

# The Practical Functional Assessment: Scaling A Practitioner Model Aligned to Best Practice

Cindi Kennedy, Edward Sanabria, Hillary Laney, Brittany Bauerle, Liisa Podosek, & Kalyn Riggs

## Introduction

- The evolution of Functional Analysis (FA) in behavior analysis reflects a progression in methodology, conceptualization, and practical application, and is considered a critical component for informing behavioral treatments (Iwata et al., 1982/1994; Hanley et al., 2015; Beavers et al., 2013; BACB, 2014).
- Despite being the gold standard, many clinicians avoid using traditional FAs due to resource constraints, lack of training, time demands, safety concerns, and the risk of re-traumatizing individuals (Hanley, 2012; Oliver et al., 2015; Roscoe et al., 2015; Rajaraman et al., 2022; Hanley, 2021).
- The Practical Functional Assessment (PFA) aims to provide a comprehensive yet streamlined functional assessment process compared to traditional FAs by using open-ended interviews and alternating synthesized test and control conditions (Iovino et al., 2023; Hanley, 2018; Warner et al., 2020).
- The PFA demonstrates its use as a pragmatic functional assessment methodology (Coffey et al., 2019), but questions remain about its reliability and utility when implemented across a large, diverse organization providing applied behavior analysis services (Fisher et al., 2016).
- The present study examines the large-scale adoption, procedural integrity, reliability, and treatment utility of implementing the PFA within a sizeable provider of applied behavior analysis services to demonstrate the feasibility of conducting this innovative functional assessment approach with high fidelity across its services.

## Methodology

### Participants

- Clients: Individuals with an autism diagnosis receiving insurance-funded Applied Behavior Analysis (ABA) services at Centria Autism or Life Skills Autism Academy. Additional characteristics are displayed in Table 1.
- Adults: Multi-tiered treatment teams composed of behavior technicians, clinical supervisors, Clinical Leadership Residents (CLR), and/or Directors. These roles are defined in Table 2.

### Settings

- Practical functional analyses (PFAs) were conducted during regularly scheduled Applied Behavior Analysis (ABA) sessions across clinic, home, or community settings. Additional characteristics are displayed in Table 1.

### Conditions

- Control Condition: Synthesized Reinforcement (SR) Context in which all suspected reinforcers are available to the client non-contingently and the client is observed to be Happy, Relaxed, and Engaged (HRE).
- Establishing Operation (EO) Condition: Client-specific context associated with a history of interfering behaviors when introduced.

### Response Measures

- Participant Behaviors
  - R2 behaviors- Individually defined low-intensity, low duration (under 30 seconds) behavioral indicators that signaled an aversive condition is present and is reported to proceed R1 behaviors.
  - R1 behaviors- Individually defined high-intensity, high-duration (over 30 seconds), and/or behaviors that pose an imminent risk of harm to the client, others, or the environment.
  - Happy Relaxed and Engaged (HRE)- Individually defined behavioral indicators that signaled an absence of aversive stimuli and the presence of reinforcers. Associated with a zero rate of interfering behavior and high levels of motivation.
- Control: Control was considered achieved when a minimum of three replications of the EO progression resulted in the evocation of either a precursor or dangerous behavior during the EO context and the presence of HRE and absence of either a precursor or dangerous behavior during the control condition.
- Duration: Onset of first control condition and ended after a minimum of 30 seconds was established in the control condition where the child was observed to be HRE following the third or more presentation of the EO condition.

### Procedure

- Training Models:
  - Clinicians completed a 10-hour asynchronous course provided by an outside source or Clinicians attended a two-hour asynchronous training on the PFA and its components designed by Centria.
  - Groups of two or three clinicians attended two separate two-hour design meetings with a coach to design the control condition and three EO conditions and to define the participant behaviors. Clinicians also designed how the EO condition would be progressed during the PFA.
  - Behavior technicians completed a 1-hour asynchronous training on the PFA and its components designed by Centria. Technicians implementing also were invited to attend the two-hour design meeting.
- PFA Implementation:
  - Each PFA included a client, an implementer (Supervising Clinician and/or Technician), and a coach (CLR and/or Director).
  - The coach reviewed the procedure steps with the implementer and then guided the implementer to conduct the PFA until control had been reached through Bluetooth via zoom with the coach either in person, on-site in a different room or remote from a different location. See Table 3.
  - Data was collected using the IISCA App by the coach.
  - The analysis followed the procedures outlined by Iovino et al. (2022), with deviations in the definition of R1/R2 behavior and the consideration of control.

**Table 1**  
Demographic analysis of clients who participated in the PFA

Category	n	%	Category	n	%
Gender			State (12)		
Female	99	31.5	Arizona	55	17.5
Male	214	68.5	California	4	1.3
Age (Years)			Georgia	4	1.3
2-5	169	54.1	Indiana	29	9.2
6-10	121	38.5	Massachusetts	8	2.5
11-17	22	7	Maryland	7	2.2
22	1	.3	Michigan	128	40.8
Setting			Minnesota	1	1
Clinic	173	55.4	New Mexico	23	7.3
Community	4	1.3	Oregon	23	7.3
In-Home	136	43.3	Texas	23	7.3
			Virginia	9	2.9

Note. Distribution for various demographic characteristics of the client participants (n=313).

**Table 2**  
Summary of roles and responsibilities

Role	Responsibility
Director of Functional Assessment and Treatment Implementation (D-FATI)	Director level BCBA experienced in PFA design and implementation. Conducted fidelity checks for the CLR.
Clinical Leadership Resident (CLR)	Clinician level BCBA experienced in PFA design and implementation. Coached SC through PFA design, implementation and data collection.
Supervising Clinician (SC)	Clinicians of various levels of certification (Masters level, BCaBA, or BCBA). Responsible for the design and implementation of PFA with support.
Behavior Technician (BT)	Registered Behavior Technician or Behavior Technician. Responsible for implementing the PFA for telehealth SCs or when the client needed a more familiar individual to maintain HRE.

Note. Titles and responsibilities of adult participants across the organization

**Table 3**  
Analysis of support and implementation characteristics

Category	n	%
Modality of Coaching		
Bluetooth on site	22	7
Remote	214	68.2
In-person	78	24.8
Modality of Supervision		
In-person	245	78
Telehealth	69	22
Implementer		
Clinician	230	73.7
Technician	83	26.3

Note. Distribution of the modality of coaching, modality of supervision, and the organizational role of the implementer (n=313).

## Results

**Table 4**  
Analysis of control and safety

Measure	Count	%
Total PFAs	313	
Total Control	301	96.17
Total No Control	12	3.83
No Interfering Behavior	3	0.96
With Interfering Behavior	5	1.60
Interfering Behavior & Unsafe	4	1.28
Total Safe	309	98.72

Note. Distribution of safety and control of PFAs with and without interfering behavior

**Table 5**  
Analysis of duration and conditions

Measure	Minutes
Average analysis duration	21.59
Average time spent in EO	4.41
Average time spent in SR	16.99
Average time to first EO	4.44
Overall average SR interval	2.10
Average SR time between trials	12.55

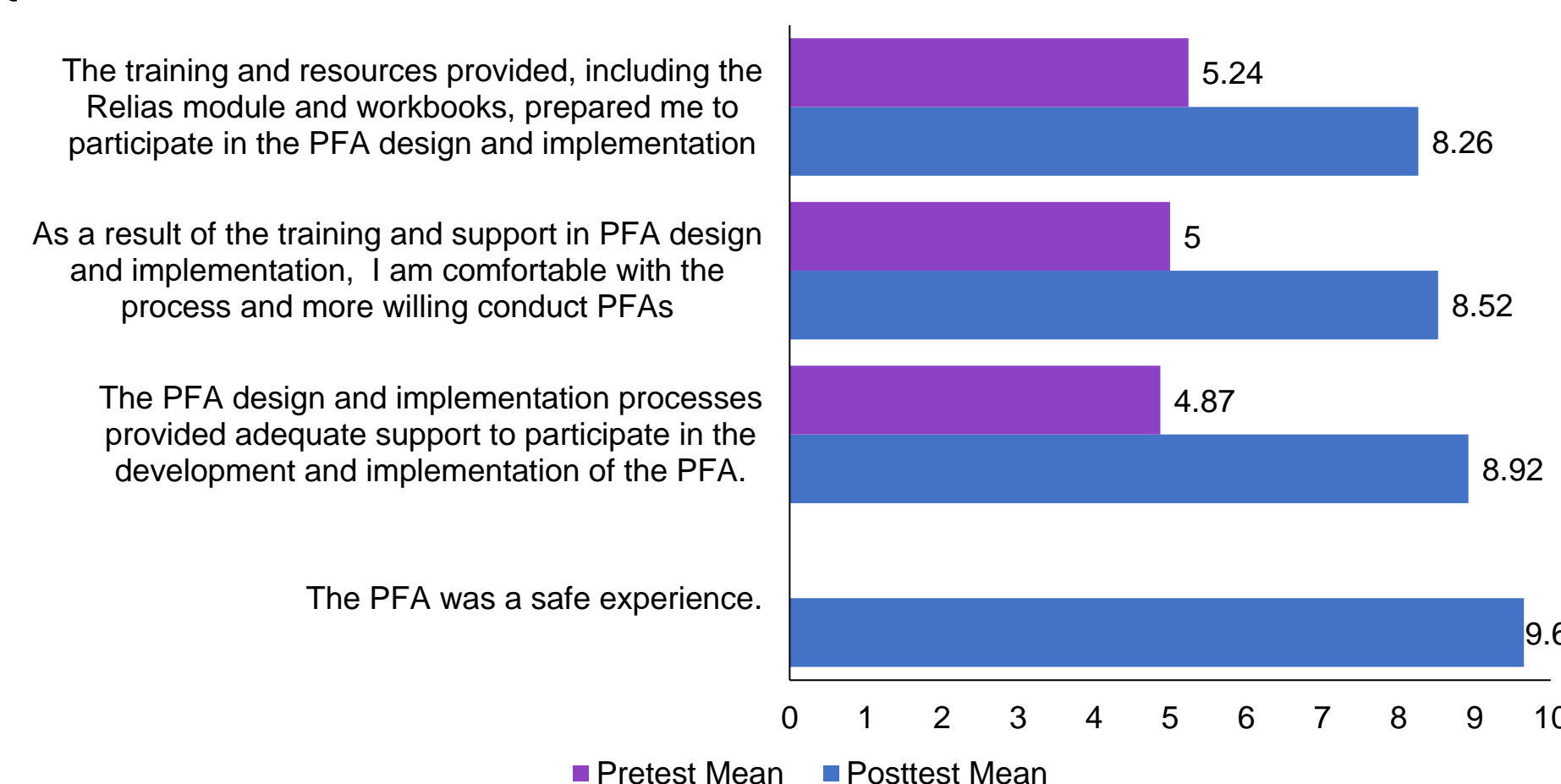
Note. Summary of average duration for various components of all PFAs

**Table 6**  
Analysis of interfering behavior observed during PFAs

Measure	%	Count	Mean	Median	Range	St. Dev.
Total R1 interfering behavior	73	0.25	0	0-37	2.24	
Total R2 interfering behavior	1627	5.20	5	0-16	2.09	
R1 interfering behavior in EO	12	0.05	0	0-5	.34	
R2 interfering behavior in EO	1513	5.1	5	0-16	1.94	
R1 Interfering Behavior in SR	61	0.19	0	0-32	1.88	
R2 interfering behavior in SR	114	0.36	0	0-12	1.3	
# EO per analysis	1501	4.80	4	1-14	1.34	
Analyses with any interfering behavior in SR	16.29	51				
Analyses with R1 interfering behavior in SR	4.15	14				
Analysis with only R1 interfering behavior in SR	1.60	4				
Analysis with R2 interfering behavior in SR	15.02	47				
Analysis with only R2 interfering behavior in SR	12.46	39				

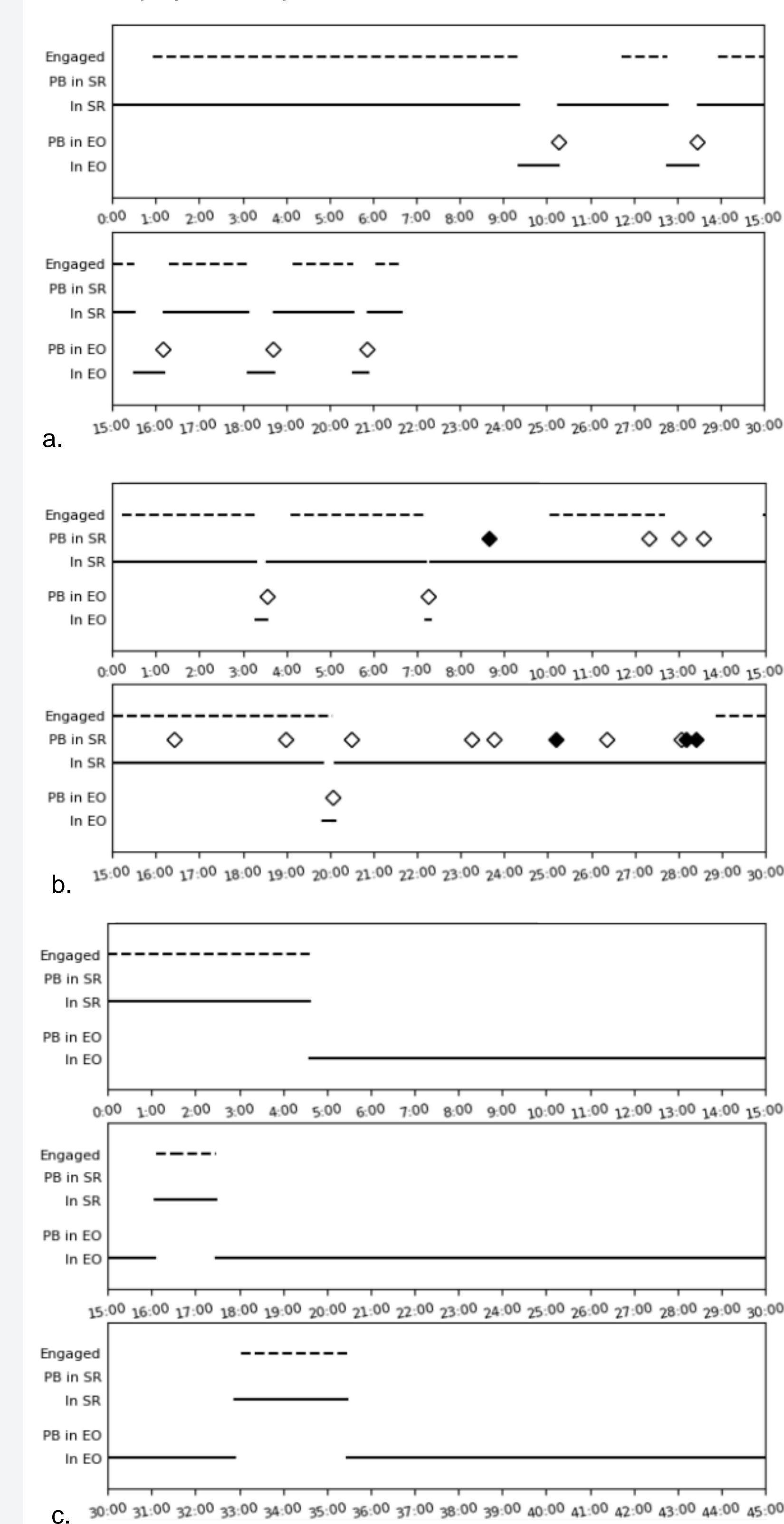
Note. Statistical analysis of the interfering behaviors observed across the PFAs (n=313) and within the EO and SR conditions

**Figure 1**  
Clinician social validity scores



Note. Social validity scores collected as retrospective pretest and posttest for clinicians (n=96).

**Figure 2**  
Visual displays of sample PFAs



Note. Three sample PFA visual representations: a) PFA that most closely represents the average statistics, b) PFA that did not establish control and was not safe, and c) PFA with no interfering behavior and no established control.

## Discussion

- Mentorship and training allows for scalability in using PFA for safe, efficient, and dignified FA in various settings with various levels of experience across implementers without sacrificing fidelity.
- Of the 313 PFAs conducted, less than 2% resulted in undifferentiated results with behaviors categorized as R1 (Dangerous or High Intensity) supporting the previous research relating the effectiveness and safety of the PFA.
- Duration of PFA's were impacted by the coach extending the analysis to ensure the clinician implemented each condition and responded to the client independently as a part of training.
- 96% of the PFA's were differentiated compared to a 95% differentiated results in literature demonstrating the effectiveness in maintaining fidelity during scalability with training and ongoing mentorship. (Coffey et al., 2019)
- 84% of R1 behaviors, occurred during the control condition. Data included 62 instances of R1 behavior with 32 of these instances occurring during a single PFA. Of the remaining 9 PFA's with R1's during SR, the highest number of R1's in the entire PFA did not exceed 4. 50% of these PFA's were stopped before control was reached for client safety and dignity.

## Implications

- The data suggests training and mentorship of the PFA can lead to safe and differentiated results for clients in an applied setting across a large organization across service settings and individuals.
- The average length of 21 minutes per PFA supports previous research related to the feasibility of incorporating the analysis during ongoing supervision in applied settings.
- Coaching via Bluetooth and video calls allows for resources to be more accessible across service locations and can lead to greater accessibility to coaching and support in learning to implement the PFA.
- While scaling, it is important to ensure fidelity is maintained with cross checks of data and clear instructions regarding when to stop the analysis. Coaches were selected based on experience and passing fidelity checks with a team of directors.
- This is the first set of data for the implementation of PFA's across an organization utilizing in-house mentorship at this scale. It allows for opportunities for replication throughout the field that could result in a great rate of analysis prior to treatment of high-intensity and dangerous behaviors for autistic individuals receiving ABA.