**Telehealth for Family Guidance:
Acceptance and Commitment Therapy, Parent-Focused Preference Assessment, and
Activity Based Instruction for the Support of Children with Autism Spectrum Disorder
and their Families**

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Abstract

A five-stage protocol was used to support board certified behavior analysts providing telehealth support for children with autism spectrum disorder and their families. Stage 1 of the protocol involves two acceptance and commitment therapy exercises. Specifically, the Valued Living Questionnaire is used to identify a family member's values, and the Bull's-Eye Values Survey is employed to determine the extent to which a family member is living in accordance with stated values. Stage 2 of the protocol involves administering an adult version of the Meaningful Activity Participation Assessment (MAPA) to identify preferred activities of parents of a child with autism spectrum disorder. During Stage 3 of the protocol, the goals and objectives of a child with autism spectrum disorder are yoked with the preferred activities of a family member in order to promote child–parent engagement. Stage 4 of the protocol is focused on parent-implemented interventions, and Stage 5 of the protocol is designed as a primer for comprehensive support within an acceptance and commitment therapy model. The five-stage protocol provides guidelines for board certified behavior analysts interested in structuring telehealth sessions and optimizing engagement between a family member and a child with autism spectrum disorder.

Keywords: family guidance, stage-based intervention, ACT, activity-based instruction, preference assessment

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Editor's Note

This manuscript is being published on an expedited basis, as part of a series of emergency publications designed to help practitioners of applied behavior analysis take immediate action to adjust to and mitigate the COVID-19 crisis. This article was submitted on 4/20/20 and received final acceptance on 05/05/20. The journal would like to especially thank Dr. Daniel J. Moran for his expeditious review of the manuscript. The views and strategies suggested by the articles in this series do not represent the positions of the Association for Behavior Analysis, International or Springer Nature.

Introduction

As COVID-19 continues to spread across the United States and face-to-face behavioral health services become more impractical, providers of applied behavior analysis (ABA) services have turned to telehealth to avoid disruption of federally mandated coverage for children with autism spectrum disorder (ASD). The recent telehealth initiative has been enabled by commercial- and government-sponsored health insurance companies agreeing to fund telehealth services to support children and families. Telehealth technology is a tool to support the navigation of barriers currently facing ABA providers; however, substantial challenges (e.g., how to structure a credible telehealth session) need to be overcome for telehealth to achieve its full potential within the field of applied behavior analysis. In consequence, the development of guidelines and standards for supporting families with a child diagnosed with ASD is an important and valuable process to safeguard effective and responsible delivery of quality behavior analytic services.

Families sequestered due to shelter-in-place orders are currently living under conditions involving health risk, economic strain, family and friend separation, psychological vulnerability, and a complete disruption of coveted rituals and routines. Undoubtedly, COVID-19 has altered how families live, and what they value. Unexpectedly, for many families several unpleasant truths have emerged during the pandemic: (1) there is uncertainty about how to structure each day for their typically developing children, (2) there is lack of clarity regarding how to support their child with ASD while faced with insuperable barriers to education and therapy sites,

and (3) discomfort created by economic strain, disrupted living, and lack of daily structure have put them at risk for collective panic and emotional dysregulation. In this manuscript, we provide a stage-based protocol to support families affected by the COVID-19 pandemic.

An overview of a five-stage protocol to support board certified behavior analysts (BCBAs) and registered behavior technicians providing telehealth services to families is offered. Specifically, a general overview of five stages of an intervention is provided, including: acceptance and commitment therapy (ACT), parent-focused preference assessment, parent-implemented intervention, and parent-led activity based instruction (ABI). The application of each component of the stage-based model is reviewed. Moreover, following a brief description of each component, guidelines for the implementation of the component are provided. Finally, an overview of a minimum clinical dataset to evaluate the efficacy of outcomes is presented.

Acceptance and Commitment Therapy

According to Harris (2011), ACT is a mindfulness-based therapy used to support behavior change that “challenges the ground rules of most Western psychology. It utilizes an eclectic mix of metaphor, paradox, and mindfulness skills, along with a wide range of experiential exercises and values-guided behavioral interventions” (p. 2). The effectiveness of ACT has been shown in a diverse range of clinical conditions, including depression (Zettle and Raines 1989), obsessive compulsive disorder (Twohig, Hayes, and Masuda 2006), workplace stress (Bond and Bunce 2000), chronic pain (Dahl, Wilson, and Nilsson 2004), and terminal cancer (Branstetter, Wilson, Hildebrandt, and Mutch 2004). In addition, pertinent to this article, ACT has been used in the support of parents of children diagnosed with ASD (Blackledge and Hayes 2006).

The overall goal of ACT is to promote the requisite psychological flexibility needed to promote human flourishing and welfare. Within ACT, psychological flexibility is achieved by teaching mindfulness skills that enable: (1) the *acceptance* of unwanted thoughts; (2) preclusion of fusion with unsolicited thoughts, and observing them without attachment or judgment (i.e., cognitive defusion); (3) the preparedness to be fully aware of the present moment with openness; and (4) the ability to access a preeminent sense of self. Harris (2011) suggested that ACT is a befitting acronym because acceptance and commitment therapy places emphasis on taking effective action governed by our ineradicable values while we are fully present and engaged. Fundamentally, ACT practitioners use six core principles to support a client’s capacity for psychological flexibility: acceptance, defusion, contact with the

present moment, the observing self, values, and committed action. Within our stage-based telehealth protocol we focus our initial attention on values clarification, committed actions, and ultimately, mindfulness.

Stage 1: Values Clarification and Committed Action

Values clarification in psychology is hardly a revolutionary concept. *The Miracle Question*, for example, has been a chief query guiding constructivist psychology for decades (De Shazer, Berg, Lipchik, Nunnally, Molnar, Gingerich and Weiner-Davis 1986). *The Miracle Question*, posed by a psychologist, is designed to evoke a client's specific verbal elaborations centered on the imagined circumstances under which a client's problems are resolved, or do not exist (e.g., If you hear on the news that the shelter-in-place order has been lifted, what would you do tomorrow?). The process of answering *The Miracle Question* results in the identification of what a person truly values. Within ACT, however, there is no attempt to banish, change, or control events. Rather, the goal of ACT is to teach a client how to mitigate the impact of unsolicited thoughts and emotions through the effective use of mindfulness. Nevertheless, as in the values clarification interventions associated with constructivist psychology, a client's values are determined within ACT, and an array of value-supporting actions are identified.

The first stage within the protocol prioritizes goal clarification and the identification of committed actions. Specifically, Stage 1 of our program begins with two assessments: The Valued Living Questionnaire (Wilson, Sandoz, Kitchens, and Roberts 2010) and the Bull's Eye Values Survey (BEVS; Lundgren, Luoma, Dahl, Strosahl, and Melin 2012). The assessments are used to verify a parent's values and ensure that recommendations provided by a clinician are aligned with a parent's professed values. The assessments are particularly relevant because it is important for BCBA's to avoid *values conversion*, wherein a family defaults to the values of BCBA's who have earnestly presented their ideas for goals and objectives. The professional literature has shown that adherence to goals is optimized when goals are value focused (Chase, Houmanfar, Hayes, Ward, Vilardaga, and Follette, 2013).

The Valued Living Questionnaire (VLQ) requires respondents (e.g., a parent) to answer a series of questions about their values across life domains (e.g., family, marriage, parenting, friendships) and indicate the extent to which they have been living in accordance with professed values. Areas in which there are large discrepancies between values and the committed actions required to live in consonance with values are prioritized (e.g., a parent may value his or her child's development but struggle to balance priorities to maximize time, attention, and engagement with the child; therefore, actions that support an increased level of attention and time spent with a child are prioritized). Within Stage 1 of the intervention, the VLQ is completed by a parent (privately)

and the results are summarized in the context of a telehealth session. Subsequently, the clinician guides each participating parent through the BEVS within the context of a telehealth session. The BEVS is an instrument designed to promote awareness centered on the discrepancy between individuals' values and their actions (i.e., value–action discrepancy). Within the BEVS phase of treatment, a dartboard is projected on a computer screen during a session. According to Lundgren, Luoma, Dahl, Strosahl, and Melin (2012), the simulation of a dartboard is used because most people are acquainted with the idea of tossing darts at a target with concentric rings. The displayed dartboard is partitioned into four regions (e.g., the upper left represents Region 1, and the upper right represents Region 2). Parents are asked to select an area of their life they value (e.g., family relationships) and to place an X within one of the multiple rings on the dartboard to indicate the extent to which they are behaving in a manner consistent with their values. One region of the dartboard is used for a single articulated value. An X in the center of the dartboard (i.e., bull's eye) would signify complete value–action alignment. In contrast, an X placed within one of the outer rings of the dartboard would visually reveal a discrepancy between values and actions. Within the BEVS, four values are identified as a result of the VLQ. Subsequently, the BEVS allows for a value–action cohesiveness assessment. Areas of value–action discrepancy are prioritized for intervention. The intention of Stage 1 is to identify a parent's values, detect discrepancies between stated values and committed actions, and then connect a child's need for instruction to the parent's declared values. For example, if a family member indicates he or she values creative expression, but just does not find the time to do anything of a creative nature, then a child's instructional needs (e.g., fine motor development) would be connected to a specific activity the family member valued. Specific activities are identified as a result of a parent-focused preference assessment.

Stage 2: Parent-Focused Preference Assessment

Preference assessments have been traditionally used to identify putative reinforcers for an individual with ASD. Researchers have shown that individuals with ASD and related disabilities can demonstrate, through a variety of preference assessment formats, clear preferences for activities and items that are a source of visual, olfactory, gustatory, thermal, social, vestibular, auditory, or tactile stimulation (Mason, McGee, Farmer-Dougan, and Risley 1989). Research studies have shown that when preference assessments are integrated into programs for addressing both behavioral deficits and behavioral excesses, an individual's ability to choose activities and items of high interest has resulted in skill acquisition, increases in appropriate behavior, and quality-of-life changes. Although there is clear evidence supporting the use of preference assessments to identify putative reinforcers for individuals

with ASD and related disabilities, such *choice-based interventions* have been used less often within behavior analytic treatment to identify the activity preferences of family members (e.g., parents). The identification of the activity preferences of family members is essential for several reasons. First, if activities preferred by a parent of a child with ASD can be identified, those activities can then be used as the basis for engagement with that child. Next, with the support of a BCBA, detailed suggestions centered on how a child's goals and objectives can be addressed, within the context of a parent's preferred activities, can be offered. For example, a mom who enjoys woodworking could use the hobby to address her child's goals for gross motor skill development (e.g., marching across the room to get a piece of wood), fine motor skill development (e.g., painting a wooden surface), and language and communication skill development (e.g., by teaching the child to mand for information or the opportunity to conjoin two pieces of wood, such as a dovetail and joint). Finally, a parent's preferred activities can serve as the basis for increasing the number of learning opportunities a child receives and potentially improve the likelihood of acquisition of socially significant skills.

Although preference assessments for adults without disabilities are not discussed in journals devoted to behavior analysis, they are described in other disciplines. In fact, within contemporary theories of adult development, theorists have linked meaningful life engagement to a sense of well-being. In consequence, instruments such as the MAPA have been identified to assess activities that are personally valued and meaningful to adults (Eakman, Carlson, and Clark 2010). Therefore, within Stage 2 of our protocol, an activity preference assessment is conducted with participating parents. Specifically, an indirect preference assessment is coordinated within the context of a telehealth session. To facilitate the preference assessment, MAPA is used as an inspiration for the construction of a family-centered and customized tool. Within Stage 2, a checklist-driven survey is used. The telehealth practitioner conducts parent interviews to assess the frequency of activity participation, and the degree of personal meaningfulness experienced with each activity. Next, the telehealth BCBA links the results of the VLQ and the BEVS with the outcomes of the customized assessment. Subsequently, a list of activities that address parents' values, and reconcile with their preferred activities, is created. For example, if the BCBA learns that physical self-care (e.g., exercise) is valued by a family member (as indicated in the VLQ assessment), but there is a relevant discrepancy between the family member's value for self-care and her or his committed actions (as verified in the BEVS results), and the family member selects physical exercise as a preference from the parent-centered

assessment, then a list of activities involving physical exercise is generated. All activities suggested, however, must be suitable to a child's inclusion.

Stage 3: Goal Alignment and Parent-Led Activity Based Intervention

Within Stage 3 of the intervention, the telehealth practitioner uses a visual framework that lists: (1) the parent's values (as identified with the BEVS), (2) the parent's preferred activities (as revealed with the BEVS), (3) the materials required to support those activities, (4) the child's treatment goals, (5) examples of how the child's treatment goals could be addressed within the context of each preferred activity, (6) the time of day activities could occur, (7) the preferred duration and frequency of the activity (selected by the parent), (8) the type of data that could be collected to capture the child's performance, (9) recommendations for the generalization of skills, and (10) the desired outcomes. The documented framework is prepared in advance of a parent meeting and reviewed in a telehealth session.

(Insert Table 1 here)

Subsequently, a participating parent is taught a variation of ABI. Traditionally, ABI involves a child-directed transactional approach that integrates a child's individualized goals and objectives in a routine, or within planned or child-initiated activities. The approach capitalizes on naturally occurring antecedents and consequences to develop functional and generative skills (Bricker and Cripe 1992). Within Stage 3 of our protocol, we develop a parent-directed transactional approach that yokes a child's individualized goals and objectives to a planned and parent-led activity. The intervention is then implemented within Stage 4 of the protocol.

Stage 4: Parent-Implemented Intervention and Data Collection

Researchers have demonstrated that parents can acquire and apply evidence-based strategies with which to teach their children (Roberts & Kaiser 2011). In fact, parent-implemented intervention (PII) is an evidence-based practice (Wong et al. 2015). However, parents require the support of high-quality guidance and coaching to ensure that programs are implemented with fidelity. Within Stage 4 of the protocol, a telehealth-based behavior skills training (BST) model is used that includes: (1) the BCBA providing verbal and written instructions to support parent-implemented ABI; (2) the BCBA modeling ABI with a child from the distance site (i.e., where the BCBA is located), (3) the parent role-playing ABI from the originating site (i.e., where the parent is located); and (4) the

BCBA providing feedback to the parent. BST has been shown to be an effective method for supporting parents in the implementation of behavioral interventions (Drifke, Tiger, and Wierzbica 2017). Permanent product data are collected by way of a video messaging app Marco Polo™; a free, video, walkie-talkie app that allows end-users (i.e., the BCBA and parent) to quickly send short video-based messages back and forth during a session. The Marco Polo™ app is used: (1) to promote engagement between the BCBA and parent, (2) to capture videos of a child's skills for the purpose of data collection, (3) to create videos that can be used as a source of feedback to the child, and shown to other family members to reveal the capabilities of a child (i.e., the Marco Polo™ app has a save and forward feature that allows family members to share brief videos). Within Stage 4 of the protocol, participating parents implement ABI and take responsibility for data collection via the Marco Polo™ app.

Stage 5: Priming for a Comprehensive Model of Acceptance and Commitment Therapy

The transtheoretical model (TTM) provides a framework for both the conceptualization and measurement of behavior change (Prochaska & Velicer 1997). The TTM was developed as a comprehensive model of behavior change. The model incorporates cognitive, behavioral, and temporal aspects into a unified approach for behavior change. The TTM facilitates the promotion of strategies that are stage-matched, individualized, and easily adapted. Prochaska and Velicer (1997) outlined five stages in their process of change model: (1) a precontemplation stage wherein a person is inactive; (2) a contemplation stage, characterized by a person's willingness to discuss future plans for changing behavior; (3) a preparation stage in which a person begins the process of establishing process goals, short-term goals, and long-term goals for behavior change; (4) an action stage, characterized by a person's full engagement in the behavior change process; and lastly, (5) a maintenance stage, defined by a person's focus on relapse prevention and the maintenance of newly acquired behaviors. Prochaska and Velicer (1997) emphasized the importance of using "stage-matched" interventions. More to the point, any intervention proposed for an individual should be commensurate with his or her current level of motivation. For example, trying to persuade a person in a precontemplation stage (i.e., inactive) to immediately initiate some form of behavior change is not advised (e.g., bringing a friend, who enjoys the consolations of the couch, for a surprise visit to the yoga studio is misguided). An appropriate stage-matched intervention for a person in a precontemplation or contemplation stage of behavior change could involve exposing a person to educational material. In consequence, within Stage 5 of our protocol, we use an educational approach to prepare a family member to use a comprehensive model of ACT. Orienting a person to educational information facilitates a smoother downstream flow with a person preparing for transition and

change. A matrix was established to provide a visual representation of exercises to support each of the six core principles because the six core principles in ACT are associated with a series of exercises to allow for ongoing practice (i.e., acceptance, defusion, contact with the present moment, the observing self, values, and committed action). For example, in order to practice the skill of resisting attachment to unwanted thoughts and emotions, 10 exercises were outlined, each with a brief description: (1) leaves on a stream, (2) hands in front of your face, (3) the guest house, (4) playground bully, (5) silly voice, (6) the view from above, (7) Plato's IMAX, (8) the sky and the clouds, (9) flushed with pride, and (10) you are the Buddha.

(Insert Table 2 here)

Subsequently, a choice-intervention is used, wherein the parent is given the autonomy to select the exercise to be explored. Next, we use a behavioral rehearsal strategy (Beidas, Cross, and Dorsey 2014). Behavioral rehearsal involves engaging the parent in a simulated interaction with the BCBA; however, the parent assumes the instructor's role, and the BCBA welcomes the role of trainee. The parent is asked to select at least one exercise from a preferred category for a behavioral rehearsal session (i.e., acceptance, defusion, contact with the present moment, the observing self, values, and committed action). All behavioral rehearsals occur in the context of a telehealth session. The behavioral rehearsal strategy allows a family member to experience at least one exercise associated with each of the core principles of ACT. The behavioral rehearsal approach agrees with Prochaska and Velicer's (1997) stage-matched intervention to support behavior change. Moreover, the behavioral rehearsal strategy allows the BCBA to ensure that the parent experiences the instructional format as judicious and nonjudgmental. In our opinion, it is critical for a BCBA to identify a family member's current state with respect to their own behavior change process (e.g., precontemplation, contemplation, preparation, action, maintenance) before imposing expectations involving change. Our stage-based intervention concludes with an outline of a minimum clinical dataset influenced by frameworks for accountability within healthcare.

A Minimum Clinical Dataset for Telehealth

Using Berwick's (2002) framework of quality, we created a minimum clinical dataset for the evaluation of our five-stage intervention model. According to Berwick, quality can be achieved by addressing processes at four levels: that of the client, that of the microsystem, that of the organization, and that of the larger physical, social,

economic, and political environment. At the client level (i.e., the child receiving services), our data collection system includes pre- and post-measures centered on: (1) the number of programs per domain (e.g., language, motor skill) implemented by a family member; (2) the number of learning opportunities the child receives per domain; (3) the duration of time spent (with a family member) engaged in ABI; (4) the number of skills mastered per domain; and (5) the integration of acquired skills into the child's daily routine. At the level of the microsystem (i.e., the family), our pre- and post-intervention assessment protocol includes administration of the Family Adaptability and Cohesion Evaluation Scale (FACES; Olson, Portner, and Bell 1982). It is our position that a goodness-of-fit between interventions and outcome measures is necessary. An assessment tool designed to evaluate changes in flexibility and adaptability is apropos because the primary goal of ACT is to increase psychological flexibility. Adaptability, within the structure of a nuclear family, is the ability of family members to change their power structure, role relationships, and rules to respond to situational and developmental changes. Therefore, an assessment tool designed to measure flexibility and adaptability is required. In addition, the Parental Locus of Control Scale (Lloyd and Hastings 2009) and a social validity measure are also part of the full battery assessment.

From an organizational standpoint, the COVID-19 pandemic has necessitated the redesign of organizational processes, moving from traditional models of service delivery (e.g., center-based services) towards client-centered structures involving the use of telehealth. This change has caused applied behavior analysis providers to engage in a redesign process that encompasses several restructuring actions including: (1) changing the form of service delivery (i.e., from direct and in-person treatment to telehealth services), (2) changing staff training protocols (e.g., methods for developing relationships and building rapport via telecommunications), and (3) changing methods for managing new client intake, assessment, and treatment planning. We identified two measures to evaluate the adaptability and agility of an organization. First, we created a dashboard to generate utilization data (i.e., the percentage of service hours delivered with respect to the total number of hours authorized by the payer) to evaluate the organization's commitment to continuity of service. Second, we developed an employee satisfaction survey to measure clinicians' perceived preparedness for functioning within a telehealth environment. Finally, to maintain a framework of accountability to the organization's larger regulatory and political environment (i.e., the payers), we developed an internal auditing system to ensure that error-free claims were submitted. All measures were generated to comprehensively evaluate the efficacy and practicality of utilizing the stage-based model for delivering telehealth services to children with ASD and their families.

Conclusion

The protocol we developed is about embracing the rules, but not the status quo. We describe a stage-based model for providing telehealth services to children with ASD and their families. The stage-based model comprises a synthesis of information from contextual behavioral science, applied behavior analysis, health psychology, and occupational therapy. Specifically, the stage-based model includes ACT, a parent-focused preference assessment inspired by work in the field of occupational therapy, and parent-led ABI. The process concludes with the outline of a minimum clinical dataset influenced by extant initiatives in healthcare. At this juncture, the efficacy of the five-stage model requires further evaluation. In conclusion, as written by Hayes, Barnes-Holmes, and Wilson (2012), “As a functional contextualist sees it, the ultimate purpose of behavioral science is to change the world in a positive and intentional way” (p. 2). We do not nurture any desire for the field of applied behavior analysis to continue its trajectory prior to the pandemic, rather, we view the changes in daily practices brought about by the COVID-19 pandemic as a catalyst for innovation in the field of applied behavior analysis.

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Table 1*Goal Alignment and Parent-Led Activity-Based Instruction*

Element	Description	Example
Parent Interest	Based on The Valued Living Questionnaire, Bull's Eye Values Survey, identify caregiver values. Conduct an activity preference assessment with the parent using the Meaningful Activity Participation Assessment.	Mom identified family as a value and gardening as a preferred activity. Family has a garden in the backyard of the home and both adult and child-sized gardening tools in the shed.
Treatment Goal	Select a treatment goal from the child's program which aligns with the parent's values and activities of interest	Manding: requesting items necessary to complete tasks using 4-5-word sentences. Child can request items needed to participate in gardening.
Time of Day	Select the time of day and duration for selected activity.	Mom gardens before lunch every day. Child can attend to activities for approximately 10-15 minutes at a time.
Data Collection	Child's language samples	Use Marco Polo™ to capture permanent product data on language used during gardening activity.
Generalization	Use of 4-5-word mands demonstrated in novel contexts.	Child demonstrates ability to ask for items using 4-5-word mands in other activities (e.g. cooking, playing with sibling)
Outcomes	Spontaneous use of 4-5-word mands in novel contexts.	Child spontaneously uses 4-5-word mands in novel contexts (e.g., with extended family members, during mealtimes).

Table 2*10 Defusion Exercises*

Element	Description
Leaves on a stream	As thoughts pass by, write them on leaves and drop them into the stream in front of you to watch them float away.
Hands in front of your face	Cover your face with your hands and slowly move your hands away from your face.
The guest house	Greet different thoughts, feelings and versions of yourself as if they were guests in a house.
Playground Bully	Treat your negative thoughts and feelings the same you would a school or playground bully.
Silly voice	Write down any negative thoughts and feelings, then say them out loud in a silly voice (e.g., cartoon character).
The view from above	Think of your situation and life, then visualize zooming out from your life until you are zoomed all the way out to the solar system or galaxy.
Plato's IMAX	Imagine your thoughts and feelings as you would image them on a movie screen with yourself sitting in the audience watching.
The sky and the clouds	Look up to the sky and watch the clouds pass by. The mind is the sky and the clouds are thoughts and feelings.
Flushed with pride	Write down the negative thought or feeling, fold it up, and flush the paper down the toilet. Thank the belief for helping and note you are now letting it go the same as you let go of food after taking nutrition from it.
You are the Buddha	Imagine sitting in front of the Buddha. Note the positive thoughts and feelings. Imagine integrating with the Buddha and recognizing the Buddha within you (e.g. the highest version of yourself).