phones, which were put at a high place, allowing the coach to see the related part of the room. The researchers used PowerPoint slide presentations to train mothers in the TBFA. In addition, the mothers used highly-, moderately-, and non-preferred items by their children. These items were determined by interviewing each mother. Highly-preferred items were a cake for Participant 1,

mineral water for Participant 2, and a cell phone for Participant 3, which were used in tangible conditions. Other items for escape conditions (e.g., a vacuum cleaner) were located where mothers implemented the TBFA conditions.

Experimental Design

A multiple baseline design across behaviors was used to demonstrate the effectiveness of remote training and coaching to teach mothers to implement the TBFA. Functional relation was established when the dependent variable increased after the independent variable was implemented in a time-lagged manner (Tekin-Iftar et al., 2017).

Dependent and independent variables

The dependent variable of the study was mothers' implementation of the TBFA conditions (attention, escape, tangible, and ignore) at 100% accuracy. The researchers adopted the steps of TBFA conditions recommended by Sigafoos & Sagers (1995). The mothers followed the steps provided in Table 2. The independent variable of the study was remote training and coaching through telehealth.

General procedure

Before conducting experimental sessions, the coach arranged a separate meeting with each mother. In the meeting, the coach interviewed the mother about the child's problem behaviors and highly-, moderately-, and non-preferred items and/or activities. Based on the mother's comments, the coach operationally defined the problem behavior. Then, the mother was asked to list and rank the preferred and nonpreferred items and/or activities by her child on a paper. The operational definitions of the problem behaviors and preferred/nonpreferred items and activities were validated by asking the sibling of each participant with DD.

Individualized operational definitions were developed for each child's topography of problem behavior. Problem behavior was defined as swearing (expletives said in response to someone's presence, politicians in particular) for Participant 1, spitting for Participant 2 (release of saliva from the mouth with force), and asking the same question over and over (until getting the answer and/or the reaction they expected) for Participant 3.

After defining problem behaviors, the experimental sessions (baseline, intervention, and maintenance sessions) were initiated. The researchers conducted the baseline and intervention sessions twice a day when the mothers were available. Each experimental session was conducted individually with the mothers.

Table 2
Target steps for mothers to follow on each condition

Test	Ignore	Escape	Tangible	Attention
	<ol style="list-style-type: none"> 1. Remove any distractions from the environment, cover it up if you can't. 2. Sit two meters away from your child. 	<ol style="list-style-type: none"> 1. Remove all distracting objects from the environment. 2. Give your child a task or create a situation that they don't like. 	<ol style="list-style-type: none"> 1. Remove all distracting objects from the environment. 2. Put a favorite food/object in a transparent jar. Lift the food in the jar or a preferred object out of reach. 3. Set your stopwatch to 60 seconds. 4. Sit next to your child and start the stopwatch. 5. Answer your child's questions, chat with him. 	<ol style="list-style-type: none"> 1. Remove all distracting objects from the environment. 2. Set your stopwatch to 60 seconds. 3. Seat your child at the table and place a medium- preferred object in front of him. 4. Turn your back on the child, pick up an object that you can deal with, such as a book or knitting. 5. Ignore all of your child's behavior except problem behavior. 6. If your child exhibits problem behavior, stop the stopwatch. Stroke your child's head and ask, "What do you want?"
	<ol style="list-style-type: none"> 3. Start a 120-second stopwatch. 4. Don't make eye contact with your child until the deadline and ignore all their behaviors (including problem behaviors). 5. Only if your child asks you a question, answer the question without making eye contact on the third repetition. 	<ol style="list-style-type: none"> 3. Start a 60-second stopwatch as soon as you give the task. 4. If your child leaves the task, say, "Go ahead!" or take his hand and have them continue. 5. If your child exhibits problem behavior, stop the stopwatch and remove objects related to the task or situation (e.g, a vacuum cleaner) from the environment. 6. If the problem behavior does not arise, wait for the time to complete. 	<ol style="list-style-type: none"> 3. Set your stopwatch to 60 seconds. 4. Sit next to your child and start the stopwatch. 5. Answer your child's questions, chat with him. 	<ol style="list-style-type: none"> 3. Seat your child at the table and place a medium- preferred object in front of him. 4. Turn your back on the child, pick up an object that you can deal with, such as a book or knitting. 5. Ignore all of your child's behavior except problem behavior. 6. If your child exhibits problem behavior, stop the stopwatch. Stroke your child's head and ask, "What do you want?"

	Ignore	Escape	Tangible	Attention
			<p>7. If problem behavior occurs, reset the stopwatch.</p> <p>8. If problem behavior does not occur, wait for the time to complete.</p>	
Control	<p>After removing the object from the task from the previous session, sit next to your child and restart the 60-second stopwatch.</p> <p>Do not look into your child's eyes during the time and do not make any demands.</p>	<p>When the stopwatch is reset (when time is over or problem behavior occurs), give food/drink or an object to your child.</p> <p>2. Restart the 0-second stopwatch, and your child will retain the food or object during this time.</p> <p>3. When your child asks a question, answer their question.</p>	<p>1. Wait 10 seconds after finishing the test session.</p> <p>2. Restart the stopwatch set to 60 seconds.</p> <p>3. Stroke your child's head for 60 seconds, chat with him/her.</p>	

Baseline sessions

The coach asked the mother to conduct the TBFA conditions, which were randomized, to determine their performance in using TBFA. Baseline sessions were conducted similarly to the study of Tekin-Iftar and colleagues (2017). The researcher asked the mothers to use TBFA conditions (e.g., “Please implement escape conditions.”). Correct responses resulted in verbal reinforcement (e.g., “You are doing great!”), while incorrect or no responses were ignored. The coach waited 4–5 seconds and asked the mother to conduct the next condition. Data were collected using a plus (+) for the correct steps and a minus (-) for incorrect or no response within a 5-second interval. Finally, the coach calculated the percentage of correct responses for each condition and plotted the data on graphs (see Figures 1, 2, and 3). The researchers conducted baseline sessions three times a week and two trials per day and collected at least five baseline data for each condition. Baseline sessions lasted 15 seconds on average (range = 7 s – 42 s).

Remote parent training sessions

Parent training on the TBFA was conducted on a one-on-one basis, utilizing behavioral skill training (BST) (Kiyak & Tekin-Iftar, 2022; Tunc-Paftali & TekinIftar, 2021). BST consisted of (a) verbal instruction, (b) video modeling (it included the third author as an implementer and a teenage female model as a daughter), (c) role-playing, and (d) feedback. First, the coach provided each mother with general information regarding problem behaviors, behavioral functions, functional analysis, and the implementation steps of a TBFA condition using PowerPoint slides. Verbal instruction was followed by video modeling about that condition. Next, the coach acted as an individual with DD and exhibited the problem behavior that was targeted for the child of that mother, while the mother conducted the targeted TBFA condition. After the rehearsal, the coach provided the mother with feedback on her performance until she reached 100% accuracy in implementing each TBFA condition. Each BST session lasted approximately 30 minutes.

When the mothers reached 100% accuracy in implementing all TBFA conditions during training, they conducted TBFA conditions with their children. The mothers conducted the TBFA conditions three times a week and two trials per day. The coach assessed mothers’ accuracy of implementation using a checklist that included the steps in Table 2 while they were implementing TBFA conditions. Data were collected using a plus (+) for the correct steps and a minus (-) for incorrect or no response within a 5-second interval.

Coaching through Telehealth

The mothers video recorded each TBFA session and then sent them to the coach via WhatsApp, a messaging app. The coach viewed the videos and assessed the mother’s accuracy of implementation. The coach first congratulated the mothers for

their implementation. The coach reinforced the correct steps and provided corrective feedback for incorrect steps. Then, the coach briefly explained the points that needed special attention in the next session and answered the mother's questions, if any. Finally, the coach thanked the mother for her collaboration. The criterion for implementing each TBFA condition was 100% accuracy across three consecutive sessions.

Maintenance

Maintenance sessions occurred one week and three weeks after each mother mastered each condition. The coach asked the mothers to utilize the target condition in maintenance sessions. The coach thanked the mothers for their cooperation.

Differential reinforcement instruction session

Because it would not be ethical to terminate the study without instructing or describing to the mothers what to do for their child's problem behavior, the researchers decided to provide them with instruction about differential reinforcement of other behaviors (DRO). The researchers agreed on instructing mothers on DRO as it was a practice that matched the behavioral function of each participant with DD. Since the participants' behaviors were socially inappropriate, that should not occur, which is why we chose DRO (Alberto & Troutman, 2013). The coach delivered instruction to the mothers after the mothers met the mastery criterion in implementing the TBFA, and behavioral functions were identified. This session was conducted on a one-on-one basis, utilizing PowerPoint slide presentations regarding the definition, implementation steps, and important points in the implementation of DRO. DRO instruction session was conducted in one session of about 35–40 minutes for each mother via Zoom™. Finally, the coach answered the mothers' questions and then ended the session. The researchers did not collect data on the mothers' use of differential reinforcement of other behaviors.

Interobserver Agreement and Procedural Fidelity

Reliability data was collected by a second observer who had a BA and MA in special education and conducted TBFA for his thesis for all parent training sessions and 30% of TBFA conditions selected randomly across each mother. The researchers calculated interobserver agreement (IOA) data using the total agreement method: dividing the number of agreements by the number of agreements and disagreements and multiplying by 100 as used in the methodology of Axe et al. (2021). The mean IOA for baseline sessions was 100% across each condition and participant. During the TBFA, the mean IOA was 100% for Mother 1 and Mother 3 across conditions. It was also 100% for attention, tangible, and ignore conditions and 92.85% (85.7%–100%) for escape conditions for Mother 2. The researchers also calculated IOA for the occurrence of participants' problem behaviors. The mean IOA was 100% across each condition for each participant.

The observer collected procedural fidelity (PF) data for 100% of the video records of parent training with the following quotient: the number of observed coach behaviors divided by the number of preplanned coach behaviors and multiplied by 100 (Billingsley et al., 1980; Tekin-Iftar & Kırcaali-Iftar, 2013). The mean PF was 100% for parent training. Furthermore, the observer collected reliability data for 30% of coaching sessions selected randomly and provided at the end of each session by using the same formula. The mean PF for coaching sessions was 100% across the sessions for each participant, except for the tangible condition for Mother 2, which was 93.75% (87.5%–100%).

Social Validity

The researchers aimed to determine participating mothers' opinions regarding telehealth, the TBFA, and the implementation process. The researchers developed a question form that included seven open-ended questions to assess the social validity of the study by examining previous studies (e.g., Kiyak & Tekin-Iftar; 2022; Saral & Olcay, 2021 Tekin-Iftar et al., 2017; Tunc-Paftali & Tekin-Iftar; 2021). The questions were as follows: (a) You have acquired basic information on how to identify the functions of your children's problem behaviors through telehealth. Do you think it is important that you obtain this information? Why?; (b) Do you think that telehealth is an effective way? Why?; (c) Would you like to attend training on different subjects through telehealth? Why?; (d) Do you think the results of this study are important for you and your child? Why?; (e) What are your favorite features of the study?; (f) What are the features of the study that you dislike the most?; (g) Would you recommend that other families attend a similar training through telehealth? Why?

The coach conducted semi-structured interviews with mothers in one session via Zoom. The interviews with each mother lasted approximately seven minutes. The social validity data were descriptively analyzed.

Results

Effectiveness of Parent Training and Coaching on the Use of TBFA

Figures 1 to 4 display the effectiveness of parent training and telehealth-based coaching on mothers' use of the TBFA conditions. As seen in Figure 1, Mother 1 immediately reached 100% correct use of steps and met the mastery criterion in no more than six sessions across the conditions of TBFA. She maintained acquired skills one week and three weeks after the intervention at 100%, except for the second session in tangible conditions (80%).

Figure 1

The percentage of correct responses of Mother 1 during baseline, intervention, and maintenance sessions

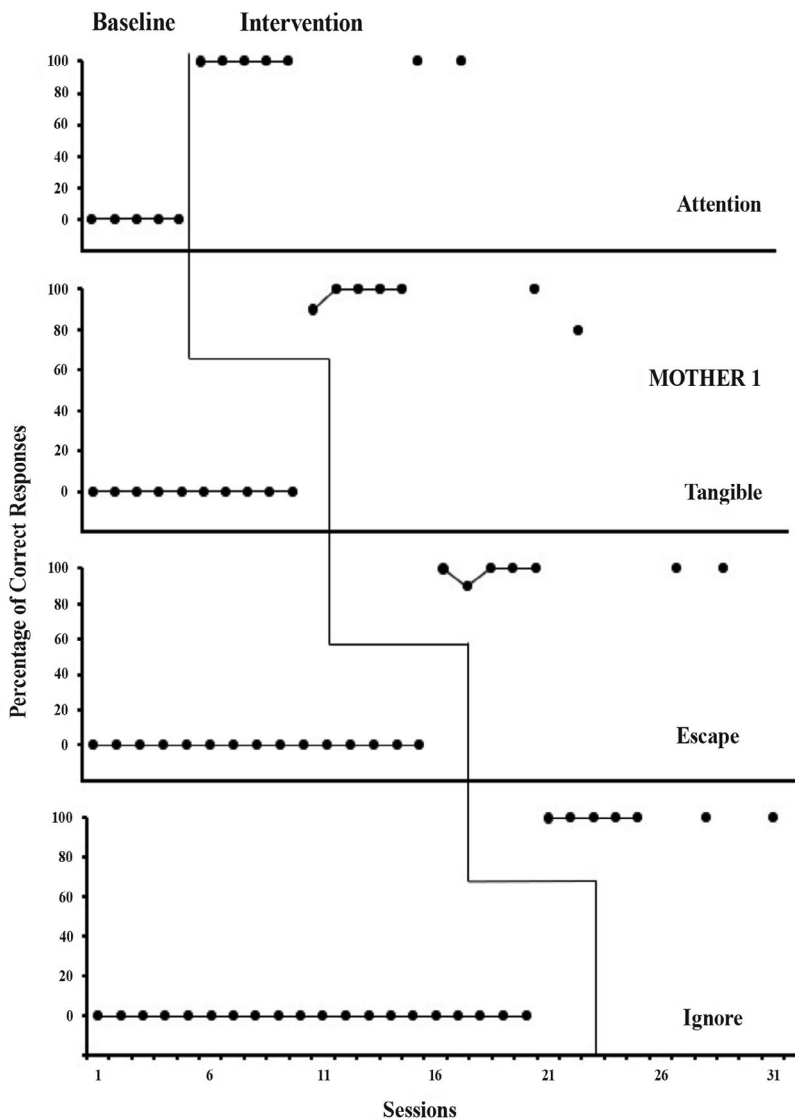


Figure 2 shows the accurate use of trial-based functional analysis of Mother 2 during baseline, intervention, and maintenance sessions across conditions. She immediately reached 100% accuracy in using the TBFA steps in attention and ignore conditions. In tangible and escape conditions, she reached 100% accuracy in the second session. She met the mastery criterion in three consecutive sessions

in all conditions. She maintained using the TBFA steps in all conditions with 100% accuracy one week and three weeks after the intervention.

Figure 2

The percentage of correct responses of Mother 2 during baseline, intervention, and maintenance sessions

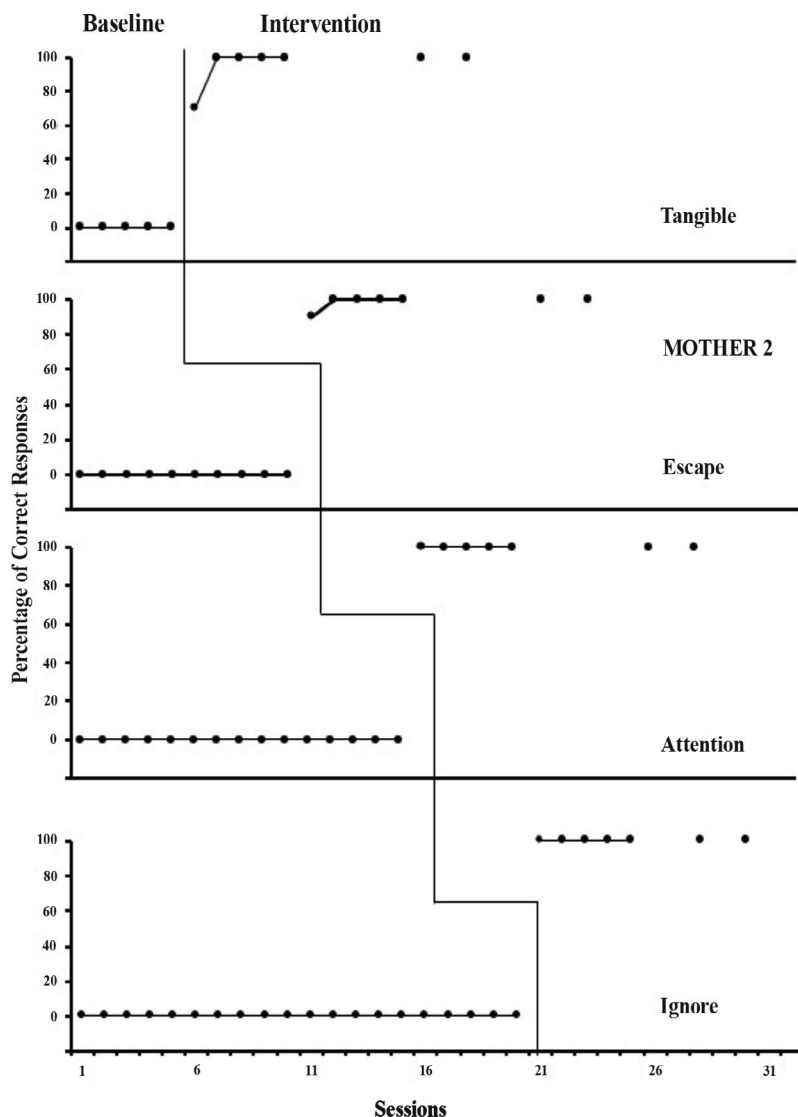
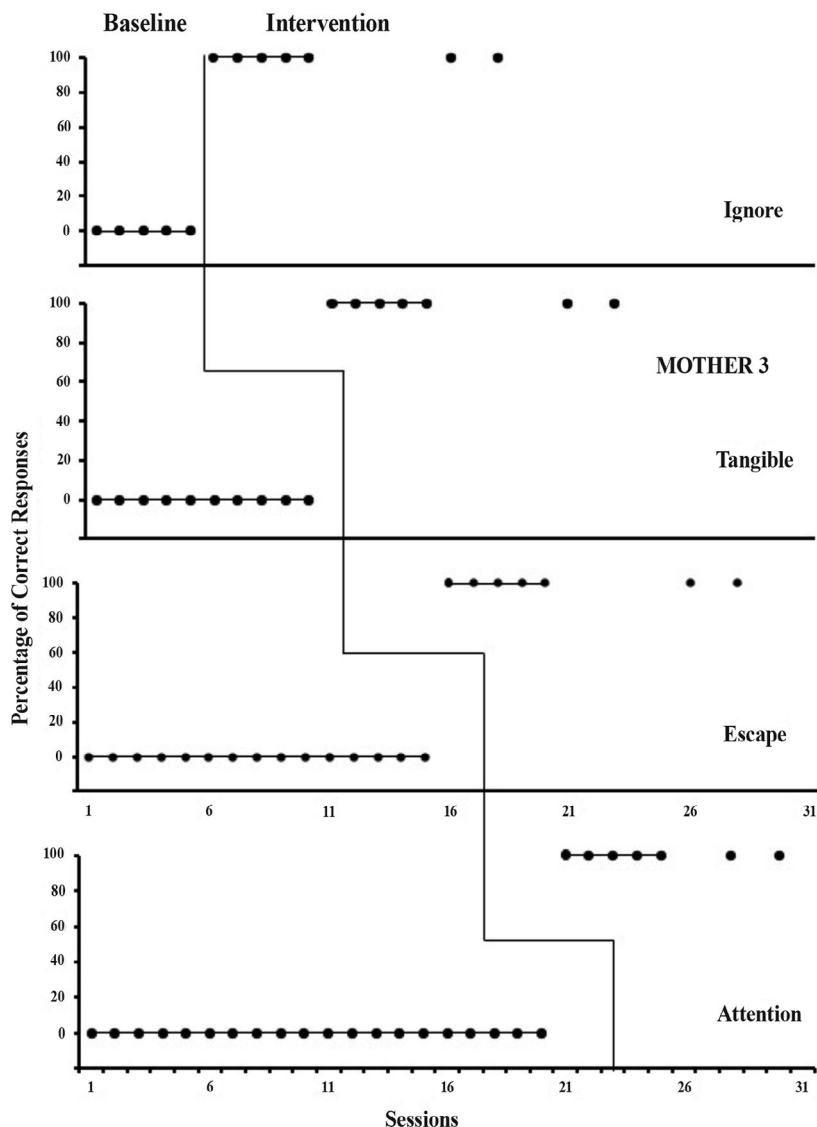


Figure 3 displays the accurate use of TBFA for Mother 3 during baseline, intervention, and maintenance sessions across conditions. She immediately reached 100% accuracy in using the TBFA steps in all conditions. She met the

mastery criterion in three consecutive sessions in all conditions. She maintained using the TBFA steps in all conditions with 100% accuracy one week and three weeks after the intervention.

Figure 3

The percentage of correct responses of Mother 3 during baseline, intervention, and maintenance sessions



Functional Analysis Findings

The researchers aimed to show functional analysis results of the participants' problem behaviors with a bar graph. Figure 4 shows Participant 1's functions of problem behavior. As seen in Figure 4, Participant 1's problem behaviors only existed in escape condition sessions. He engaged in problem behavior in both test and control sessions.

Figure 4

Functional analysis results of Participant 1

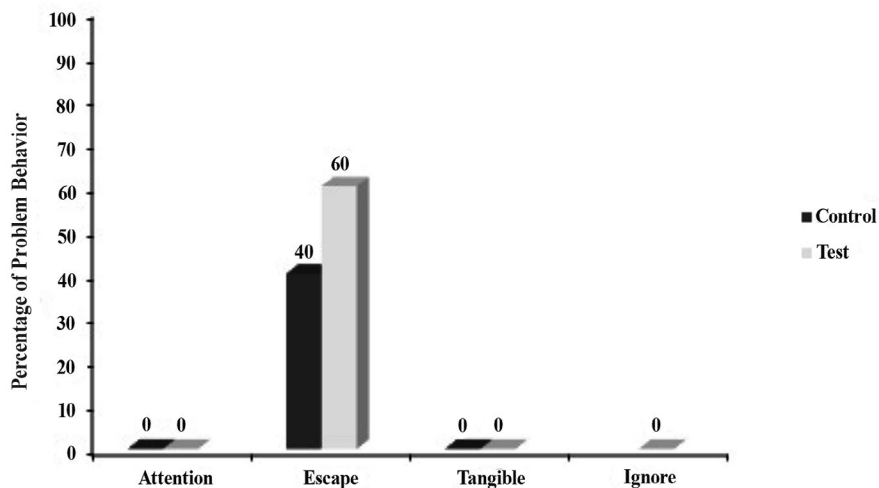


Figure 5 shows the functional analysis results of Participant 2. He exhibited problem behavior in ignore conditions the most. However, he engaged in problem behavior attention, escape, and tangible conditions (both in test and control). He engaged six times more in ignore conditions.

Figure 5

Functional analysis results of Participant 2

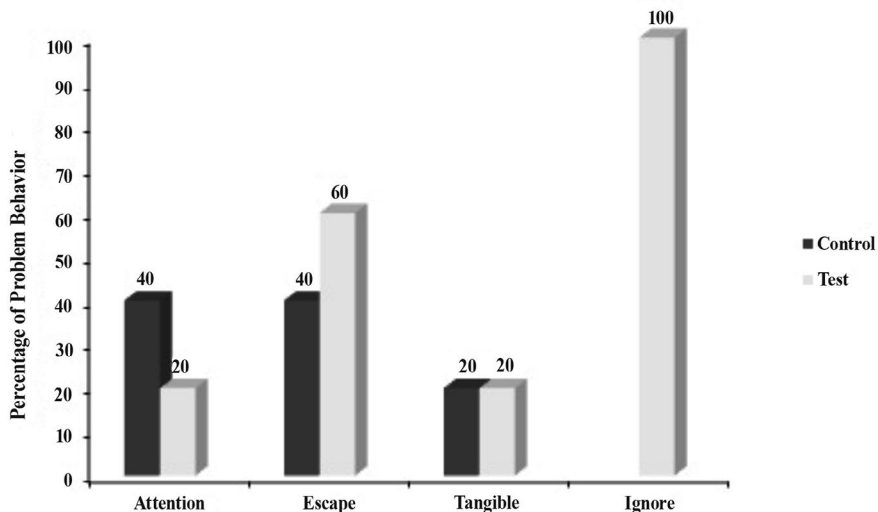
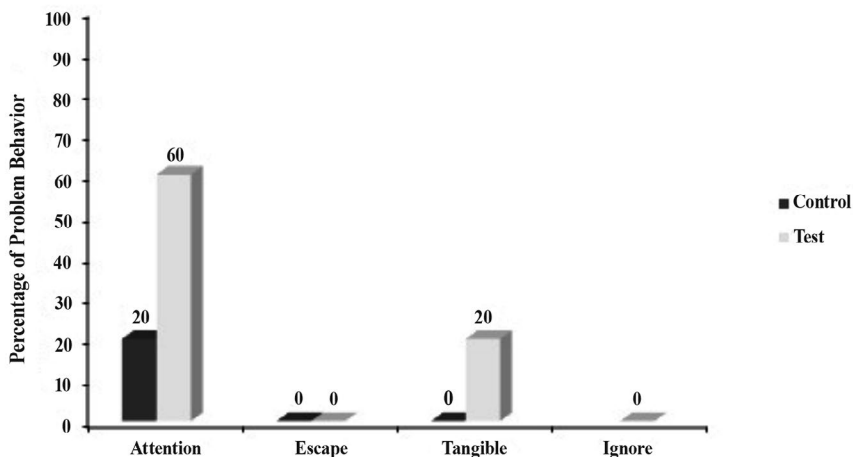


Figure 6 depicts the functional analysis results of Participant 3. He engaged in problem behavior in attention conditions both in test and control sessions. He only exhibited problem behavior once in the second session of tangible conditions.

Figure 6

Functional analysis results of Participant 3



Social Validity Findings

All three participating mothers said that the study was important for them to learn the source of their children's problem behavior. Only Mother 3 indicated that functional analysis might be more beneficial for those who have children in early childhood whose problem behaviors were not automatically reinforced, which they thought must not be counted as problems. All mothers stated that telehealth was a good way for them to learn new strategies to utilize with their children because of cost-efficiency and flexibility. However, Mother 1 and Mother 3 would prefer face-to-face training. The researchers asked the mothers the points that they appreciated and did not appreciate in the study. Mother 1 expressed that their favorite part of the study was the coach's approach. Similarly, Mother 3 said that learning from an expert was a great opportunity. Additionally, all mothers mentioned that they realized they could not ignore their children's problem behaviors properly until they participated in the study. All mothers pointed out that there was not any point that they did not appreciate. All mothers also stated that they would like to attend new training that they require to support their children via telehealth, and they recommended telehealth-based coaching to other parents who have children with developmental disabilities to acquire new strategies.

Discussion

The purpose of the current study was to evaluate parent-implemented TBFA with training and coaching via telehealth. Training and coaching via telehealth were effective in teaching mothers to conduct a TBFA with high accuracy. The TBFA results showed information about the function of problem behavior for each participant. The TBFA indicated the function of problem behavior for each participant was different. Participant 1 demonstrated problem behavior in escape conditions, and Participant 3 mostly engaged in problem behavior in attention conditions. However, Participant 2 engaged in problem behaviors almost in each condition, though it was highest in ignore conditions since his problem behavior was automatically reinforced. The researchers also evaluated the parents' opinions of the study. All parents viewed the training, coaching, and the TBFA as socially valid.

Many families of children with DD face significant barriers to accessing trained specialists or special education services due to work schedules, distance, or cost (Talbot et al., 2022). The existing literature is promising in that remote training and coaching are effective and feasible approaches to address these barriers (Lerman et al., 2020). In this study, for example, the mothers quickly learned how to conduct a TBFA although they had no background in conducting an assessment methodology, which validates the potential benefits of the telehealth approach.

The results of the current study extend those in previous research, suggesting that parents of children with DD can conduct a TBFA in their home (Davis et al., 2022; Gerow et al., 2019). During conversations before the initiation of the study, all parents remarked that their children were exhibiting problem behaviors too often because of the Pandemic. This shows us that the lockdown deteriorated the problem behaviors of the participant adults with ASD and that their parents needed assistance. In this study, the mothers conducted the TBFA in their homes during ongoing routines. This not only helped promote the maintenance of mothers' newly acquired skills, but also enhanced the ecological validity of the study in that the children with DD were exposed to specific antecedents and consequences within the context of natural agents, settings, and activities.

According to a systematic review by Rispoli et al. (2014), a total of 12 adults with DD participated in a TBFA investigation in only three studies – one adult in Bloom et al., 2011, nine in Lambert et al., 2013, and two in LaRue et al., 2010. Furthermore, two studies investigated the ability of parents of children with ASD who were remotely trained and coached to conduct a TBFA, but the child participants were between 4–9 (Davis et al., 2022) and 3,5–7 years old (Gerow et al., 2019). Thus, one unique aspect of the study is that the researchers investigated the ability of mothers to conduct a TBFA at home, with training and coaching through telehealth for their children with DD who were 18 years or over.

The results are also comparable to previous findings by showing that the function of problem behaviors can be identified through the TBFA (e.g., Haspel & Hollo, 2021). Future research may evaluate training parents of children with DD in other functional assessment methodologies, such as brief functional analysis. However, it is important to note that Participant 1 engaged in problem behavior in the control segments of the escape condition. One hypothesis is that a possible carryover effect occurred from the test segment. On the other hand, Participant 1 may not have discriminated contingencies associated with each condition because he engaged in problem behavior during the initial trials of the control segments.

There are several limitations to this study worth noting. The researchers taught the mothers how to use DRO for their children after identifying the function of the problem behavior. Although this is important from an ethical standpoint for the participating mothers, the researchers did not collect data on their implementation or the effect of the treatment on problem behaviors. Thus, the absence of monitoring the effects of differential reinforcement is a limitation from the aspect of validating the results on the TBFA. Furthermore, two mothers indicated they preferred in-person training and coaching, which decreases the social validity of the study. Future research may consider which

factors (e.g., better Internet skills) are important for parents to be willing to receive interventions delivered via telehealth or in person.

Conclusion

In conclusion, the growing body of the literature and the results of this study provide support for parent involvement in the assessment of problem behaviors for their children with DD. Furthermore, the use of telehealth can be an effective service-delivery model for practitioners and families by reducing barriers. Based on the results, future research should continue to use telehealth to provide training and coaching to parents of children with DD.

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Obučavanje roditelja da sprovede probno zasnovanu funkcionalnu analizu putem telezdravstva

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Uvod: Procedura funkcionalne analize zasnovane na ispitivanju koju sprovedu roditelji ima potencijal za određivanje svrhe problematičnog ponašanja. Strategija telezdravstva može biti jeftinija, oduzima manje vremena i pruža većem broju porodica pristup tretmanima. Kao rezultat toga je dobra alternativa za porodice jer loš pristup resursima i znanju može pogoršati problematično ponašanje. *Cilj:* Svrha ove studije bila je da se proceni sposobnost majki da sprovedu funkcionalnu analizu zasnovanu na ispitivanju kod kuće, uz obuku i koučing putem telezdravstva. *Metode:* U istraživanju su učestvovalе tri majke starosti između 32 i 54 godine i njihova deca između 18 i 26 godina. Studija je koristila višestruki osnovni dizajn za različita ponašanja kako bi ispitala efikasnost treninga veština ponašanja i podučavanja putem telezdravstva o tačnoj upotrebi uslova funkcionalne analize zasnovane na ispitivanju od strane majki dece sa smetnjama u razvoju. *Rezultati:* Rezultati su pokazali da su majke učesnice sprovele svaki uslov funkcionalne analize zasnovane na ispitivanju sa 100% tačnošću. Štaviše, majke su imale pozitivna mišljenja o studiji. *Zaključak:* U zaključku, ova studija je pružila podršku uključivanju roditelja u procenu njihove dece sa smetnjama u razvoju.

Cljučne reči: probno zasnovana funkcionalna analiza, problematično ponašanje, smetnje u razvoju, telehealth, coaching

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