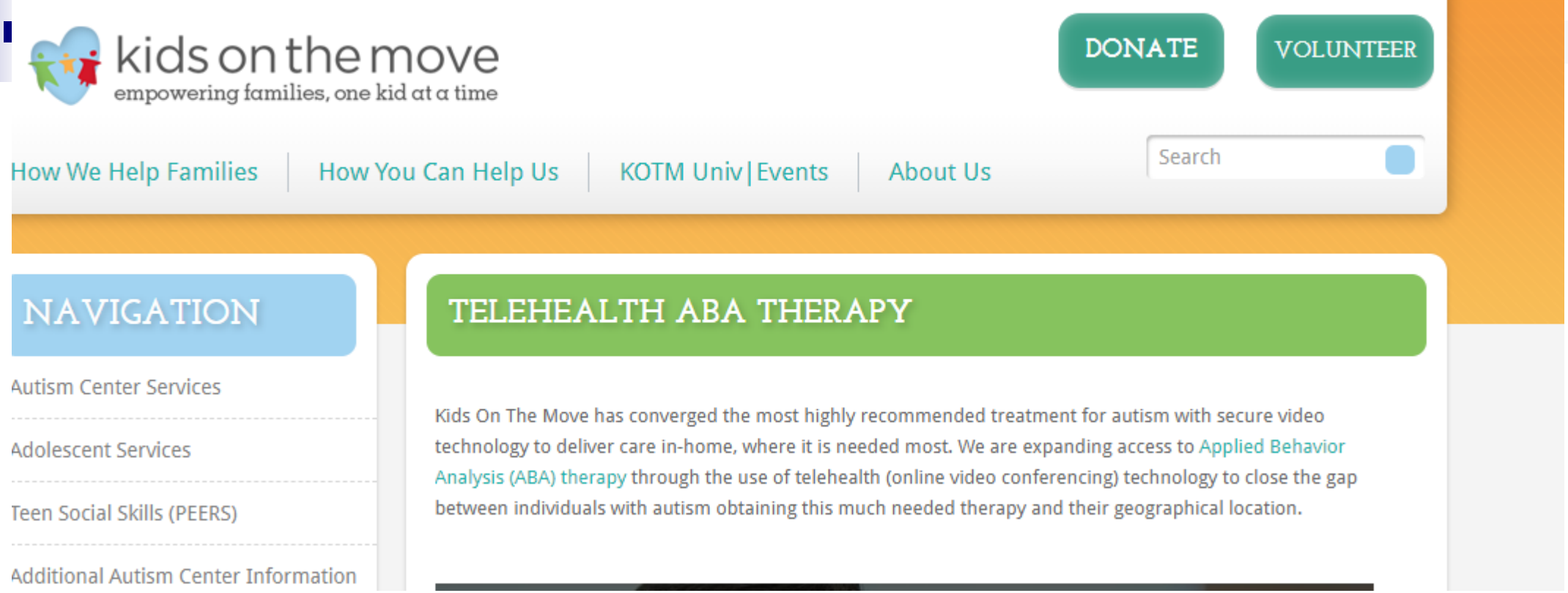
University of Houston Clear Lake

Training Caregivers Via Telehealth Technologies

Dorothea C. Lerman, Ph.D., BCBA-D

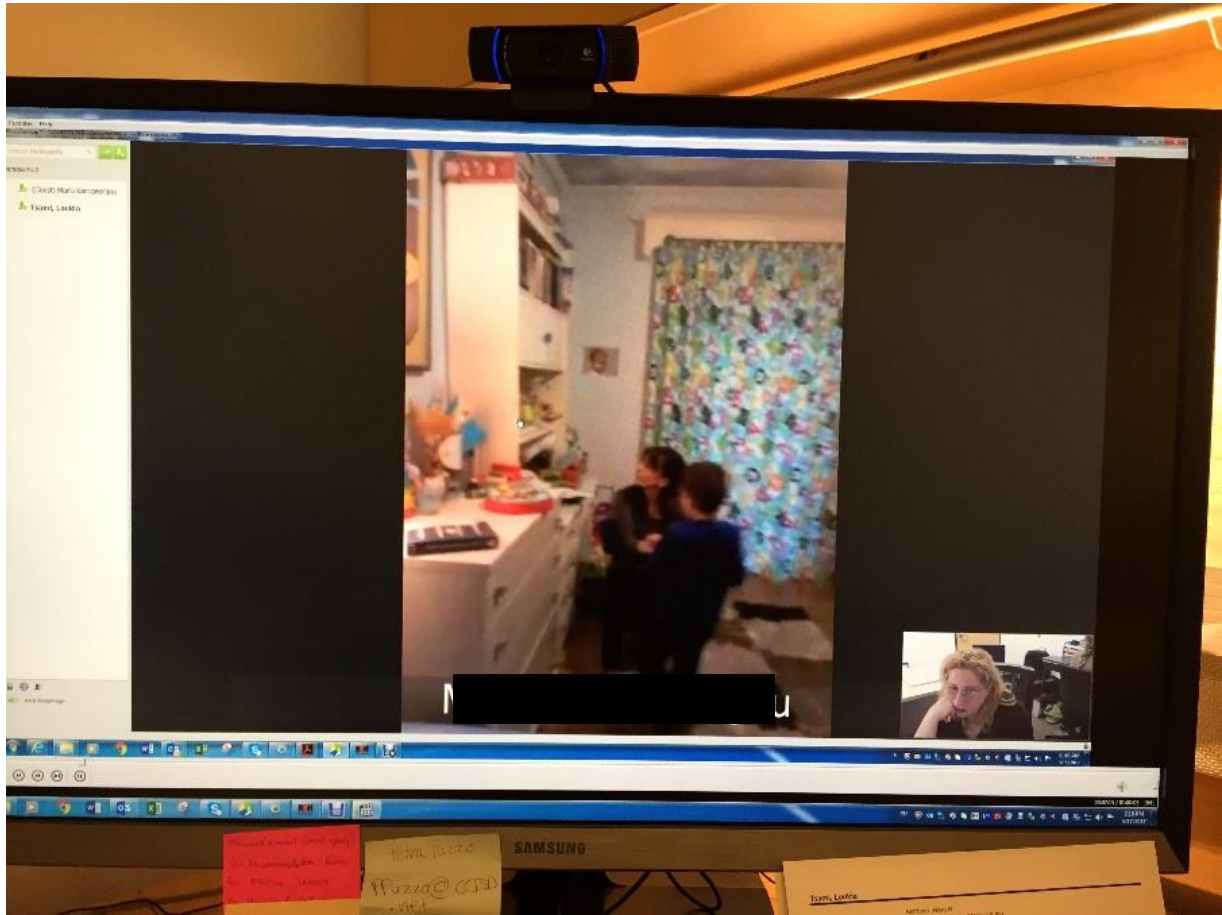
CADD
CENTER FOR AUTISM AND DEVELOPMENTAL DISABILITIES



Hi all - thanks for allowing me to join this group. I am a B
CA and love the company I work for but my family and I
idea of selling everything and living on the road for a ye
seeing what's out there for remote telehealth options in
tips or suggestions!

Looking for any opportunity to work remotely as a BCBA. I have been practicing as a BCBA for 6 years. Located in Ohio. Any ideas or leads would be greatly appreciated! Thanks!

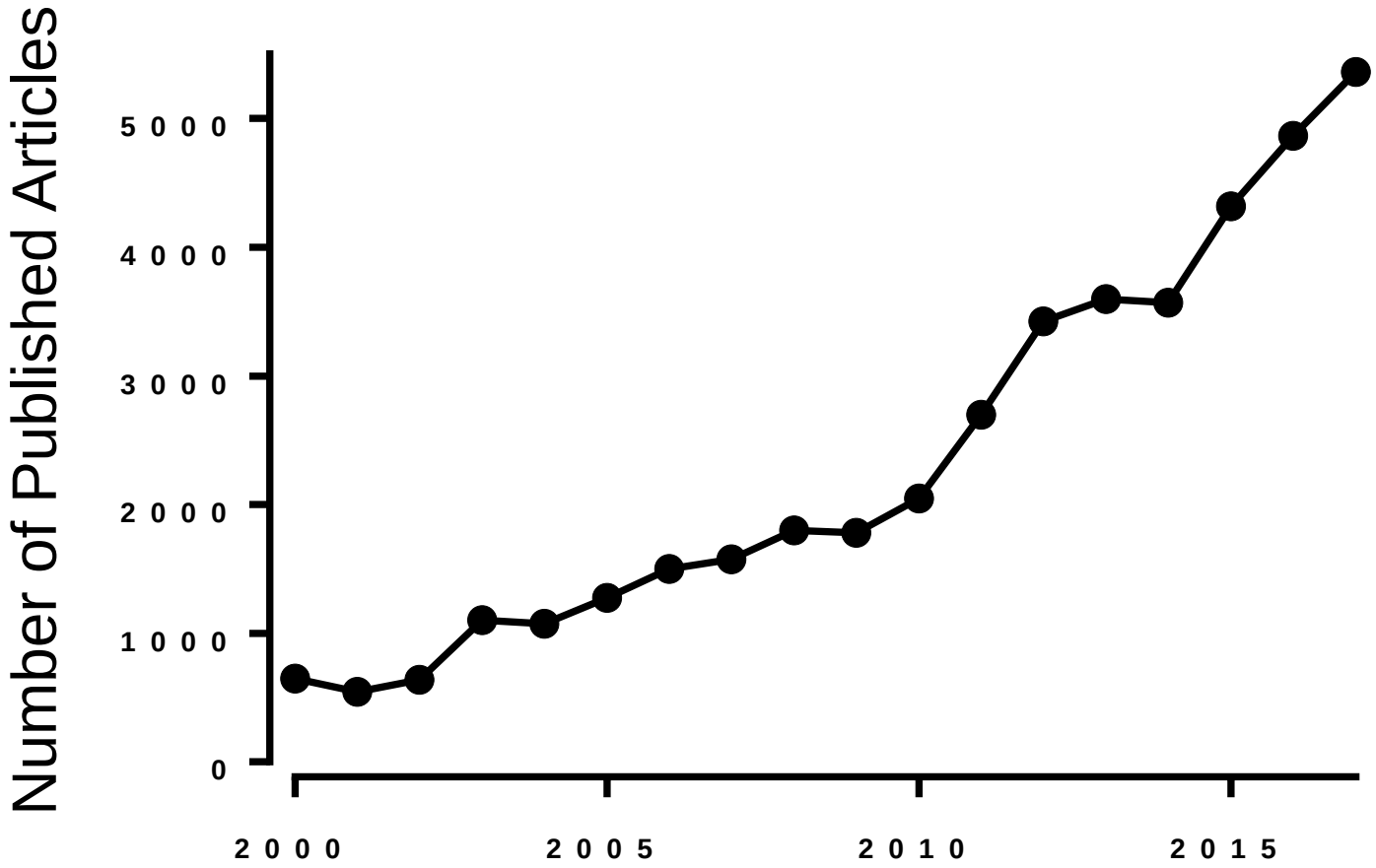
WE CAN SAVE THE WORLD WITH BEHAVIOR ANALYSIS!



HIPAA-Compliant Software

- Vidyo
- Vsee
- Zoom

EBSCO Search – “Telehealth” or “Telemedicine”
Peer-viewed articles



The Pioneer of Telehealth ABA Services (2006 -)

David Wacker, Ph.D
University of Iowa (recently retired)

- Functional Analysis of Problem Behavior
- Functional Communication Training

J Behav Educ
https://doi.org/10.1007/s10864-018-9292-0

ORIGINAL PAPER

Training Individuals to Implement A Analytic Procedures via Telehealth: Review of the Literature

Serena R. L. Tomlinson[1] · Nick Gore[1] · Peter M

J Dev Phys Disabil (2017) 29:849–874
DOI 10.1007/s10882-017-9550-4

REVIEW ARTICLE

Fidelity Outcomes for Autism-Focused Interventionists Coached via Telepractice: a Systematic Literature Review

Leslie Neely[1] · Mandy Rispoli[2] · Stephanie Gerow[3] · Ee Rea Hong[4] · Shanna Hagan-Burke[5]

Journal of Autism and Developmental Disorders
https://doi.org/10.1007/s10803-018-3724-5

ORIGINAL PAPER

Telehealth as a Model for Providing Behaviour Analytic Interventions to Individuals with Autism Spectrum Disorder: A Systematic Review

Jenny Ferguson[1] · Emma A. Craig[1] · Katerina Dounavi[1]

EVIDENCE

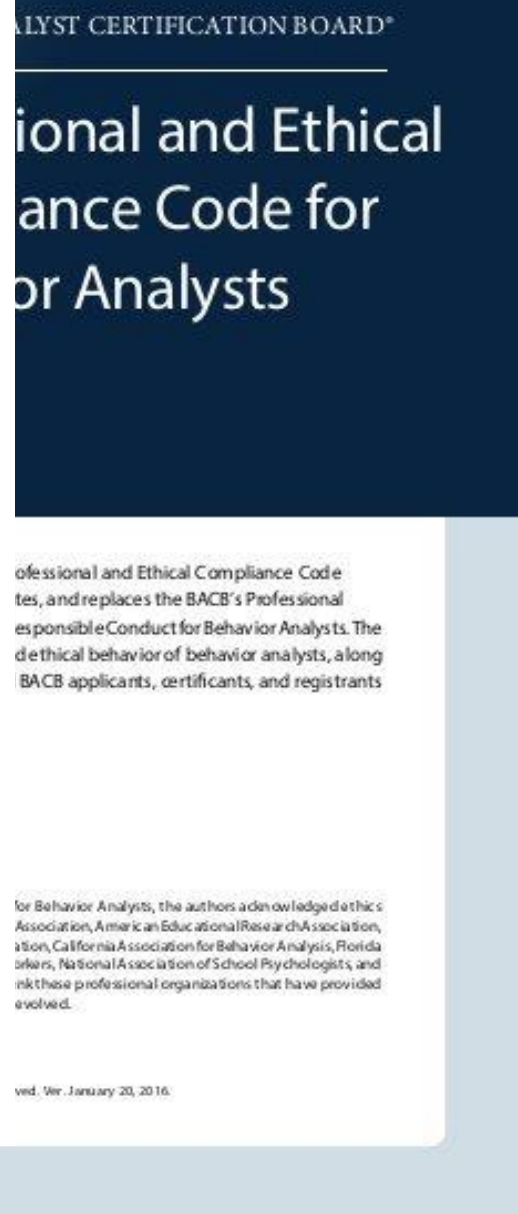
THE WILD WEST

PRACTICE BRIEF

Telehealth and the practice of Applied Behavior Analysis (ABA)

Overview

Telehealth is defined as the "mode of delivering health care services and public health via information and communication technologies to facilitate the diagnosis, consultation, treatment, education, care management, and self-management of a patient's health care while the patient is at the originating site and the health care provider is at a distant site. Telehealth facilitates patient self-management and caregiver support for patients and includes synchronous interactions and asynchronous store and forward transfers." [1,2] Further, "Telehealth is not a



Copyrighted Material

Report of the TxABA Public Policy Group
Telehealth ABA Task Force

Task Force Members:
Jennifer Fritz, Ph.D., BCBA-D, LBA
Jessica Graber, Ph.D., BCBA-D, LBA
Jennifer Hines, M.Ed., BCBA, LBA
Dorothea Lerman, Ph.D., BCBA-D, LBA
Lee Mason, Ph.D., BCBA-D, LBA
Leslie Neely, Ph.D., BCBA-D, LBA
Loukia Tsami, M.S., BCBA, LBA
Gordon Bourland, Ph.D., BCBA-D, LBA, Chair

Our Current & Recently Completed Projects

- Comparison of Behavioral Assessments Using Telehealth for Children with Autism (NIH Grant with University of Iowa and Emory/Marcus)

Our Current & Recently Completed Projects

JOURNAL OF APPLIED BEHAVIOR ANALYSIS 2019, **9999,** 1–16 NUMBER 9999 ()

Transfer of treatment effects from combined to isolated conditions during functional communication training for multiply controlled problem behavior

LOUKIA TSAMI AND DOROTHEA C. LERMAN

UNIVERSITY OF HOUSTON, CLEAR LAKE

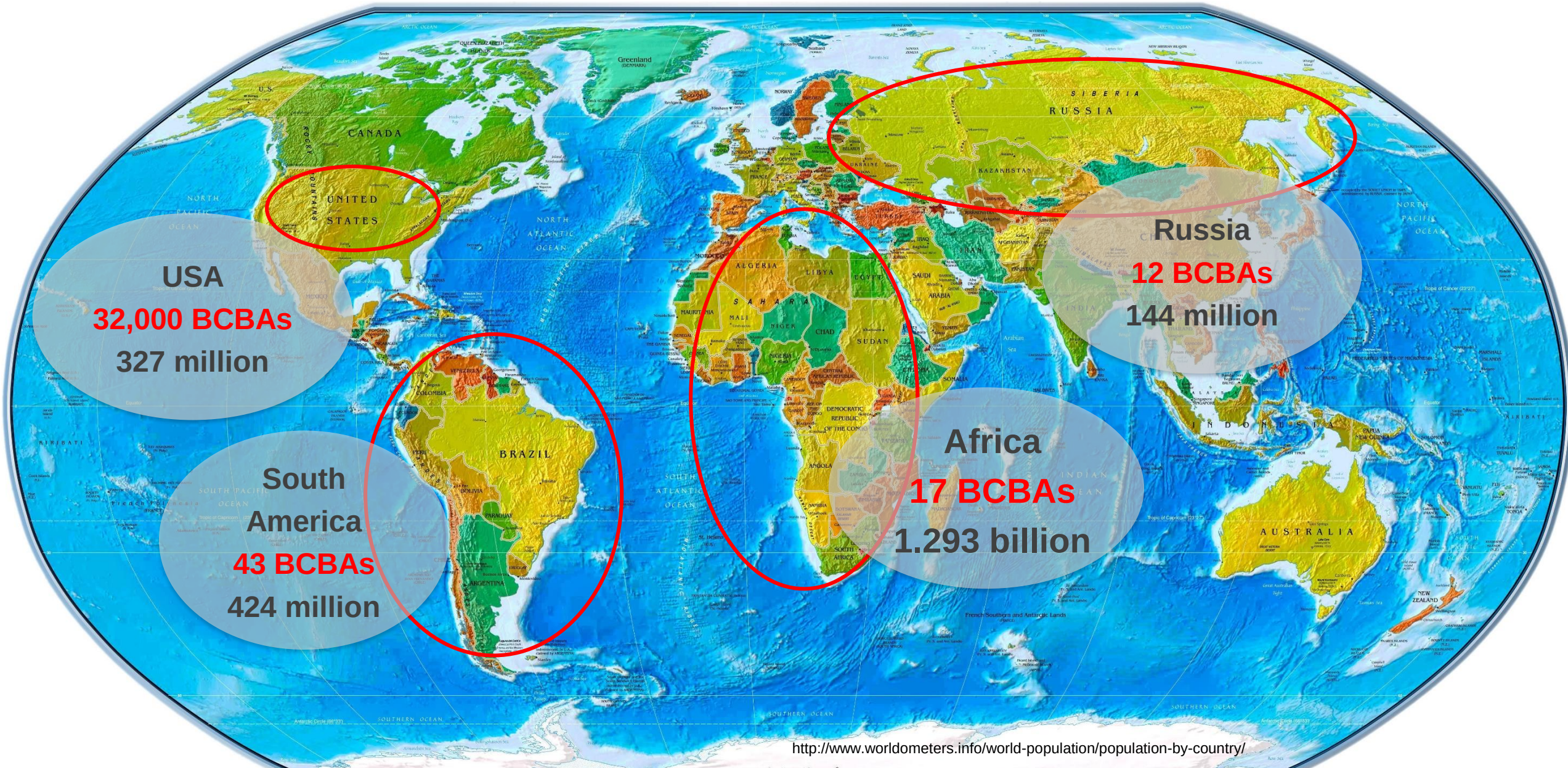
JOURNAL OF APPLIED BEHAVIOR ANALYSIS 2019, **9999,** 1–17 NUMBER 9999 ()

Effectiveness and acceptability of parent training via telehealth among families around the world

LOUKIA TSAMI, DOROTHEA LERMAN AND OZLEM TOPER-KORKMAZ

UNIVERSITY OF HOUSTON-CLEAR LAKE

Country, BCBAs, Population



http://www.worldometers.info/world-population/population-by-country/

Loukia Tsami, M.A., BCBA
Research Associate
University of Houston, Clear Lake

Özlem Toper-Korkmaz, Ph.D.
Assistant Professor, Special Education
Uludağ University

Telehealth ABA World Project
Founder and Director: Loukia Tsami, BCBA

Telehealth ABA World Project Interpreters

- Areli Barajas
  Spanish

- Irina Shutts
  Russian

- Sarah Alsaleh
  Arabic

- Maria Quadri
  Urdu

- Dieu Truong
  Vietnamese

Telehealth ABA World Project Interpreters

- Grace Shay
  Mandarin Chinese

- Naomi Alphonso
  Hindi

- Prisca Deliperi
  French

- Andrew Bennett
  French

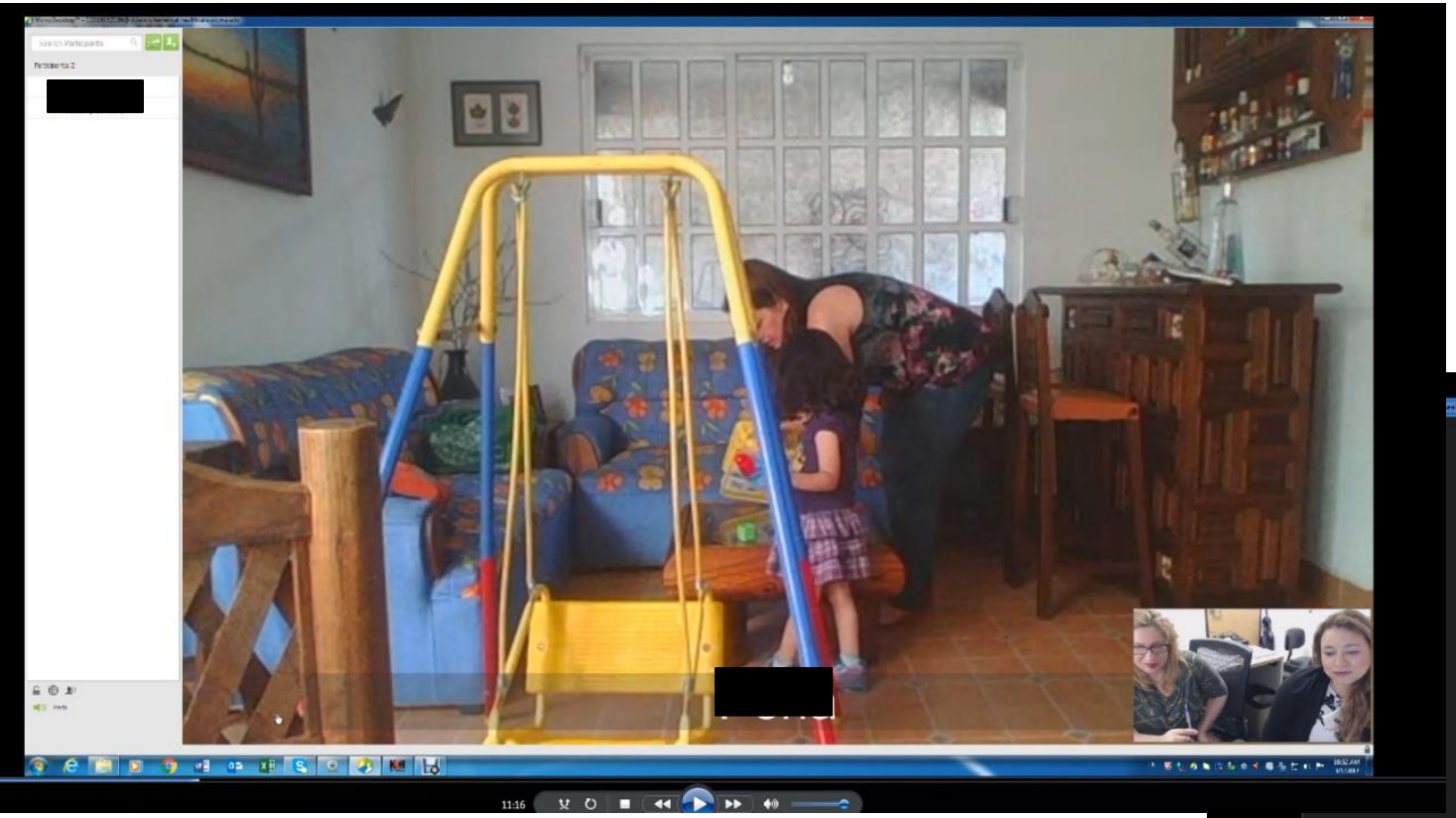
Telehealth ABA World Project Interpreters

- Anna Amagou
  French

- Linh Đào
  Vienamese

- Trang Tran
  Vietnamese

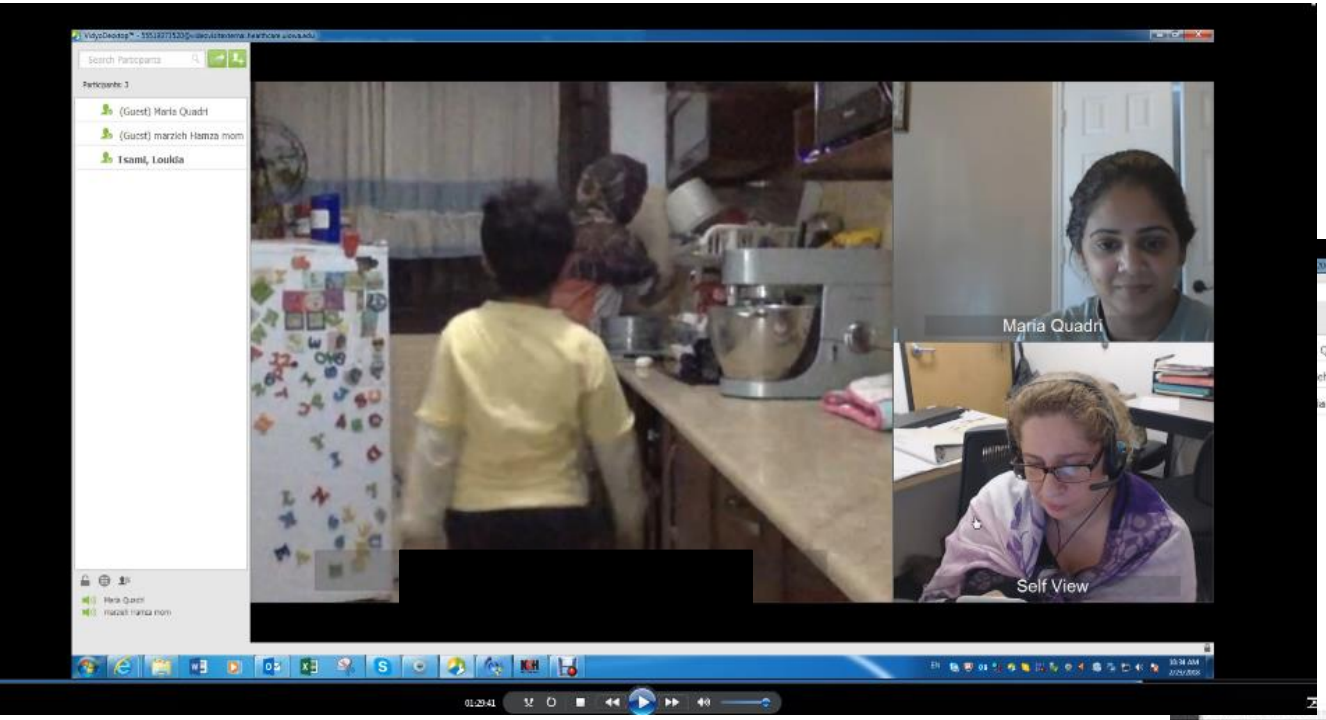
Interpreter in behavior analyst's location

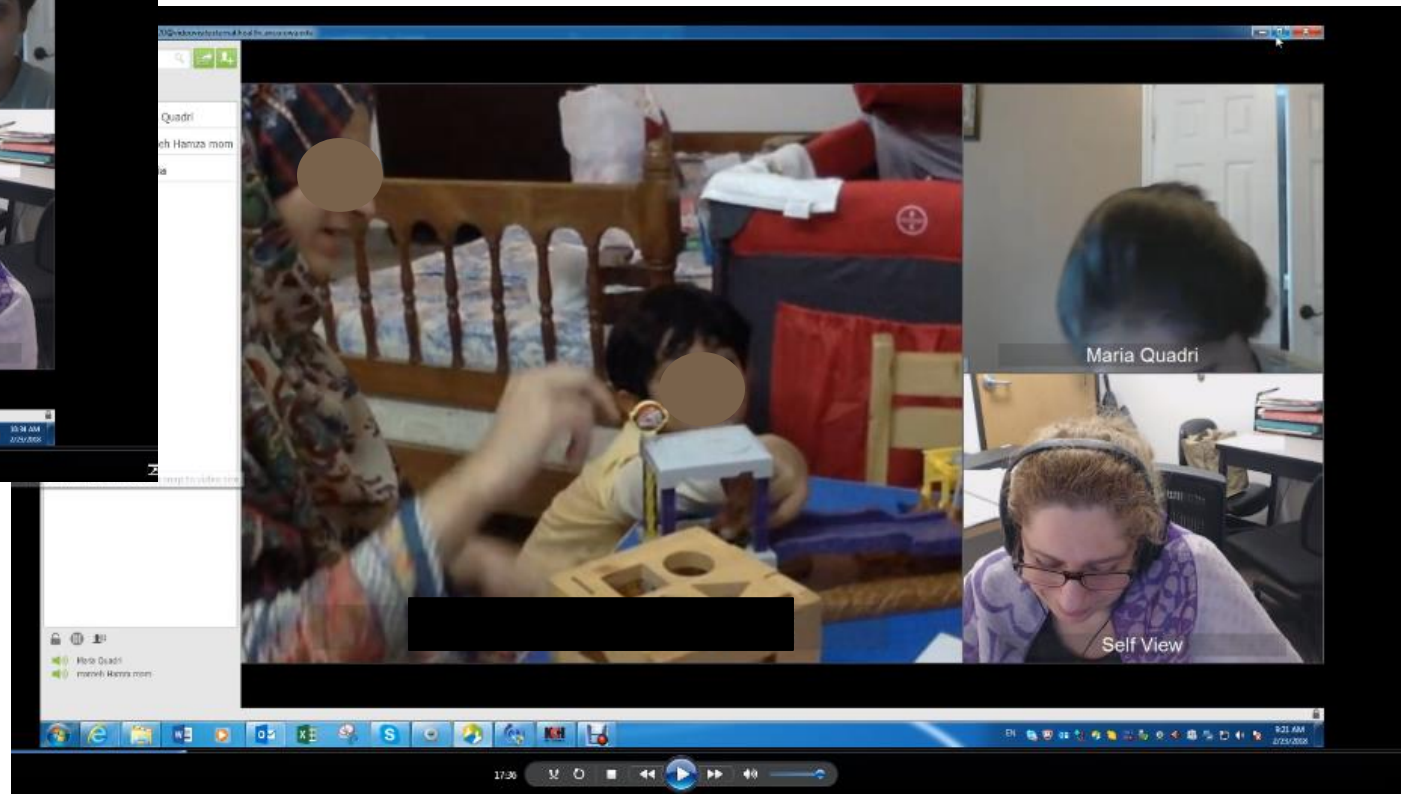


Mexico

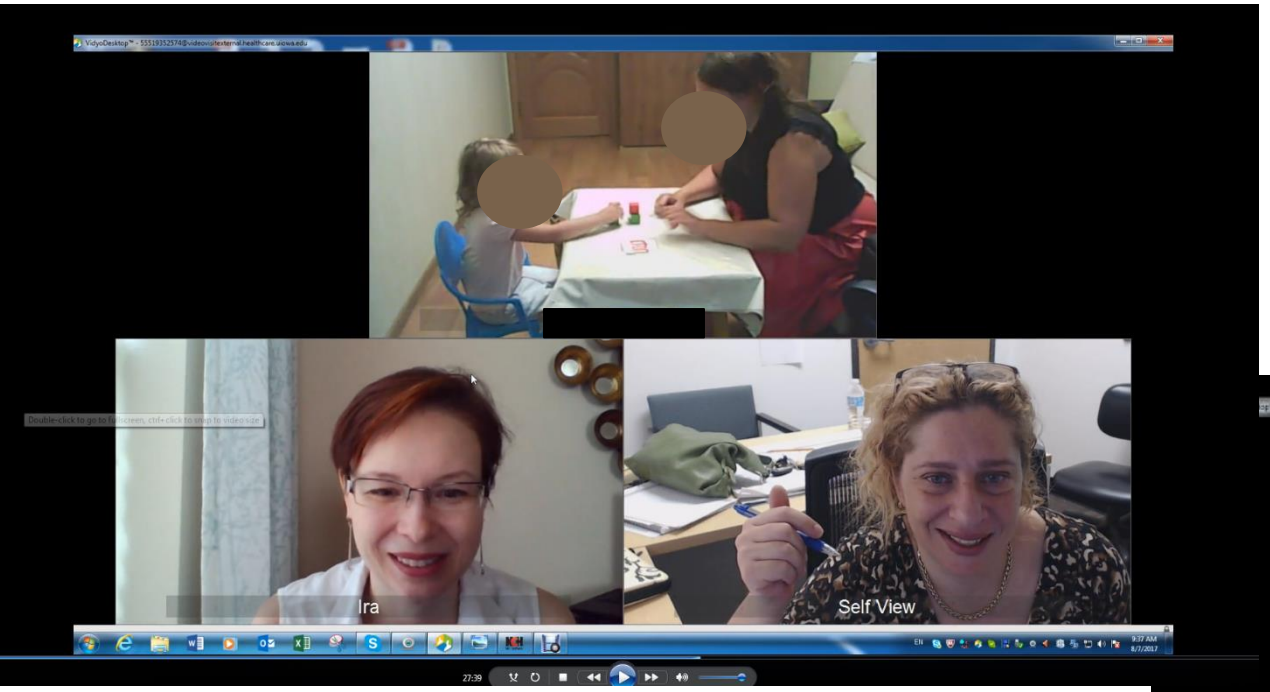
Interpreter in separate (third) location

Pakistan

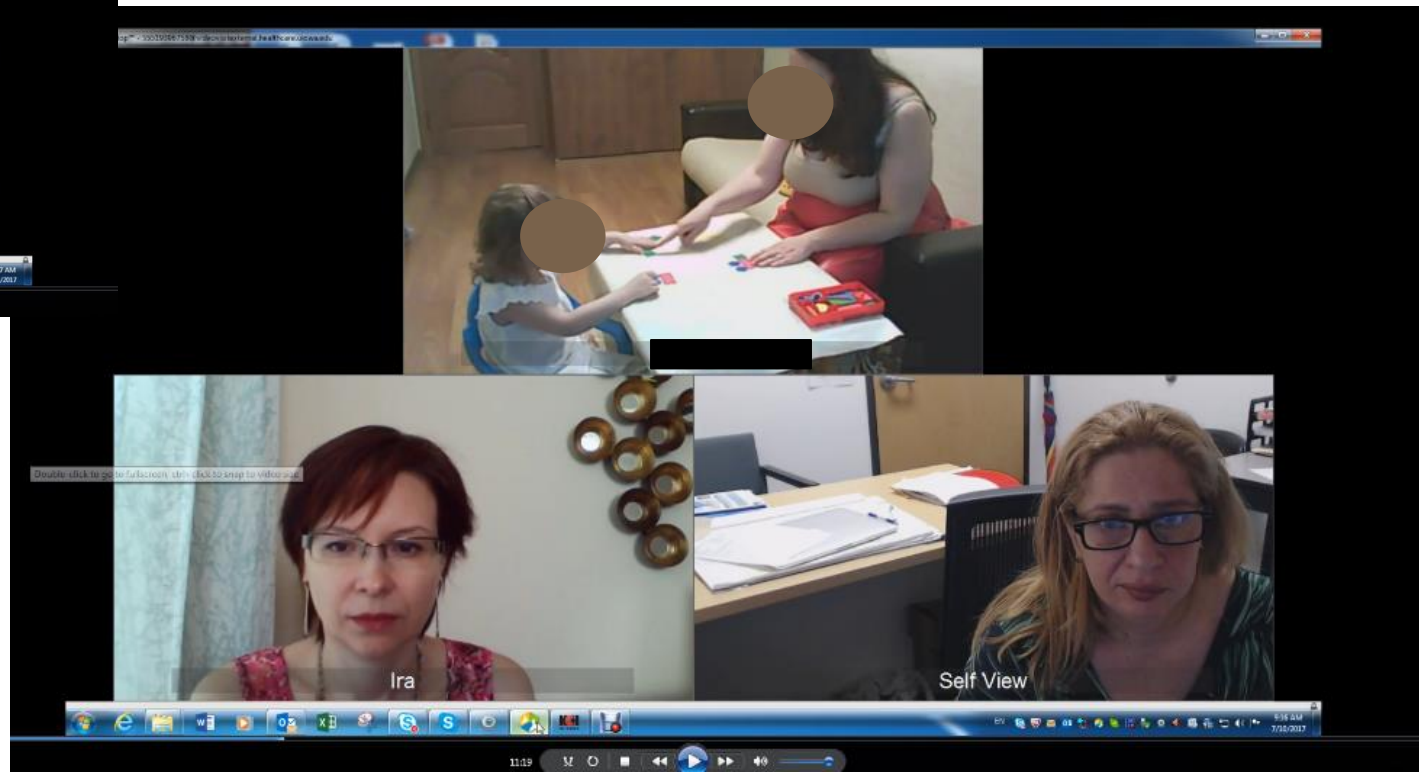




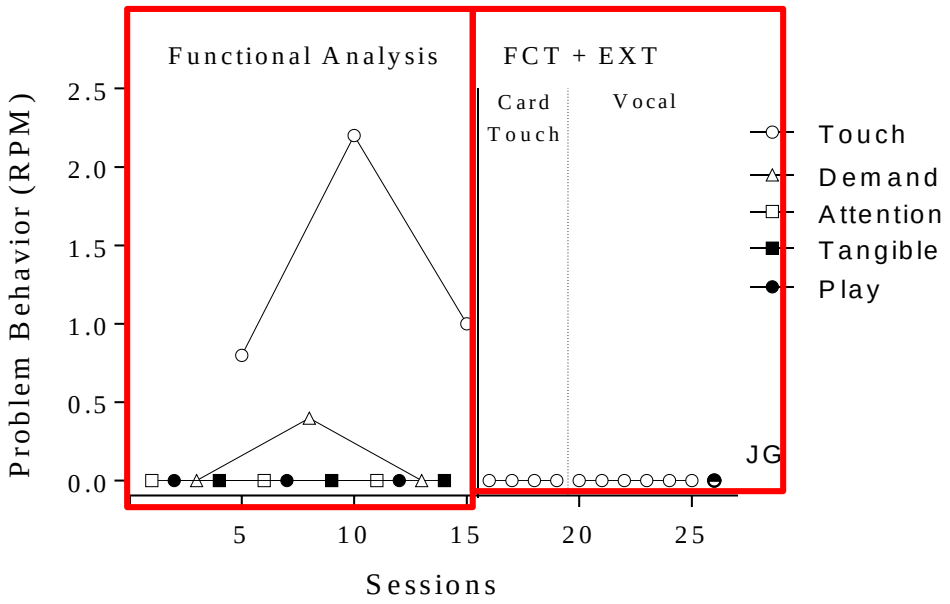
Interpreter in third location



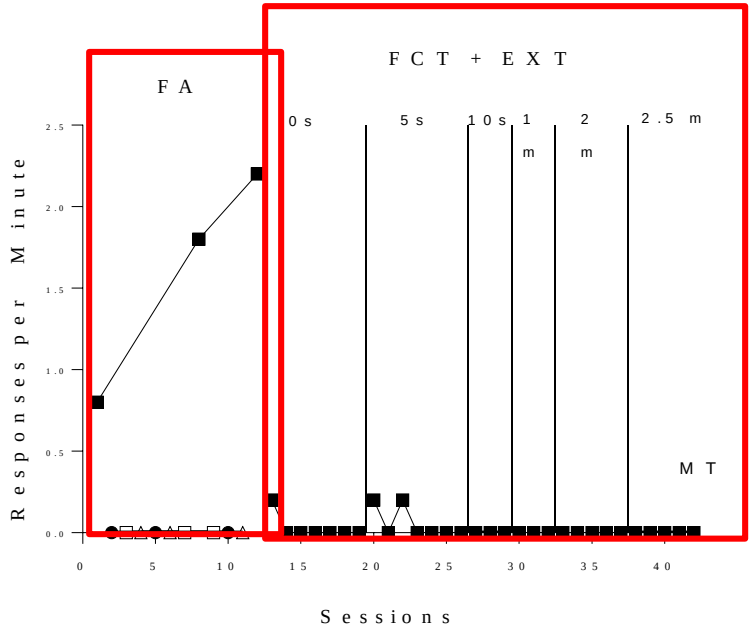
Russia

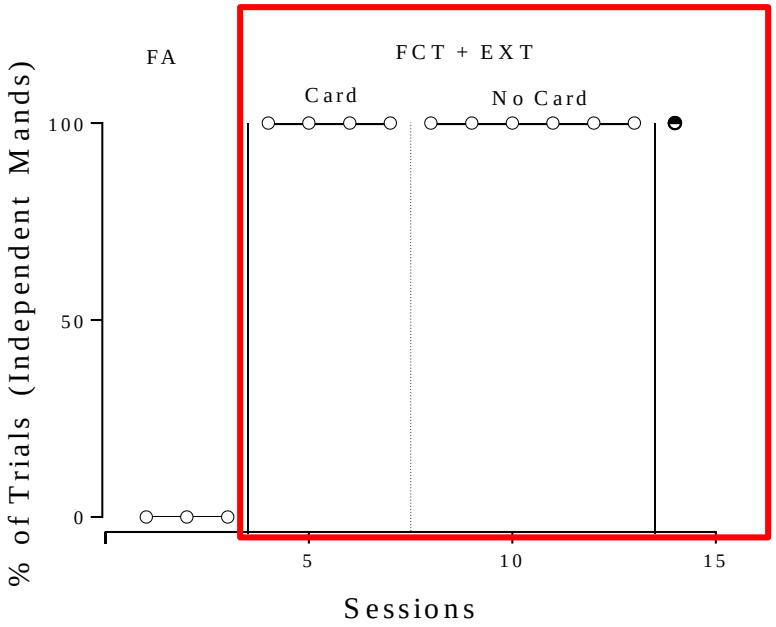


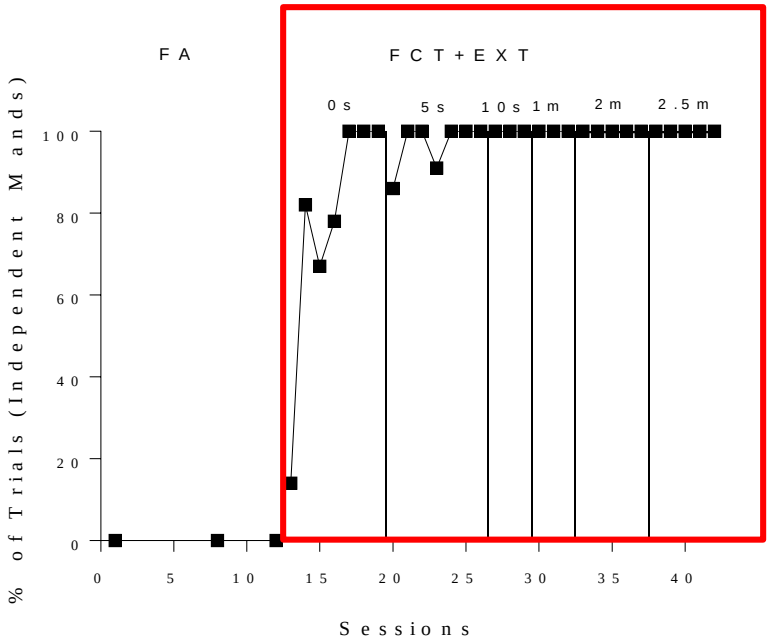
Agios, Greece



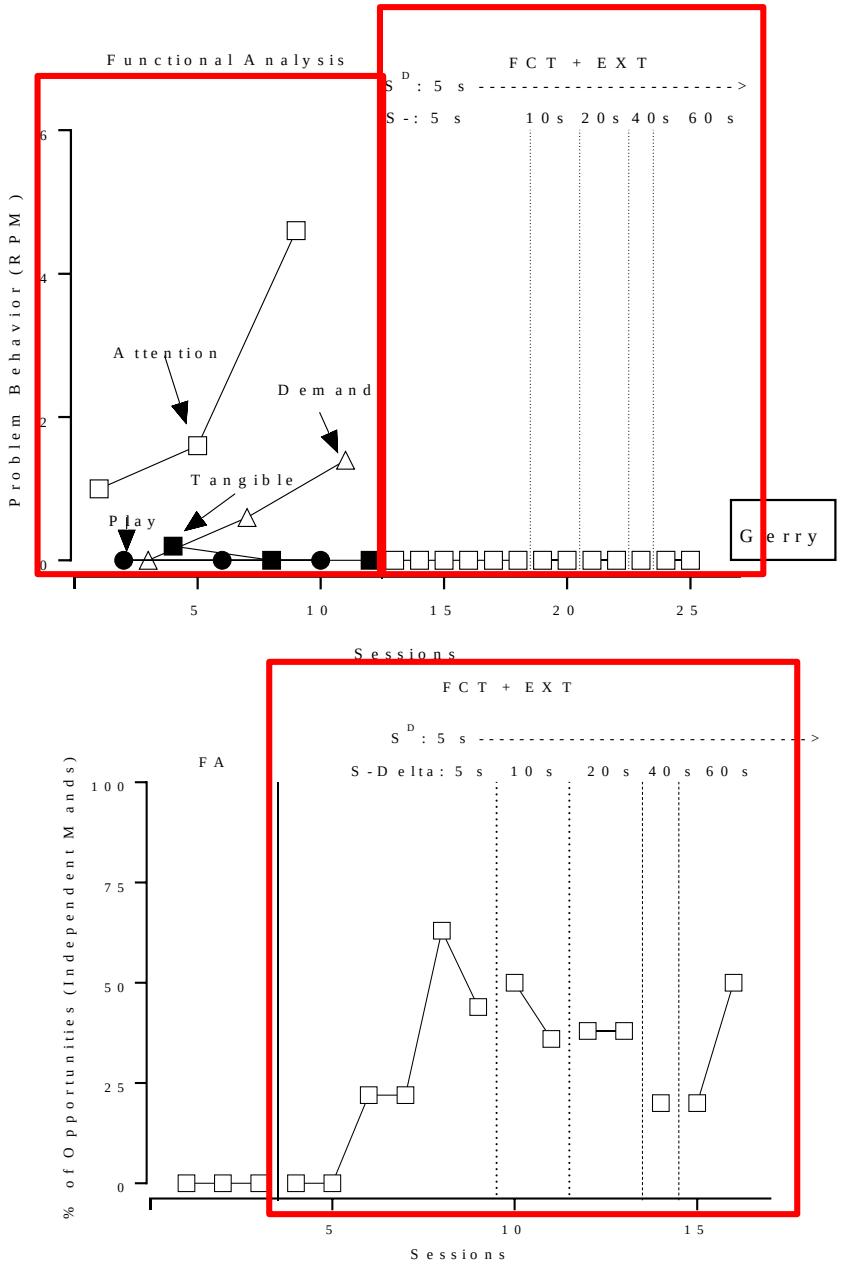
Bursa, Turkey



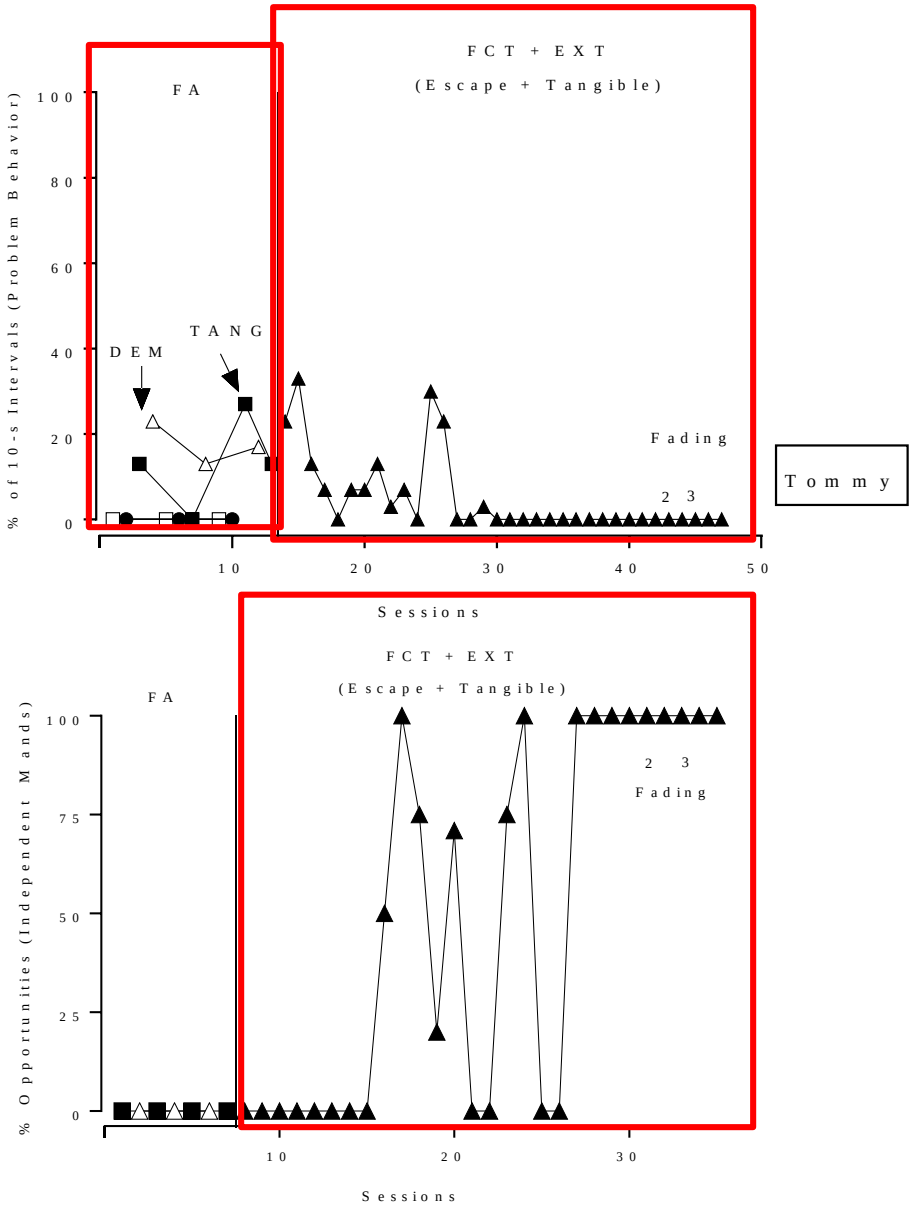




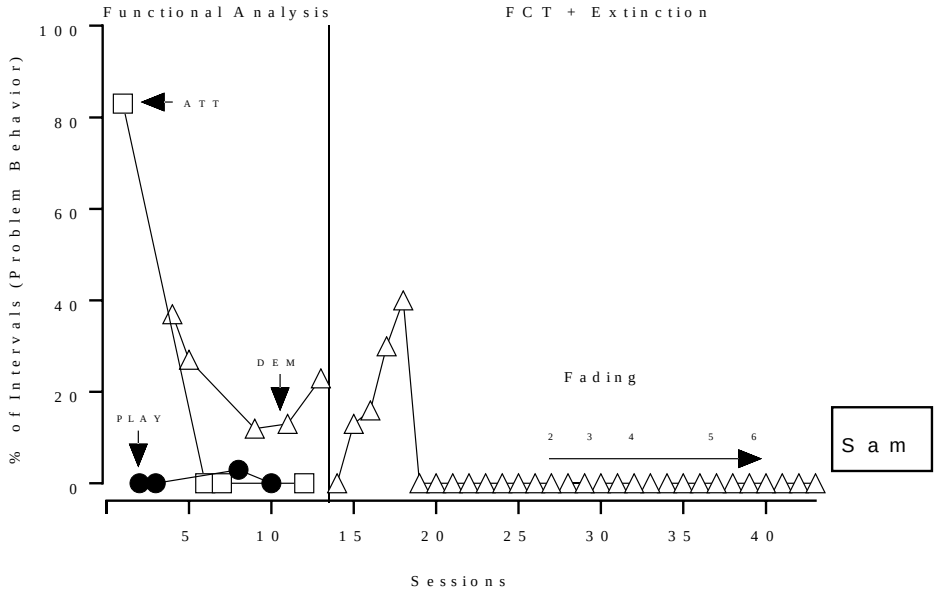
Translator (Spanish) with Family

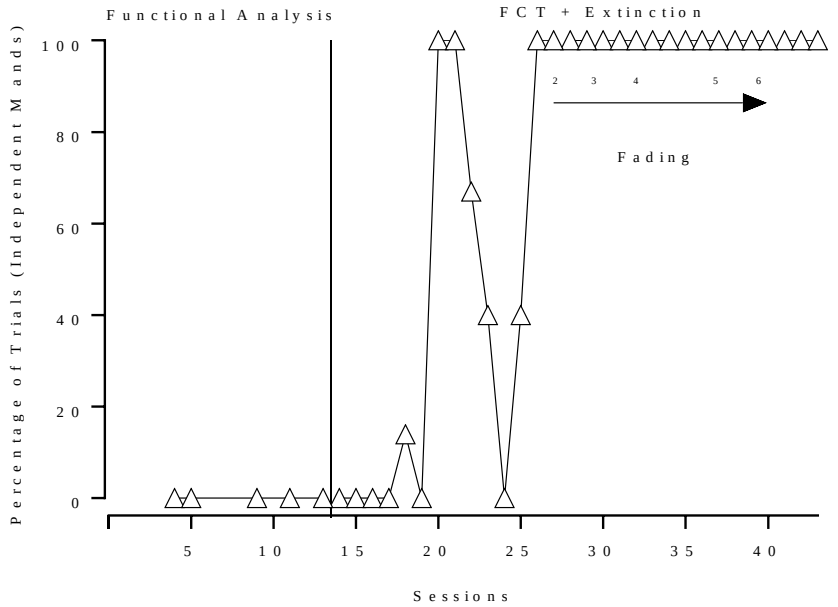


Translator (Arabic) with Behavior Analyst



Interpreter (Russian) in Third Location





Parent Procedural Integrity

- Coached Directly by Behavior Analysts
  - FA: M = 97% (93% - 100%)
  - FCT: M = 99% (98% - 100%)

- Interpreters
  - FA: M = 96% (89% - 100%)
  - FCT: 98% (97% - 100%)

Outcomes to Date

Families Served:

- 47 Families (children aged 3 -13 years)
- 22 Countries
  - Greece, 10
  - Turkey, 2
  - Mexico, 5
  - Saudi Arabia, 4
  - Costa Rica, 1
  - Russia, 1
  - Ukraine, 1
  - Vietnam, 3
  - China, 1
  - Cameroon, 2
  - Ghana, 1
  - Morocco, 3
  - Algeria, 1
  - Egypt, 2
  - Pakistan, 4
  - Oman, 1
  - Nepal, 1
  - England, 1
  - Spain, 1
  - Iran, 1
  - India, 1
  - Nigeria, 1

Outcomes To Date

Treatment Outcomes:

- 27 completed treatment successfully
- 5 in currently in treatment
- 15 did not complete treatment
  - 4 – problem behavior no longer a concern
  - 1 – could no longer afford internet
  - 2 – scheduling conflicts (up to 12 hr time difference)
  - 8- inadequate internet speed

    (Countries in Africa: Morocco 3, Ghana 1, Algeria 1, Egypt 1,
    Countries in Asia: Nepal 1, Pakistan 1)

Comparison of FA and FCT data
Participants from Houston vs 13 countries

32 Houston Participants

- Ages: 2 – 11 years
- Settings: 31 Clinic-Home, 1 Clinic-Clinic
- Languages: 2
- Interpreters: 1

29 International Participants

- Ages: 3 – 13 years
- Settings: 28 Clinic-Home,

1 Clinic-Clinic

- Languages: 10
- Interpreters: 17 (7 at BCBA's location, 1 with family, 8 in a third location)

Comparison of FA data
All FAs: 5-min sessions
Conditions included: Attention, Escape, Tangible*, Play

<u>32 Houston Participants</u>

- 30 differentiated FAs
- 2 - no PB (6%)
- 0 FA Modifications

<u>29 International Participants</u>

- 26 differentiated FAs
- 3 – no PB (10%)
- 1 FA Modification (escape from touch)

FA Results

Houston Participants: 30 FAs

- Tangible + Escape: 10 (33%)
- Tangible: 7 (23%)
- Attention + Tang + Escape: 6 (20%)
- Attention: 3 (10%)
- Attention + Tangible: 2 (7%)
- Escape: 1 (3%)
- Automatic: 1 (1%)
- Attention + Escape: 0

International Participants: 26 FAs

- Tangible: 8 (31%)
- Escape: 7 (27%)
- Tangible + Escape: 4 (15%)
- Attention + Tang + Escape: 3 (12%)
- Attention: 1 (4%)
- Attention + Tangible: 1 (4%)
- Attention + Escape: 1 (4%)
- Escape from Touch: 1 (4%)
- Automatic: 0

Functional Communication Training

Houston Participants: 23

- 20 completed (87%)
  - 100% met criterion
- 3 withdrew (13%)

International Participants: 26

- 21 completed (91%)
  - 100% met criterion
- 2 withdrew (9%)

Treatment Duration

Houston Participants:

Average 19 appointments

Range: 5-31 appointments

International Participants:

Average 13 appointments

Range: 8-30 appointments

Acceptability Rating (1-7):

- How acceptable do you find the treatment to be regarding your concerns about your child?

Houston Participants:

Item on Questionnaire	PRE	POST
Treatment	6.9 (4-7)	6.6 (4-7)

International Participants:

Item on Questionnaire	PRE	POST
Treatment	6.5 (5-7)	6.7 (6-7)

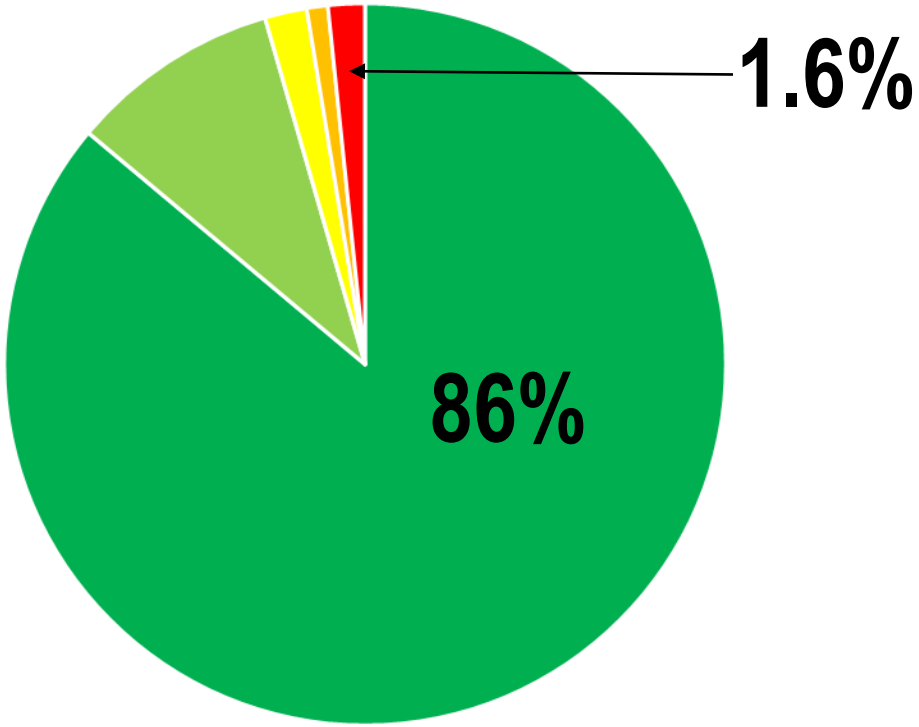
Hardware

Devices	32 Houston Participants	29 International Participants
Phone	20 (63%)	17 (59%)
Laptop	6 (19%)	6 (21%)
iPad	5 (16%)	3 (10%)
Desktop	1 (3%)	3 (10%)

Connectivity Ratings

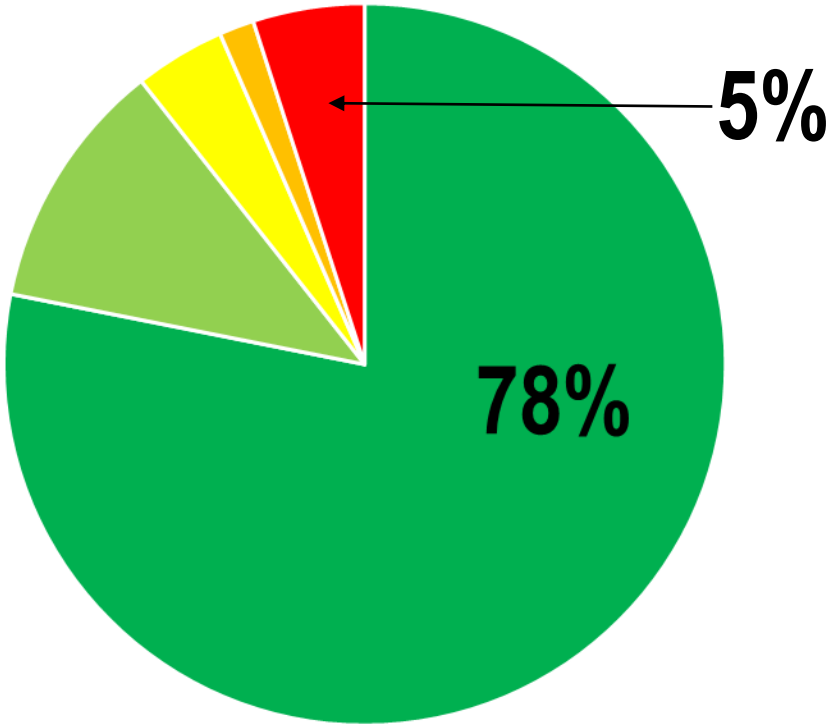
Houston Participants:

424 Appointments, 29 Participants



International Participants:

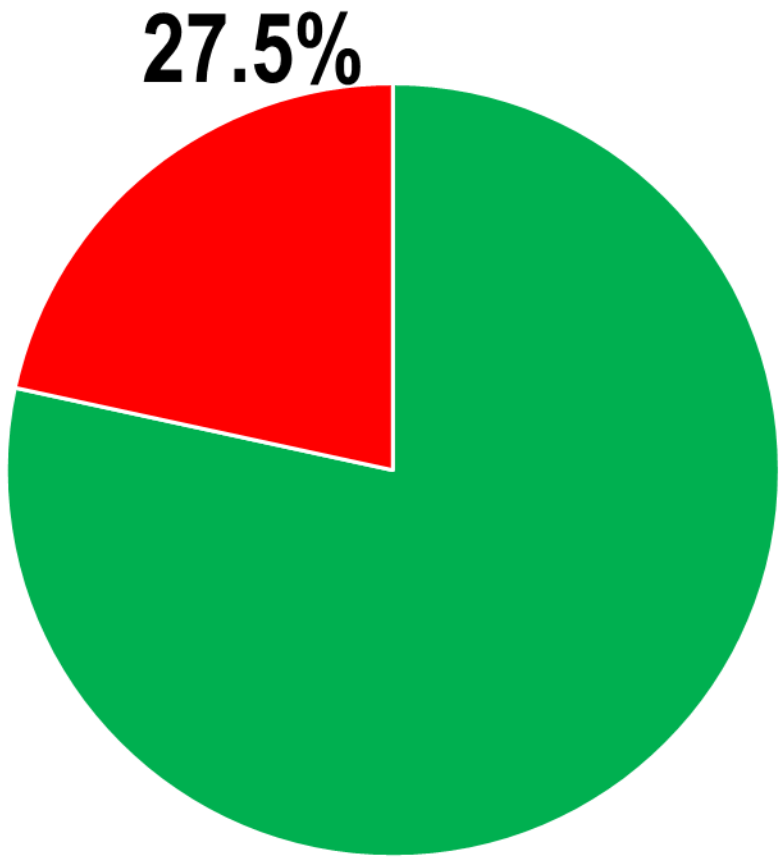
320 Appointments, 26 Participants



Cancelled Appointments

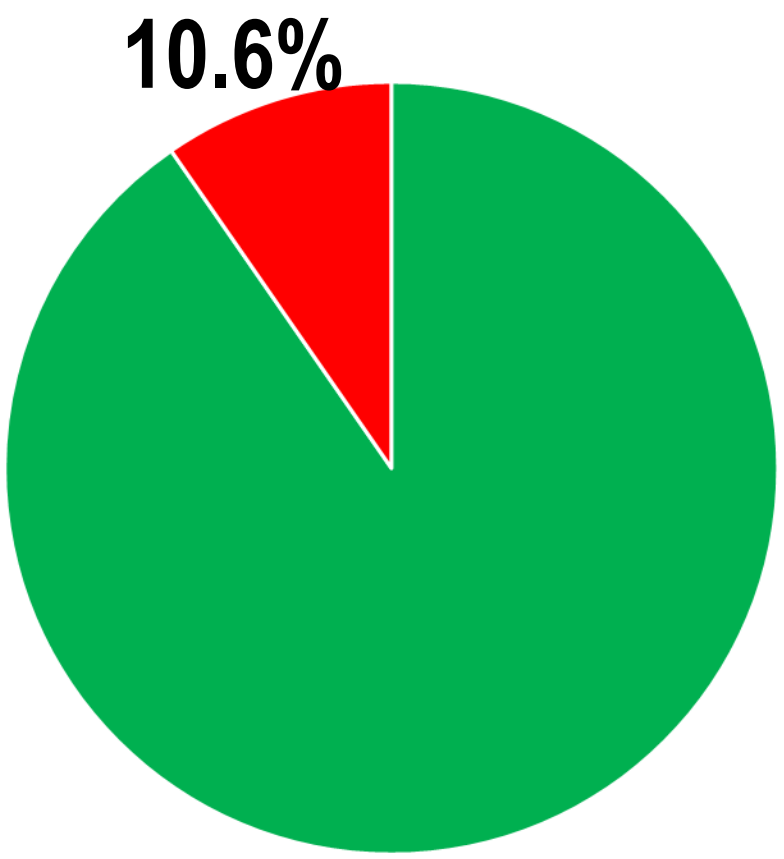
Houston Participants:

476 Appointments, 31 Participants



International Participants:

356 Appointments, 29 Participants



Outcomes To Date

Educational Series for Caregivers and Professionals:

19 countries, 55 presentations, ~2,880 attendees

- Greece (Veroia, Naoussa)
- Mexico
- Russia
- Nigeria (Asaba, Kaduna, Port Harcourt)
- Nepal
- Morocco
- Pakistan (Karachi, Peshawar, Kashmir, Islamabad, Rawalpindi, Lahore)
- Cameroon
- Liberia
- Saudi Arabia
- Namibia
- South Africa
- France
- Vietnam
- Ghana
- Jamaica
- Ivory Coast
- Philippines
- Bangladesh

Prince Sultan Military Medical Facility
Riyadh, Saudi Arabia

Karachi, Pakistan
Private School

Kaduna, Nigeria
Private School

Telehealth ABA World Project

Connecting to College

Focused Skills Intervention

Severe Behavior Disorders Research Clinic

Speaker Series

Verbal Behavior Clinic

Vocational Program

Telehealth ABA World Project

The Telehealth ABA World Project aims to empower parents and professionals who work with children with autism and other developmental disabilities in countries around the world. We aim to improve the quality of life for families in communities that don't have access to behavioral services.

Therapists at University of Houston-Clear Lake provide services via the internet by establishing two-way interactive video connections with families and professionals who reside in other countries. Interpreters are available to assist with some sessions. All our services are free.

Our Services

Caregiver Training

We provide assessment and treatment services for families of children who engage in serious behavior disorders, such as aggression and self-injury. The following are eligibility requirements:

- Child has a developmental disability, such as autism
- Child is 18 months - 7 years of age
- Child engages in serious problem behavior on a daily basis (determined by an initial assessment)
- Family has access to an internet-enabled device (laptop, computer, tablet, smartphone)
- Family has access to high-speed internet in their home or in a community setting

https://www.facebook.com/TelehealthABA/

Like our Facebook page and follow us on twitter

Help us **#savetheworldwithaba**

Telehealth ABA World Project

University of Houston Clear Lake

The Wild Frontier: Telehealth ABA Service Challenges and Some Potential Solutions

CADD
CENTER FOR AUTISM AND DEVELOPMENTAL DISABILITIES

My Collaborators

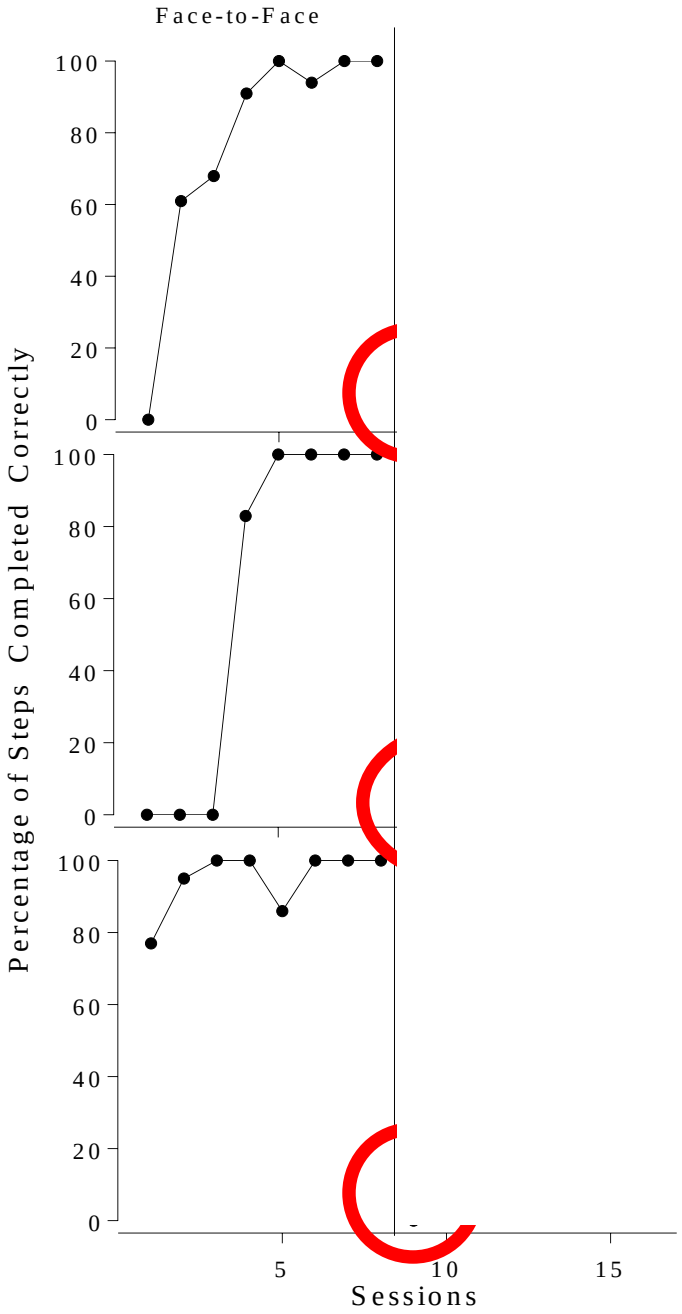
Matthew J. O'Brien[1], Leslie Neely[2], Nathan A. Call[3], Loukia Tsami[4], Kelly M. Schieltz[1], Wendy K. Berg[1], Jessica Graber[5], Pei Huang[1], Todd Kopelman[1], and Linda J. Cooper-Brown[1]

[1]University of Houston, Clear Lake; [2]University of Iowa; [3]University of Texas at San Antonio; [4]Marcus Institute; and [5]Autism Treatment Center of San Antonio

Do BCBAs Need Specialized Training?

- Leslie Neely, Ph.D. – University of Texas at San Antonio and Jessica Graber, Ph.D. – Autism Treatment Center
- Transfer of parent training skills from in-person to remote modalities
- Three behavior analysts – 2 years experience

Fidelity Checklist =
14 “core items”



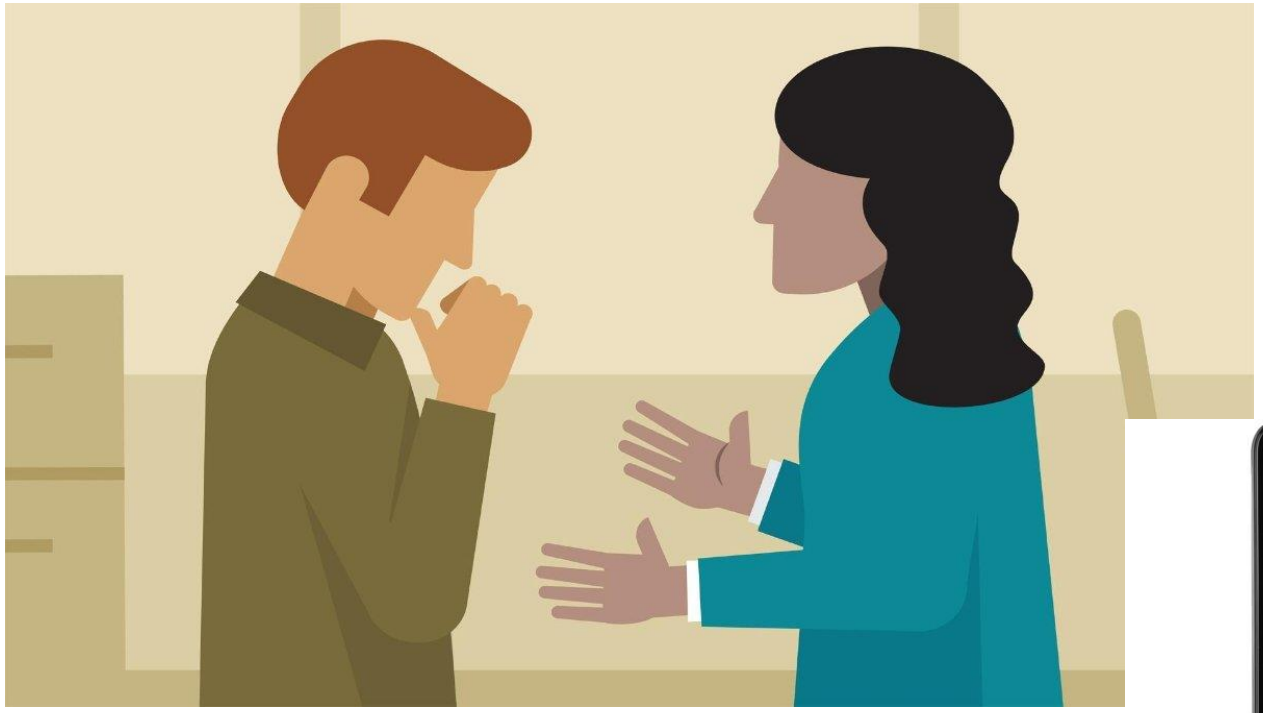
Fidelity Checklist =
14 core + 9 suppl items

What Can We Do?

- Identify challenges and possible solutions
- Empirically evaluate solutions
- Develop competences/goals
- Develop training curriculum

Method

- 18 practitioners (1-20 years of experience [0-6 telehealth])
- Four different sites (Texas, Iowa, Georgia)
- 237 families (January 2015 and April 2019)
  - Children: 1.7 – 16 years old
- 2,242 total appointments
- FA/FCT



VERSUS

Zavio NVR LAN: Zavio B6210
Playing (7388.7 kbps)
Total bitrate: 21096.2 kbps

Categories of Challenges

- Technical Issues

Categories of Challenges

- Challenges with Remote Viewing

Categories of Challenges

- Disruptions in Client's Environment

Categories of Challenges

- Other Issues Related to Client Behavior

Categories of Challenges

- Issues Related to Caregiver Behavior

Categories of Challenges

- Issues at the Practitioner's (Host) Site

Behavior Analysis: Research and Practice
2017, Vol. 17, No. 4, 298–311

© 2017 American Psychological Association
2372-9414/17/$12.00 http://dx.doi.org/10.1037/bar0000053

Ethical Considerations in the Design and Implementation of a Telehealth Service Delivery Model

Joy S. Pollard
Behavior Change Institute, Oakland, California, and
Stanford University School of Medicine

Kathleen A. Karimi and
Michelle B. Ficcaglia
Behavior Change Institute, Oakland, California

Behavior Analysis: Research and Practice
2017, Vol. 17, No. 4, 312–324

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2372-9414/17/$12.00 http://dx.doi.org/10.1037/bar0000074

Ethical Considerations When Delivering Behavior Analytic Services for Problem Behavior via Telehealth

Patrick W. Romani
University of Colorado, Anschutz Medical Campus,
and Children's Hospital Colorado,
Aurora, Colorado

Kelly M. Schieltz
University of Missouri

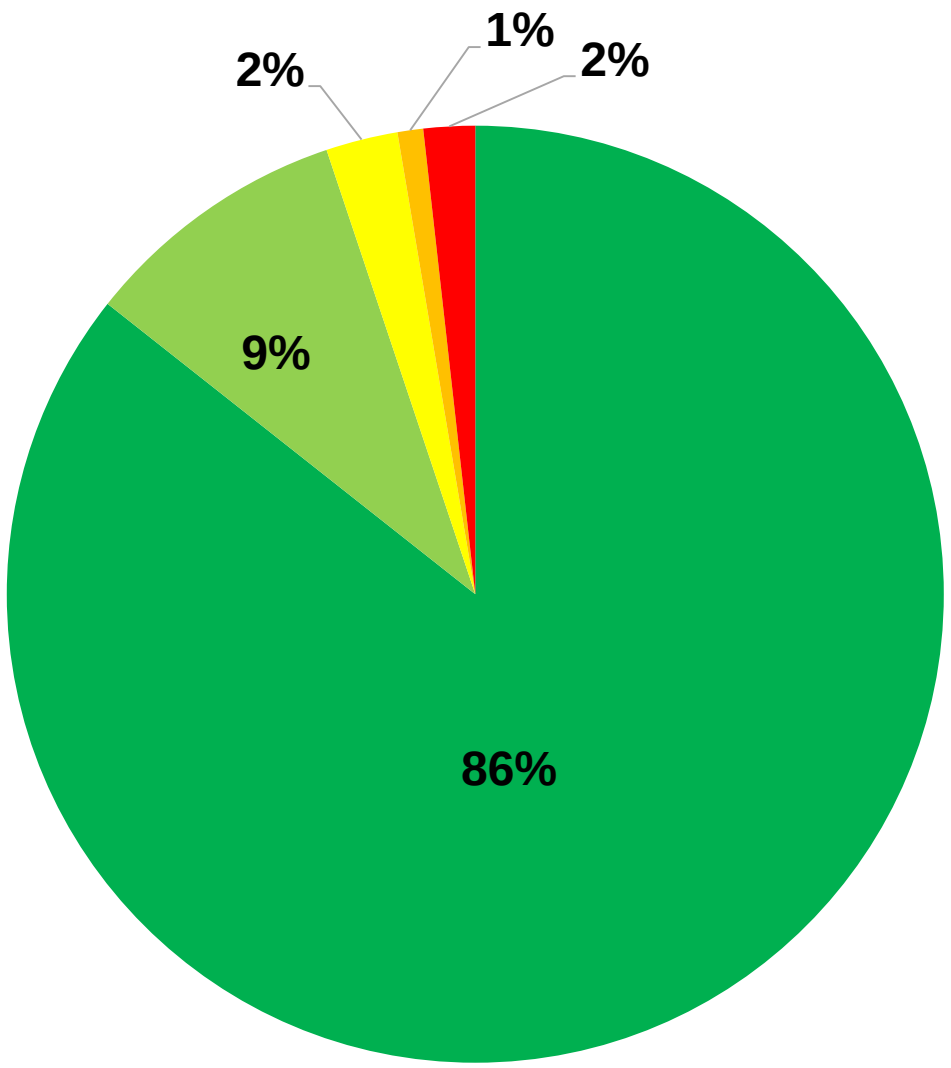
Challenges and Potential Solutions

- Technical Issues
  - Hardware unavailable → Loaners; alt. facility
  - Connectivity issues → Upgrade; reduce # devices

US (Texas) Participants
N=52, 564 Appointments

Percentage of Appt Completed

- >92%
- 73%-91%
- 55%-72%
- 20%-54%
- <20%



Challenges and Potential Solutions

- Technical Issues
  - Hardware unavailable → Loaners; alt. facility
  - Connectivity issues → Upgrade; reduce # devices
  - Difficulty using software → TA; instruct via phone
  - Hardware/software failures → Backups

- For HIPAA Compliance:
  - Software license must include Business Associate Agreement (BAA)

Behav Analysis Practice
DOI 10.1007/s40617-014-0031-2

ABAI
Association for Behavior Analysis International

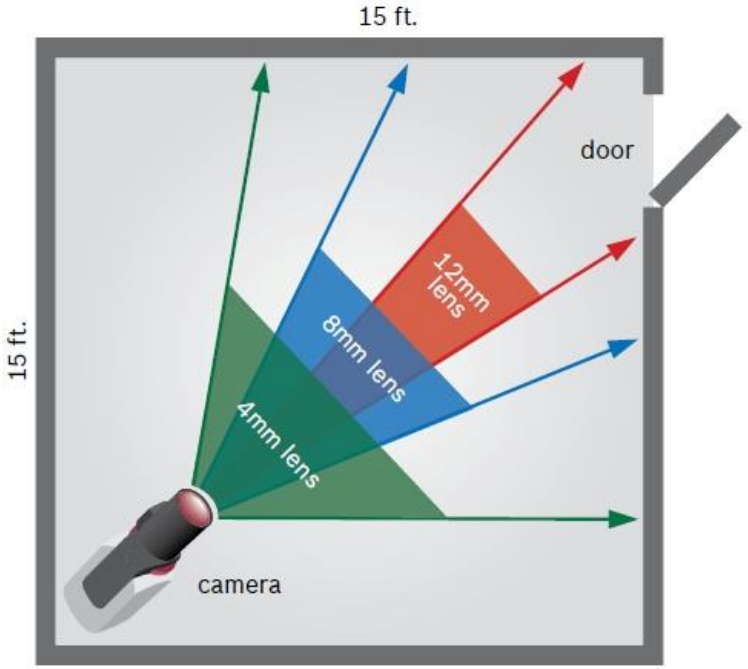
TECHNICAL ARTICLE

Guidelines for Developing Telehealth Services and Troubleshooting Problems with Telehealth Technology When Coaching Parents to Conduct Functional Analyses and Functional Communication Training in Their Homes

John F. Lee · Kelly M. Schieltz · Alyssa N. Suess · David P. Wacker · Patrick W. Romani · Scott D. Lindgren · Todd G. Kopelman · Yaniz C. Padilla Dalmau

Challenges and Possible Solutions

- Challenges with Remote Viewing
  - Client not always in view



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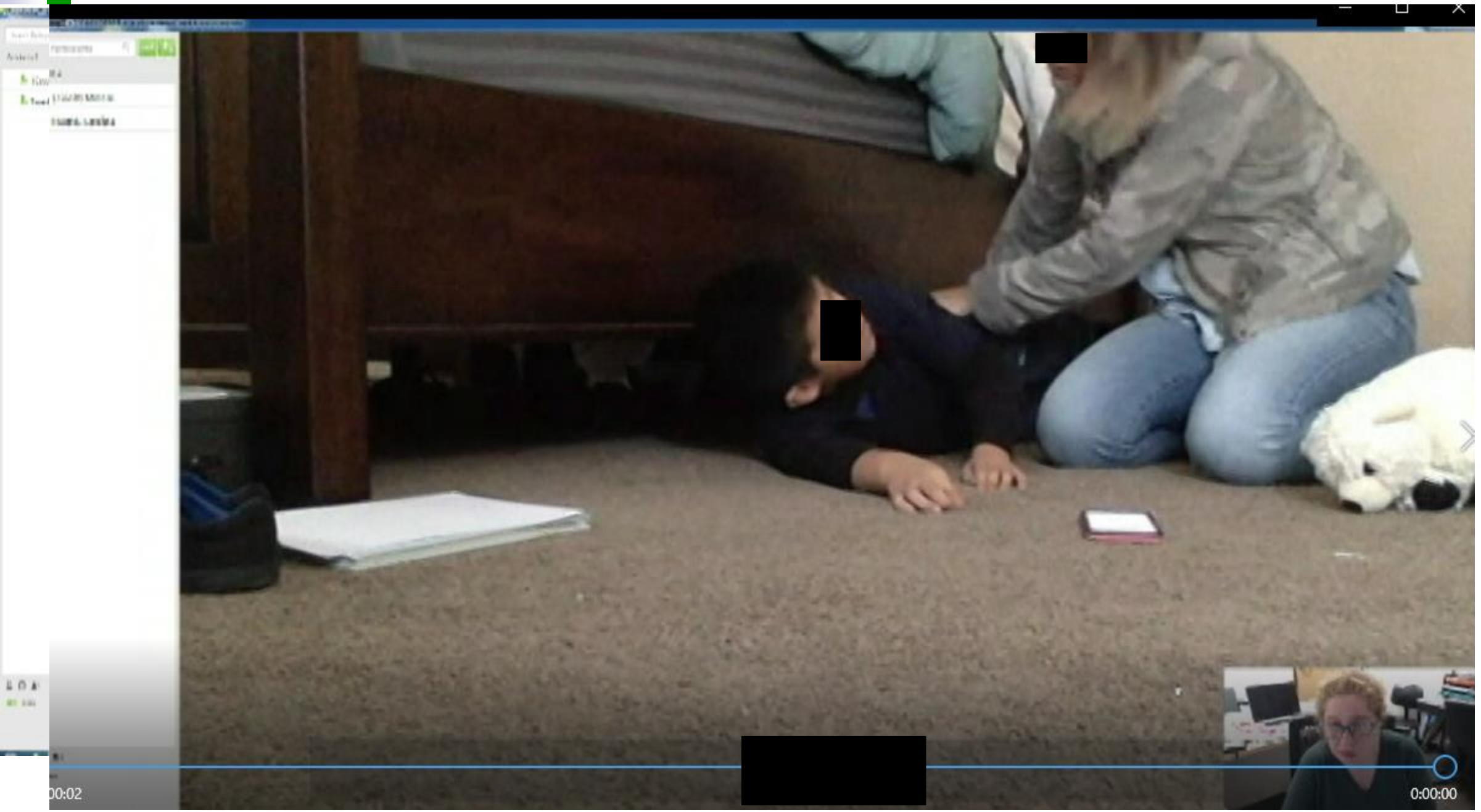
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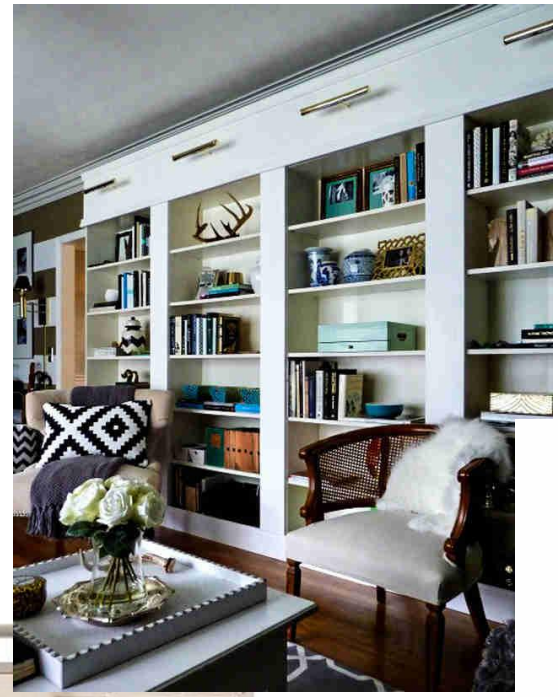
- Challenges with Remote Viewing
  - Client not always in view



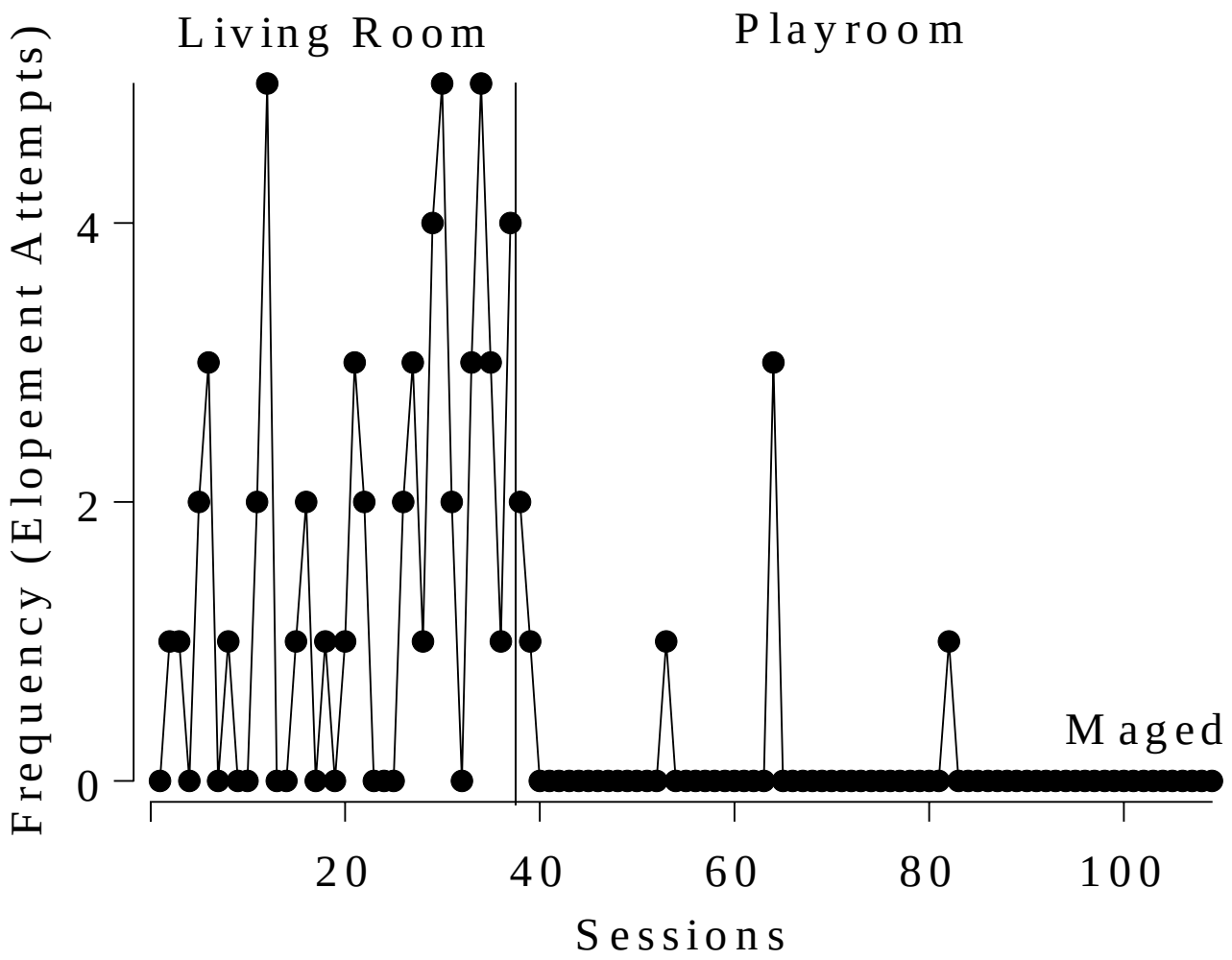
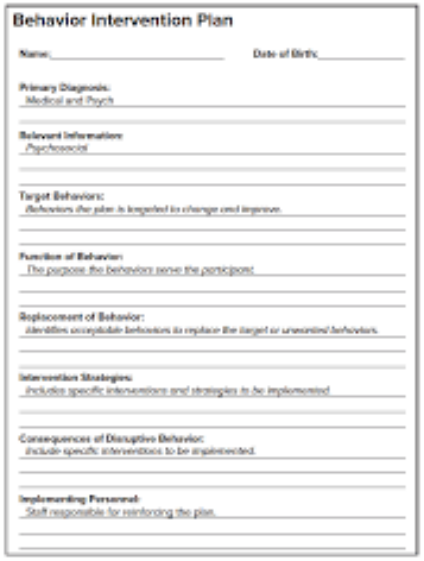


Figure 2. Frequency of Maged's elopement attempts during sessions in the initial location (living room) and after re-locating sessions to a playroom

- Challenges with Remote Viewing
  - Difficulty seeing/hearing client behavior
  - Difficulty hearing practitioner


Behavior Intervention Plan

Name:_____ Date of Birth:_____

Primary Diagnosis:
Medical and Psych

Relevant Information:
Psychosocial

Target Behaviors:
Behaviors that plan is targeted to change and improve.

Function of Behavior:
The purpose the behaviors serve the participant

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Identifies acceptable behaviors to replace the target or unwanted behaviors.

Intervention Strategies:
Includes specific interventions and strategies to be implemented

Consequences of Disruptive Behavior:
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Implementing Personnel:
Staff responsible for reinforcing the plan.

Challenges and Possible Solutions

- Disruptions in Client's Environment

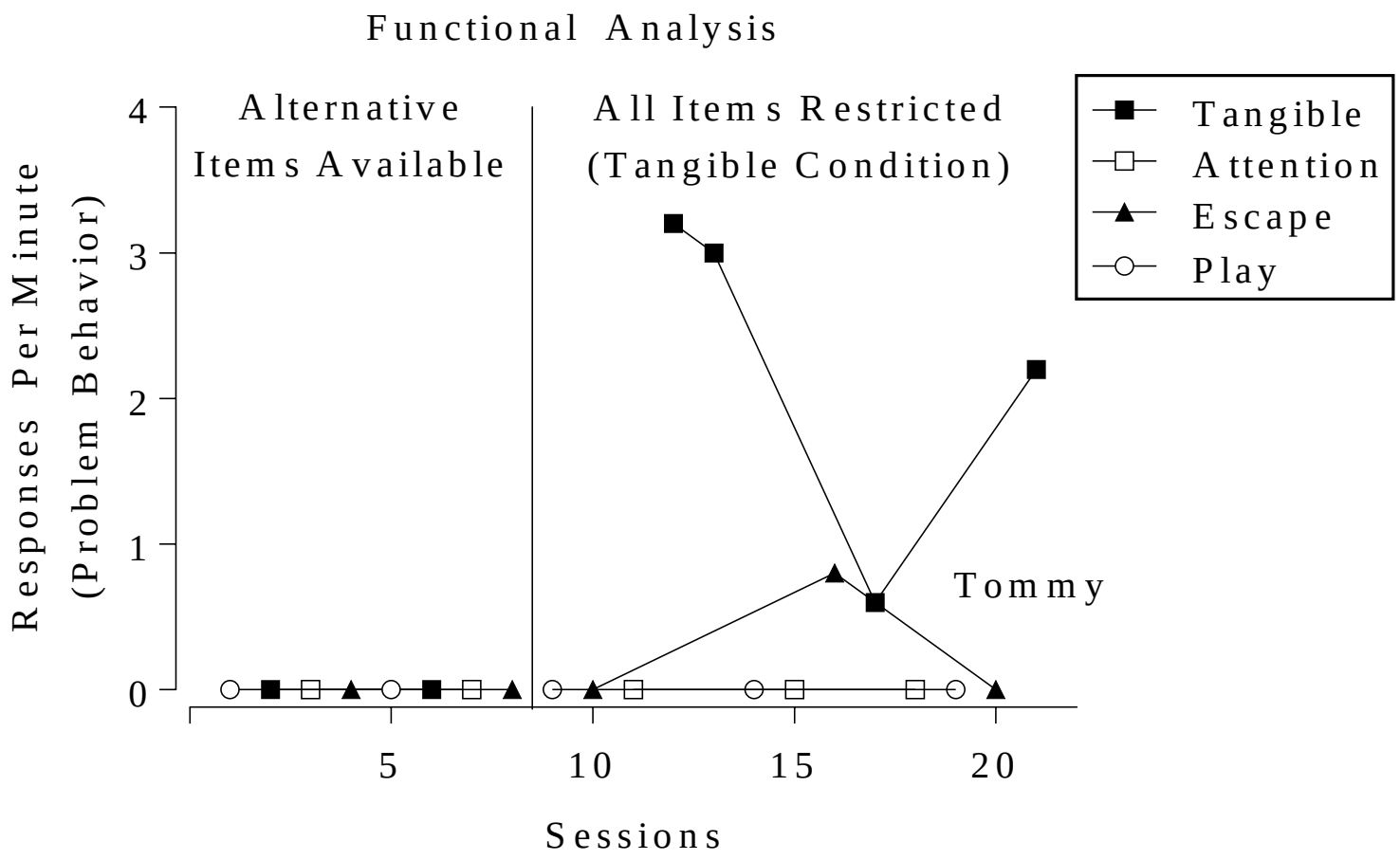


Figure 3. Responses per minute of Tommy's problem behavior during the inital sessions of the functional analysis and after items were restricted in the tangible condition of the functional analysis

Disruptions in Client's Environment

- Disruptions in Client's Environment

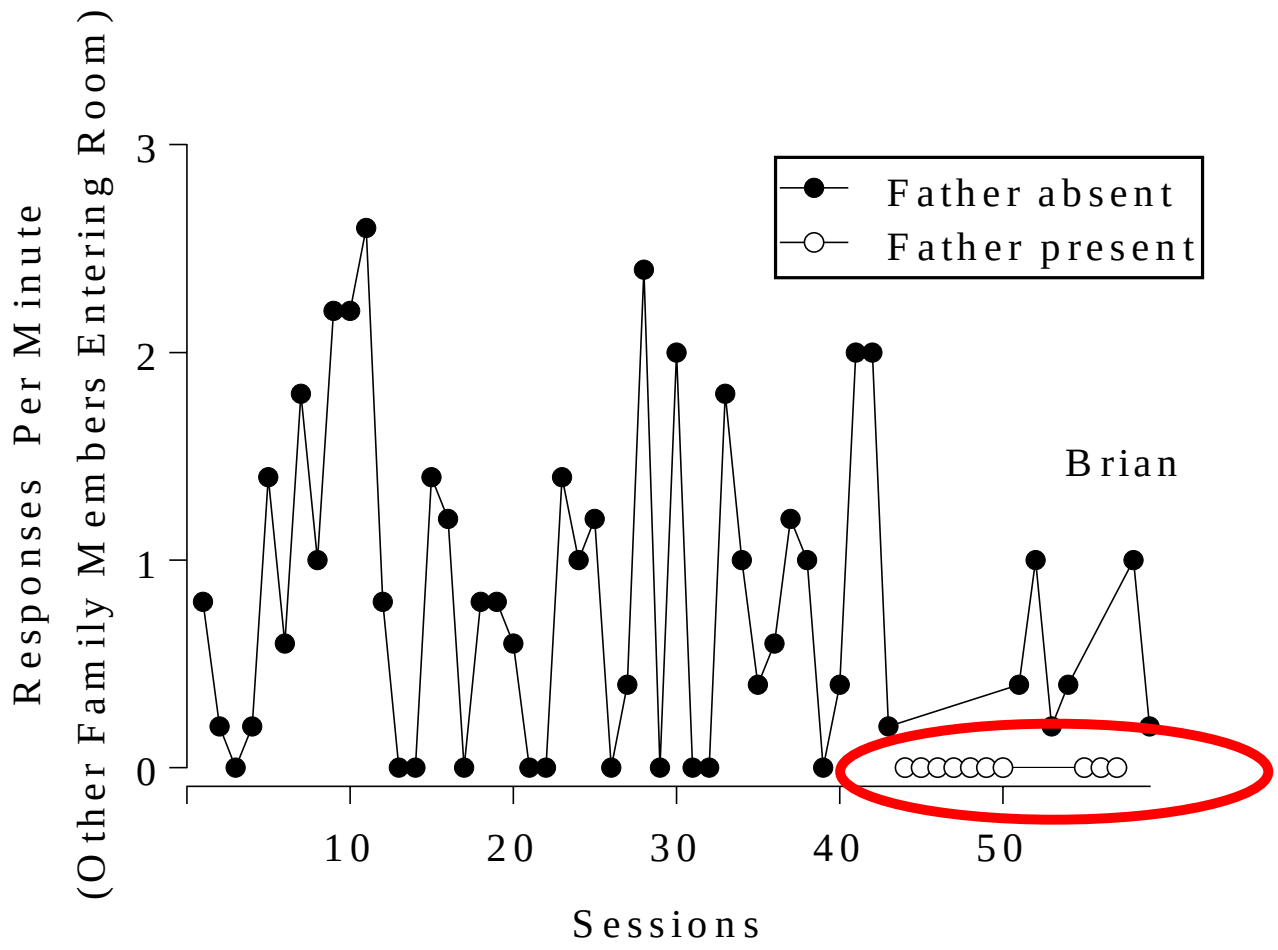


Figure 4. Responses per minute of family members entering the room during Brian's sessions when his father was present versus absent in the home

Challenges and Possible Solutions

- Other Issues Related to Client Behavior
  - Escalation in problem behavior

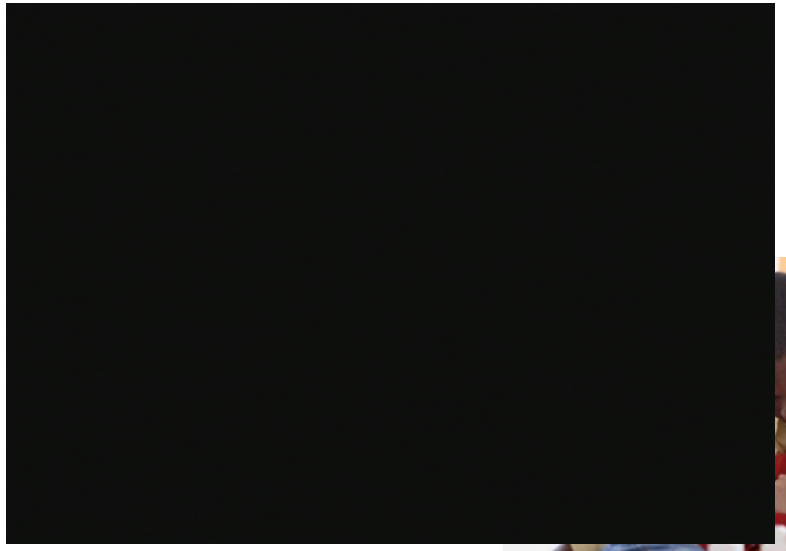
!
CAUTION

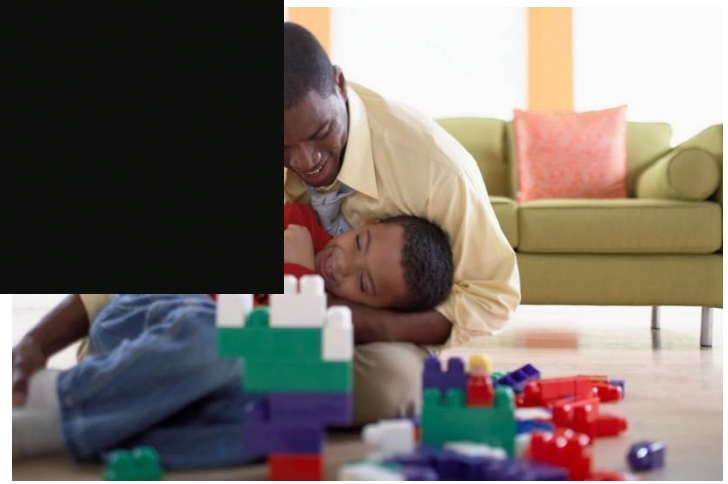
- Other Issues Related to Client Behavior
  - Escalation in problem behavior

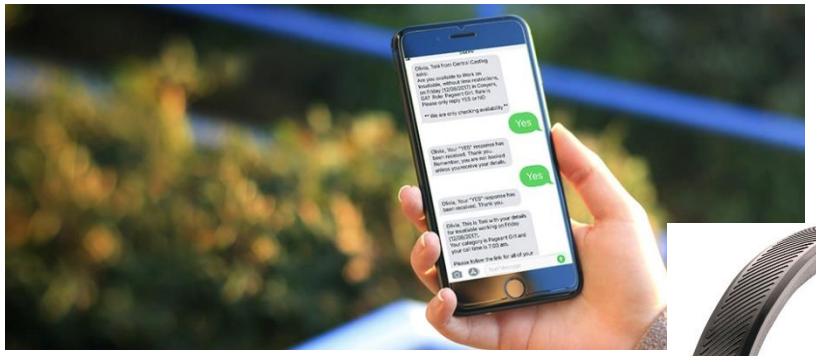
- Other Issues Related to Client Behavior
  - Reactive effects of camera

Possible Solutions

- Other Issues Related to Client Behavior
  - Reactive effects of camera







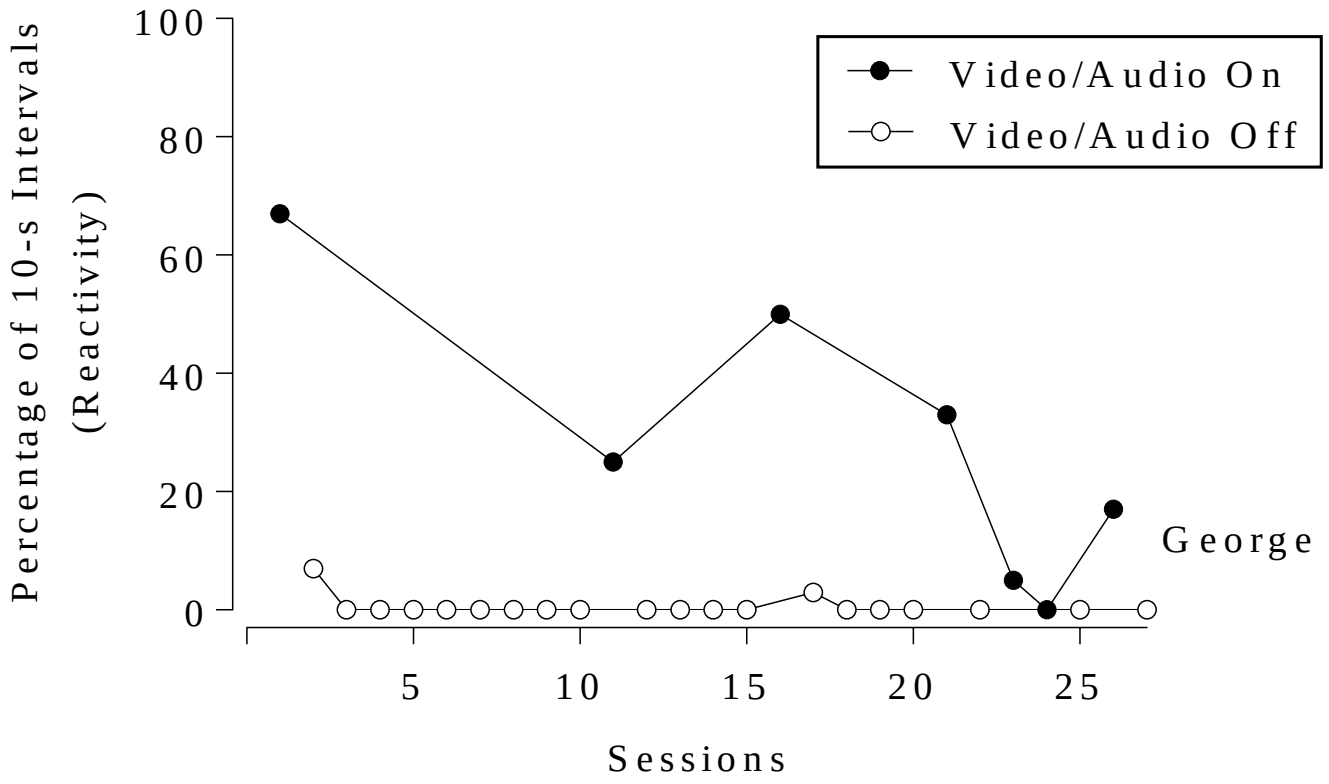
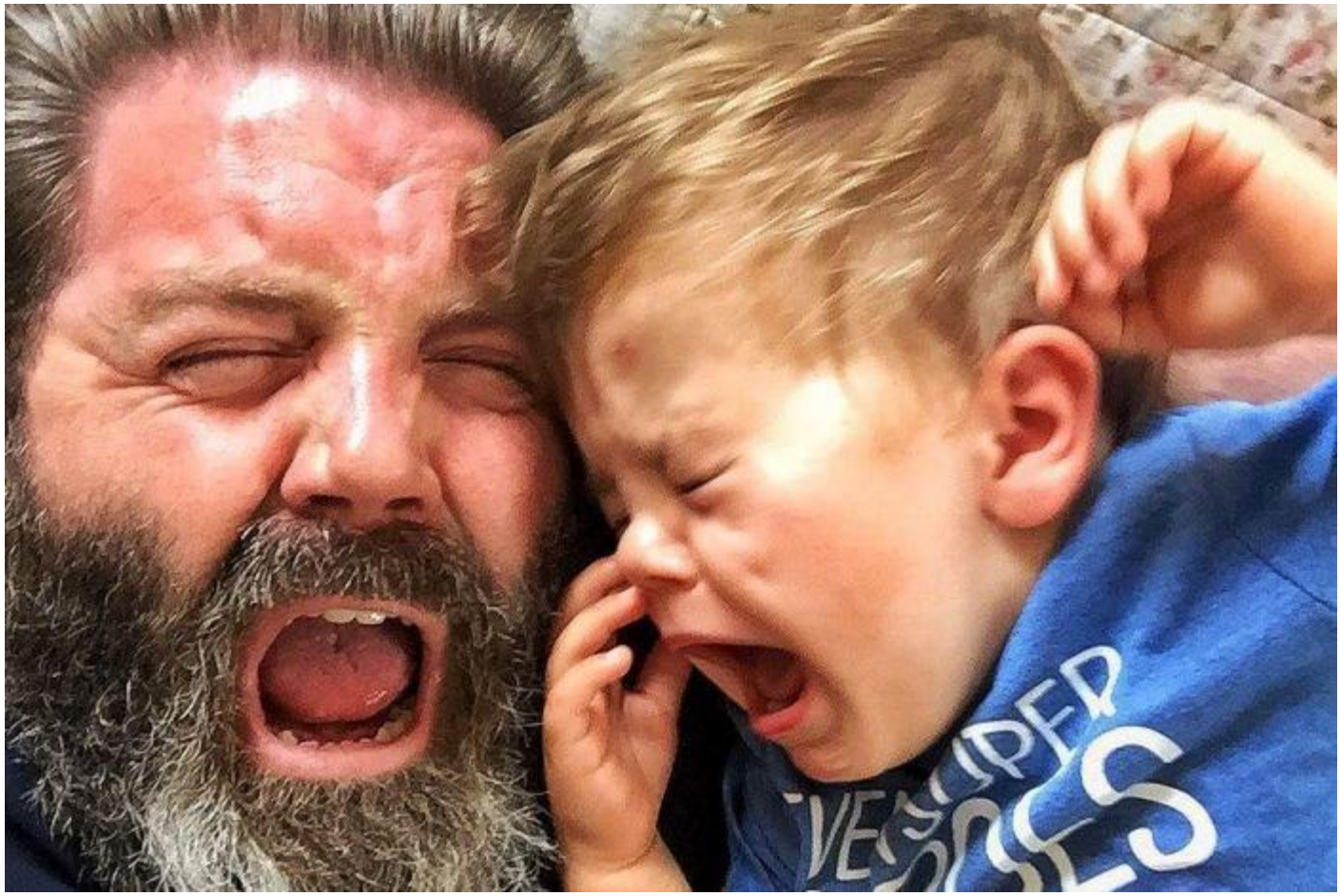


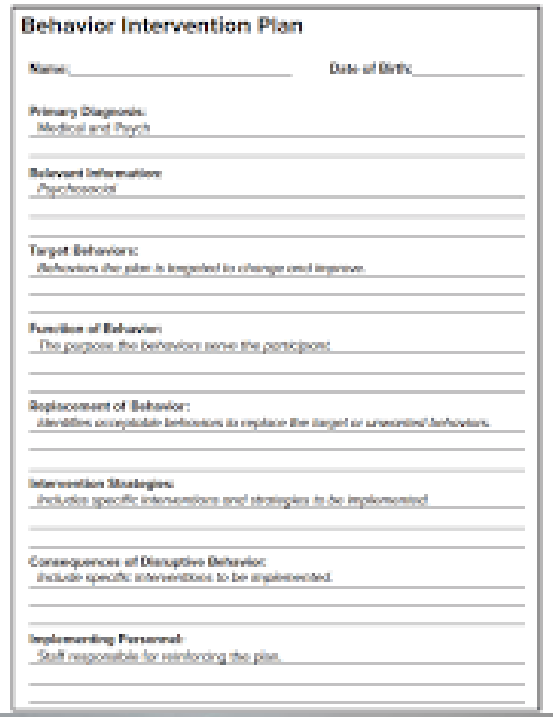
Figure 5. Percentage of 10-s intervals with George's reactive responses during sessions with the video and audio feed turned on versus off

Challenges and Possible Solutions

- Issues Related to Caregiver Behavior



- Issues Related to Caregiver Behavior
  - Insensitivity to vocal instructions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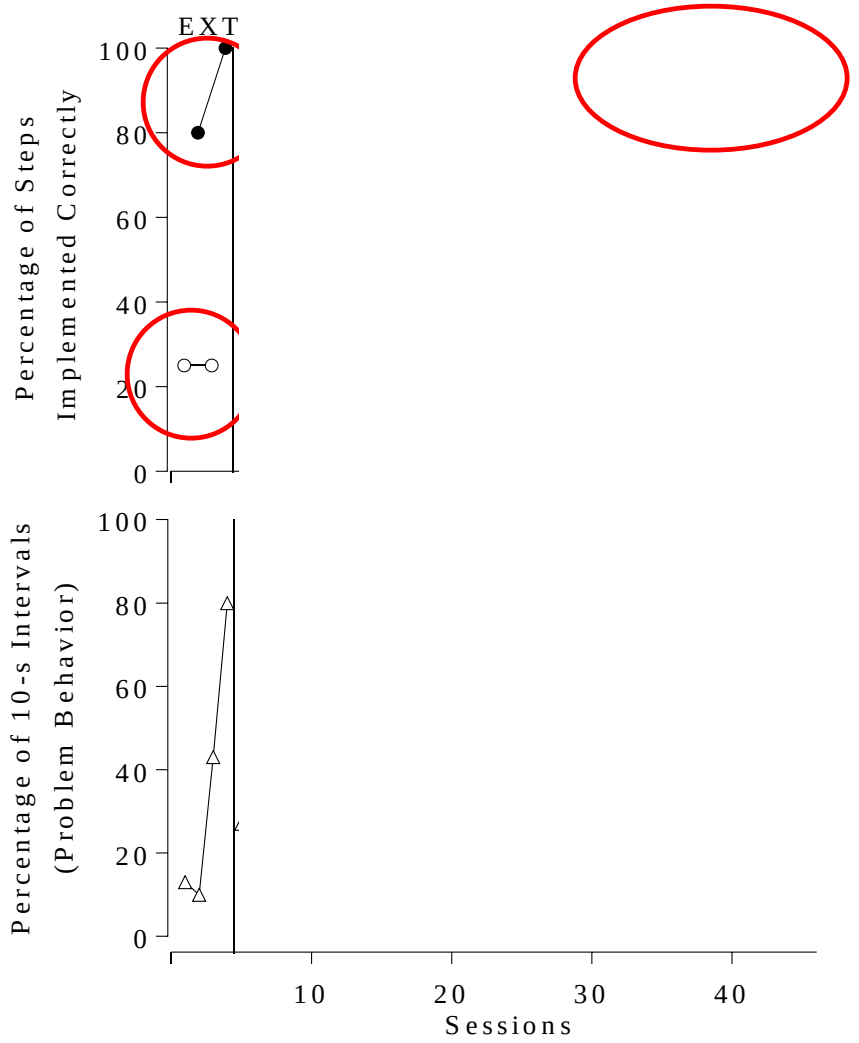

Figure 6. Percentage of treatment steps implemented correctly by Calvin's father versus mother (top panel) and percentage of 10-s intervals with problem behavior for Calvin (bottom panel) across treatment sessions

Categories of Challenges

- Issues at the Practitioner's (Host) Site

General Recommendations

- Schedule initial troubleshooting session
  - Send written guidelines in advance
  - Initially work with caregiver alone
  - Troubleshoot with play/leisure sessions, preference assessment

General Recommendations

- Tailor terms of service
  - Expectations and roles
  - Agreements about loaners
  - Limitations of remote services
  - Potential limits to confidentiality
- Recruit IT professional for team
- Maintain phone contact with caregiver
- Video record all sessions

EVIDENCE

Training Curriculum…. A Beginning
Drs Neely and Graber

- Fidelity Checklist – 9 supplementary items
  - Arranges for phone contact
  - Checks connection prior to session
  - Checks speaker, mic, and camera prior to session
  - Prepares room for optimal visibility and professionalism
  - Prepares environment for confidentiality
  - Begins session with check of systems
  - Provides extra time during pauses in conversation
  - Provides enhanced verbal descriptions
  - Makes modifications to limit reactivity as necessary

Training Curriculum…. A Beginning

- But we still need to determine
  - Who is appropriate for telehealth services?
  - What types of ABA services are appropriate?

QUESTIONS?