

Coaching Caregivers In- Person and via Telehealth to Implement Tier-3 Interventions

Addressing Challenging Behavior and Social-Emotional Skills in Home-Based Services: A Systematic Review

Stephanie Gerow

Conducting Brief Functional Analysis via Telehealth Technology

Lisa Sanchez

Training Caregivers via Telehealth to Implement Functional Communication Training

Charissa Richards

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James

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Introduction

- Young children with developmental delays or disabilities (DD) often receive home-based services through IDEA Part C or B
 - Experience difficulties in social-emotional skills
 - Higher risk for engaging in challenging behavior
- Home-based services, involving coaching caregivers to implement evidence-based practices, can improve social-emotional and challenging behavior outcomes

(Baker et al., 2002; Buschbacher & Fox, 2003; IDEA, 2004; Roberts et al., 2010; U.S. Department of Education, 2016)

Purpose of Review

- Synthesize the literature related to home-based interventions to address to social-emotional skills and challenging behavior for young children (age birth to 6 years old)
- Provide information that will assist early intervention professionals and researchers in improving social-emotional and challenging behavior outcomes in the context of home-based services

Methods

- Inclusion Criteria:
 - Birth to 6 years 11 months old, diagnosed with disability or delay
 - Dependent measure: social-emotional skill or challenging behavior
 - Evaluated the efficacy of an educational or behavioral intervention
 - Some or all intervention sessions involved coaching a caregiver in the home
- Databases and search terms developed in consultation with librarian
- Ancillary search

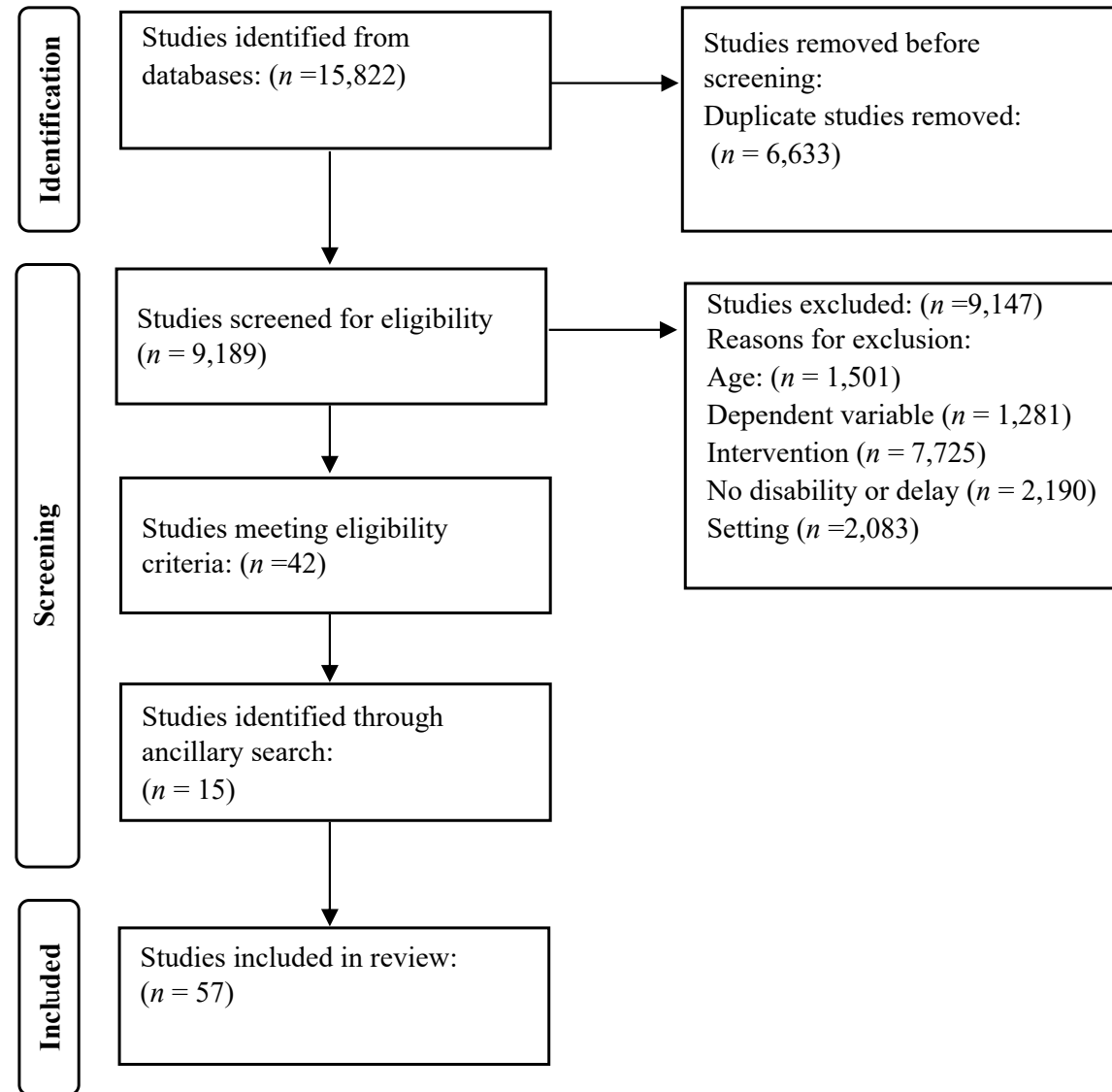


Figure 1. PRISMA Diagram



Results and Discussion

Table 1.
Participant Demographics

Variable	Group Design Participants (n = 3749)	Single Case Participants (n = 91)	Variable	Group Design Participants (n = 3749)	Single Case Participants (n = 91)
<i>Gender</i>			<i>IDEA Disability Category</i>		
Female	889 (24%)	23 (25%)	Autism Spectrum Disorder	1,252 (33%)	43 (47%)
Male	1,949 (52%)	56 (62%)	Deaf-Blindness	0 (0%)	0 (0%)
Not reported	911 (24%)	12 (13%)	Deafness	0 (0%)	0 (0%)
<i>Age (average)</i>			Developmental delay	588 (16%)	11 (12%)
0 to 2 years old	345 (9%)	23 (25%)	Emotional disturbance	19 (< 1%)	0 (0%)
3 to 6 years old	2,289 (61%)	68 (75%)	Hearing impairment	2 (< 1%)	1 (1%)
Older than 7 years old*	1,027 (27%)	0 (0%)	Intellectual disability	0 (0%)	13 (14%)
Not reported	88 (2%)	0 (0%)	Orthopedic impairment	2 (< 1%)	0 (0%)
<i>Race or Ethnicity ^a</i>			Other health impairment	586 (16%)	14 (15%)
American Indian or Alaska Native	1 (< 1%)	0 (0%)	Specific learning disability	306 (8%)	1 (1%)
Asian, Native Hawaiian, or Other Pacific Islander	32 (<1%)	2 (2%)	Speech or language impairment	495 (13%)	21 (23%)
Black or African American	376 (10%)	1 (1%)	Traumatic brain injury	0 (0%)	0 (0%)
Hispanic or Latino/a/x	300 (8%)	3 (3%)	Visual impairment	7 (< 1%)	3 (3%)
White	1,331 (36%)	16 (18%)	Specific disability not reported	981 (26%)	0 (0%)
Two or more races	87 (2%)	0 (0%)	<i>SES Metric Reported</i>		
Other	39 (1%)	0 (0%)	Receiving or not receiving public assistance	1,516 (40%)	0 (0%)
Not reported	1,614 (43%)	69 (76%)	Household income	807 (22%)	0 (0%)
			Category (i.e., low, middle, upper)	0 (0%)	48 (53%)
			Other	0 (0%)	6 (7%)
			Not reported	1,418 (37%)	37 (41%)

^a Race aligns with categories described by U.S. Census Bureau (2020) guidelines except for “Asian” and “Native Hawaiian or Other Pacific Islander.” These 2 categories were combined in our reporting due to lack of specificity in race categories reported in the included studies. The total number of participants in this category is more than the number of included participants because some studies reported both the race and ethnicity of the participants.

*The inclusion criteria for this study specified that studies needed to include children birth to 6 years 11 months old. In some of the group design studies, participants older than this age were also included and we were not able to disaggregate the data for those participants in each of the demographic categories. For this reason, some participants are older than the age range in the inclusion criteria.

Table 2.
Caregiver Demographics

Variable	Group Design Caregivers (n = 3780)	Single Case Caregivers (n = 101)
<i>Gender</i>		
Female	1,312 (35%)	70 (69%)
Male	75 (2%)	16 (16%)
Not reported	2,393 (63%)	15 (15%)
<i>Age (average)</i>		
20 to 29 years	594 (16%)	4 (4%)
30 to 39 years	551 (15%)	13 (13%)
40+ years	70 (2%)	3 (3%)
Not reported	2,501 (66%)	81 (80%)
<i>Race or Ethnicity ^a</i>		
American Indian or Alaska Native	2 (< 1%)	0 (0%)
Asian, Native Hawaiian, or Other Pacific Islander	2 (< 1%)	0 (0%)
Black or African American	65 (2%)	5 (5%)
Hispanic or Latino/a/x	18 (<1%)	3 (3%)
White	432 (11%)	30 (30%)
Two or more races	0 (0%)	0 (0%)
Other	51 (<1%)	0 (0%)
Not reported	3,151 (83%)	63 (62%)

Variable	Group Design Caregivers (n = 3780)	Single Case Caregivers (n = 101)
<i>Caregiver role</i>		
Father	34 (< 1%)	16 (16%)
Mother	153 (4%)	70 (69%)
Familial caregiver (e.g., grandmother)	97 (< 1%)	1 (1%)
Non-familial caregiver	17 (< 1%)	0 (0%)
Parent/caregiver, not further described	3,479 (92%)	14 (14%)
<i>Marital Status</i>		
Single	767 (20%)	26 (27%)
Married/living with partner	1,053 (28%)	9 (9%)
Divorced or separated	72 (2%)	0 (0%)
Widowed	4 (<1%)	0 (0%)
Not reported	1,482 (39%)	66 (65%)
<i>Education</i>		
Some high school/diploma/GED	444 (12%)	14 (14%)
Some college/college degree	722 (19%)	23 (23%)
Graduate/advanced degree	175 (5%)	8 (8%)
Not reported	2,334 (62%)	56 (55%)

^a Race aligns with categories described by U.S. Census Bureau (2020) guidelines except for “Asian” and “Native Hawaiian or Other Pacific Islander.” These 2 categories were combined in our reporting due to lack of specificity in race categories reported in the included studies. The total number of participants in this category is more than the number of included participants because some studies reported both the race and ethnicity of the participants.

Table 3.**Intervention Characteristics**

Variable	Group Design Studies (<i>n</i> = 35 ^a)	Single Case Participants (<i>n</i> = 27)
<i>Intervention Categories</i>		
Antecedent-based interventions	13 (37%)	17 (63%)
Augmentative and alternative communication	2 (6%)	1 (4%)
Cognitive behavioral/instructional strategies	0 (0%)	0 (0%)
Differential reinforcement	12 (34%)	7 (26%)
Discrete trial teaching	4 (11%)	1 (4%)
Extinction	2 (6%)	0 (0%)
Functional communication training	2 (6%)	17 (63%)
Naturalistic intervention	11 (31%)	1 (4%)
Peer-based instruction and intervention	0 (0%)	1 (4%)
Prompting	6 (17%)	8 (30%)
Reinforcement	7 (20%)	5 (19%)
Response interruption and redirection	4 (11%)	4 (15%)
Social narratives	0 (0%)	1 (4%)
Task analysis	0 (0%)	1 (4%)
Not reported	8 (23%)	0 (0%)
<i>Caregiver Implementation</i>		
Did not implement	n/a	n/a
0 to 25% of intervention sessions	3 (9%)	0 (0%)
26 to 50% of intervention sessions	2 (6%)	2 (7%)
51 to 75% of intervention sessions	2 (6%)	0 (0%)
76 to 100% of intervention sessions	20 (57%)	21 (78%)
Number of sessions implemented not reported	8 (23%)	4 (15%)

Variable	Group Design Studies (<i>n</i> = 35 ^a)	Single Case Participants (<i>n</i> = 27)
<i>Caregiver Coaching Strategies</i>		
Written instructions	11 (31%)	15 (56%)
Verbal instructions	11 (31%)	14 (52%)
Goal Setting	2 (6%)	1 (4%)
Modeling	11 (31%)	21 (78%)
Video examples	7 (20%)	7 (26%)
Role-play without child	11 (31%)	9 (33%)
Role-play with child	4 (11%)	13 (48%)
Coaching or verbal prompting	9 (26%)	17 (63%)
Observation without coaching	8 (23%)	9 (33%)
Immediate feedback	7 (20%)	13 (48%)
Delayed feedback	2 (6%)	6 (22%)
Feedback using video	1 (3%)	3 (11%)
Review of graphs or data	2 (6%)	7 (26%)
Reflection or self-feedback	1 (3%)	3 (11%)
Problem solving	7 (20%)	5 (19%)
Answering questions	2 (6%)	8 (30%)
Homework/lessons	7 (20%)	2 (7%)
DVD	2 (6%)	0 (0%)
Meeting to review progress	0 (0%)	1 (4%)
Not reported	6 (17%)	0 (0%)
<i>Caregiver Treatment Fidelity</i>		
Measured treatment fidelity	13 (37%)	17 (63%)

^a 35 treatment groups across 30 group design studies. Percentages calculated out of 35 treatment group.

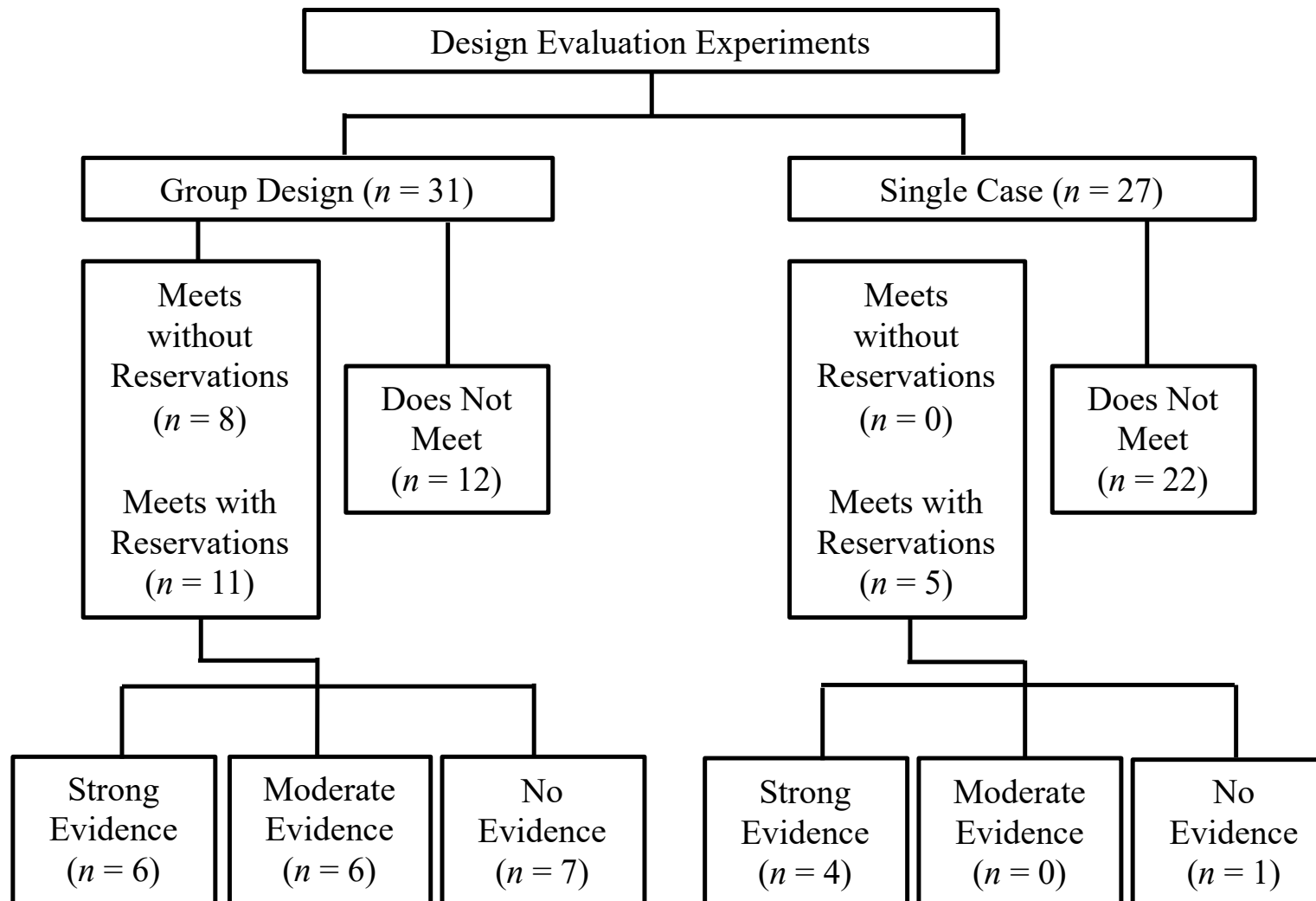


Figure 2. Quality evaluation and visual analysis results for all included articles



Themes from the Literature

- Interventions: Antecedent-based interventions, differential reinforcement, functional communication training, naturalistic intervention, and prompting
- Coaching Strategies: instructions, modeling, coaching/verbal prompting, observation, role play, and feedback
- Resources needed
 - Most of the materials were already available in the home - e.g., items for task and toys
 - Sometimes additional materials required – e.g., visual schedule, manual for parent

Suggested Steps in Home-Based Services

1. Assess social-emotional skills/challenging behavior
2. Develop individualized intervention for child based on family input and evidence-based practices
3. Develop jargon-free instructions
4. Teach caregiver to implement intervention
5. Provide continued support, observation, coaching, and data monitoring

Discussion

- Limitations
- Future research
- Implications
 - Teaching caregivers to implement evidence-based practices leads to improvements in social-emotional skills and challenging behavior for young children with DD

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for additional information

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Conducting Brief Functional Analysis via Telehealth Technology

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Jacqueline Zambrano, Suzannah Avery, and David Cosottile

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Parent-implemented brief functional analysis and treatment with
coaching via telehealth

Stephanie Gerow, Supriya Radhakrishnan, Tonya N. Davis,
Jacqueline Zambrano, Suzannah Avery, David W. Cosottile and Emily Exline

Department of Educational Psychology, Baylor University



Introduction

- Functional analysis (FA) leads to effective interventions to reduce challenging behavior (Beavers et al., 2013; Hanley et al., 2003; Saini et al., 2020)
- Many families do not have access to challenging behavior intervention; telehealth technology can improve access (LeBlanc et al., 2020; Schieltz & Wacker, 2020)
- The majority of studies delivering FA via telehealth have coached parents to implement traditional FA (Shieltz & Wacker, 2000)

Introduction

- Brief FA is well suited for implementation by parents (Gardner et al., 2012)
- Brief FA can be incorporated into progressive FA model, consisting of an initial brief FA and additional assessments as needed (Vollmer et al., 1995)
- Suess et al. (2016) evaluated brief FA via telehealth with parents in clinic
- Purpose: to evaluate a progressive FA model delivered via telehealth to parents in their homes

Method

Participants and Data Collection

Child (Parent)	Age	Gender	Race/ Ethnicity*	Diagnosis	Topography of Challenging Behavior
Zach (mother)	11	Male	Hispanic/Latino and White	ASD, intellectual disability	Property destruction
Cameron (mother)	3	Male	White	ASD, Fragile X Syndrome	Aggression
Logan (mother)	4	Male	Hispanic/Latino	ASD	Aggression, property destruction
Kyle (mother)	5	Male	White	ASD, speech delay	Self-injury
Paul (mother)	10	Male	White	ASD, Down syndrome	Self-injury
Diego (mother)	5	Male	Hispanic/Latino	ASD	Aggression
Sophia (mother)	6	Female	Black/African American and White	ASD	Self-injury, disruptive vocalizations

*The race/ethnicity column reflects data gathered from parents via an interview and the categories were based on the U.S. Census Bureau categories (U.S. Census Bureau, 2017). Participants could select more than one race/ethnicity category.

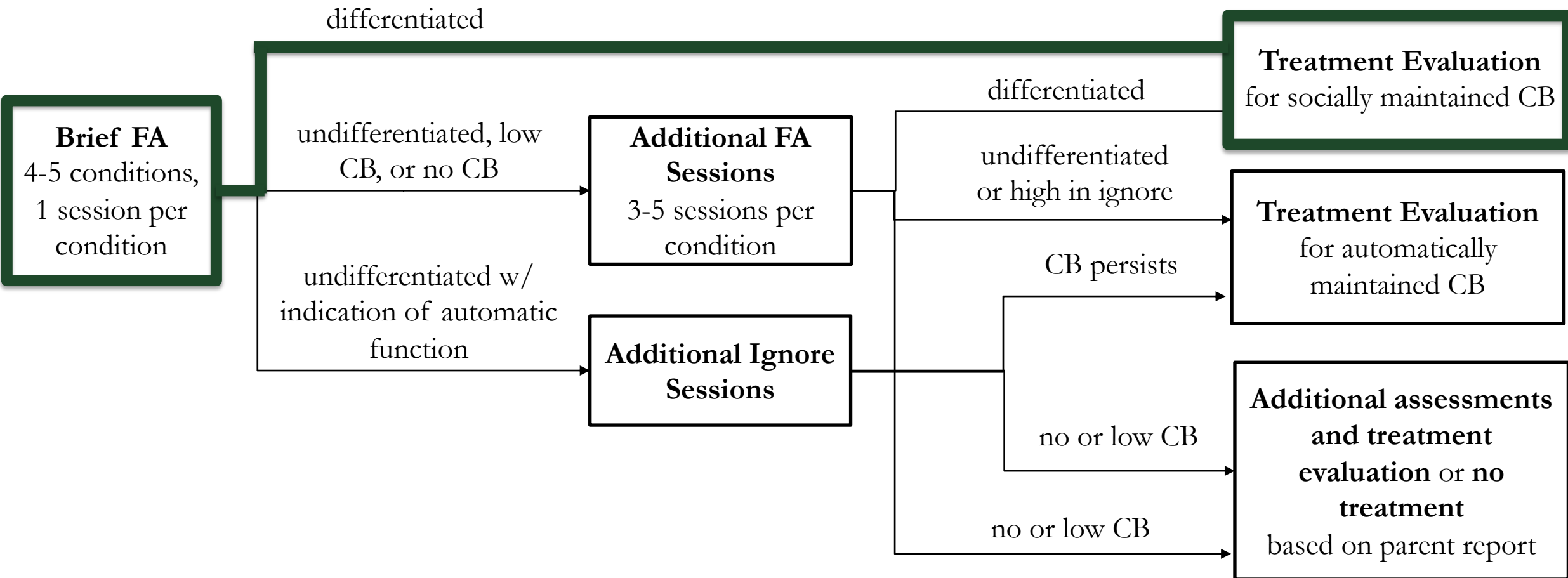
Technology

- Coaches: Laptops with videocamera
- Videoconference software: Vsee
- Families:
 - Their own technology OR
 - Tablet mailed to them with cellular capability, tablet stand, and headsets (optional for use during session)

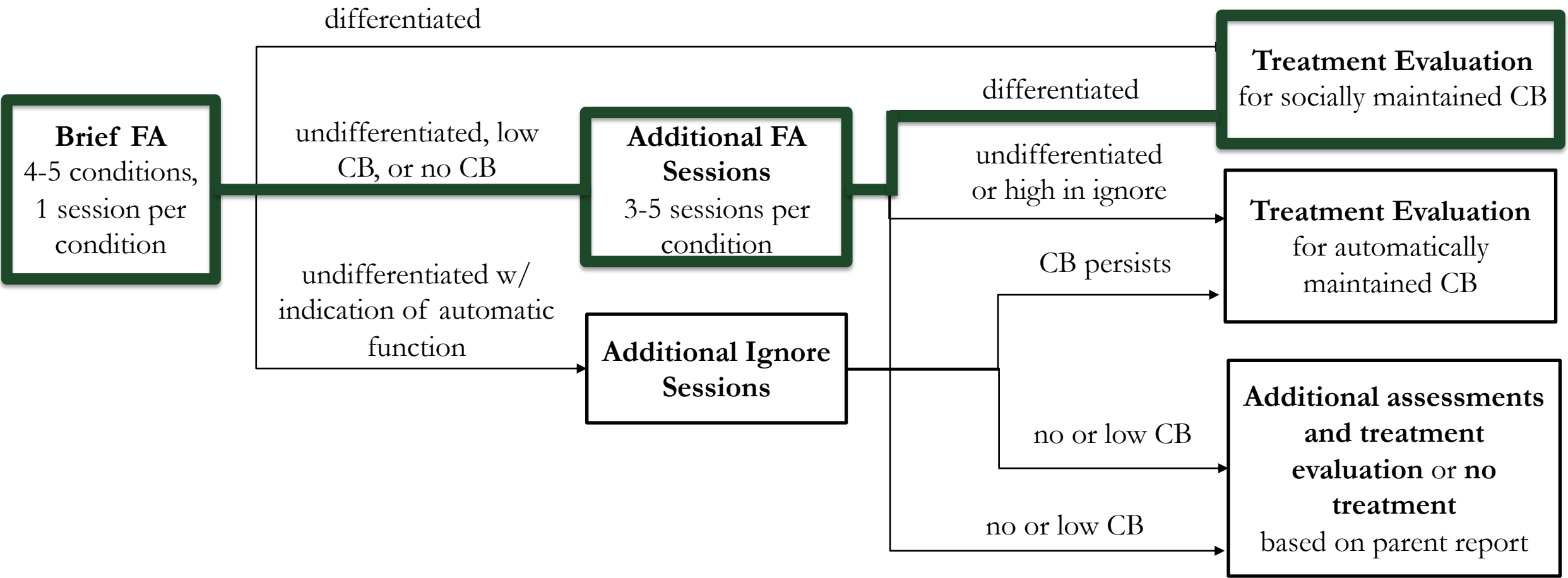
Procedures

- Parent coaching: instructions, prompting, rehearsal, and feedback
- Parent interview, preference assessment, and progressive FA model (based on Vollmer et al., 1995)
- Treatment evaluation
 - Baseline: same procedures as relevant FA condition
 - Intervention: functional communication training or competing stimulus, prompting, and differential reinforcement of alternative behavior

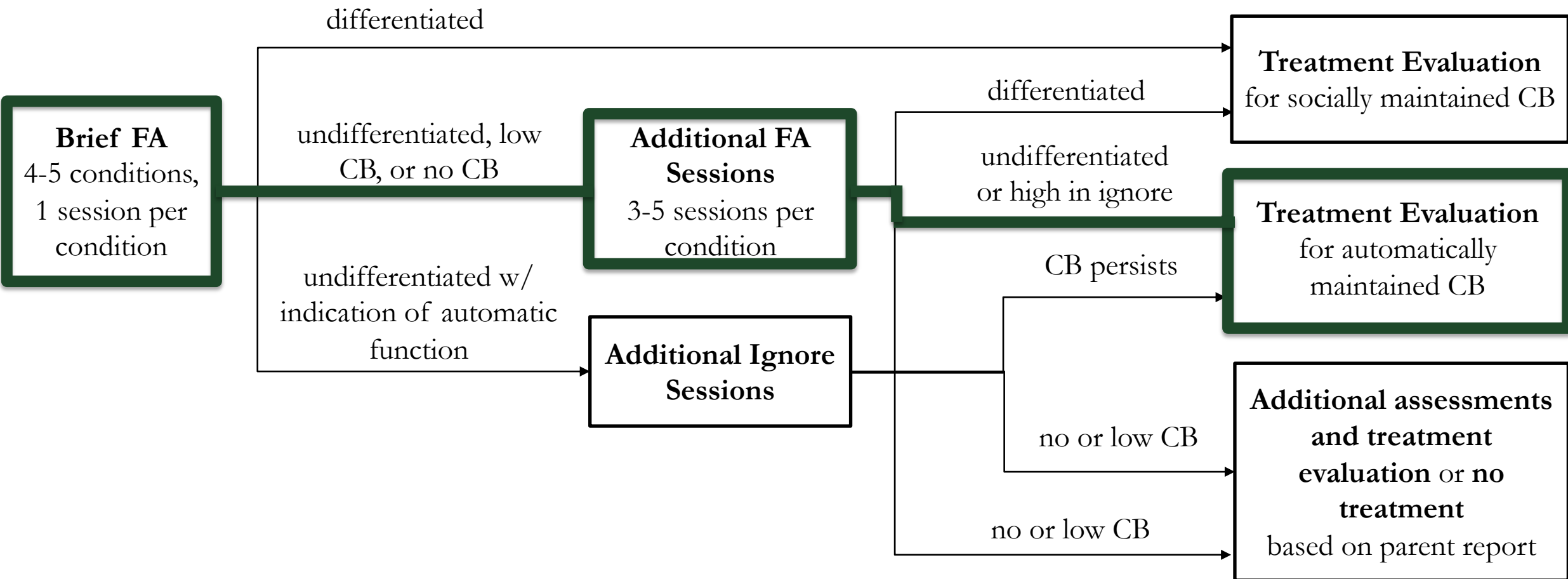
Progressive FA Model



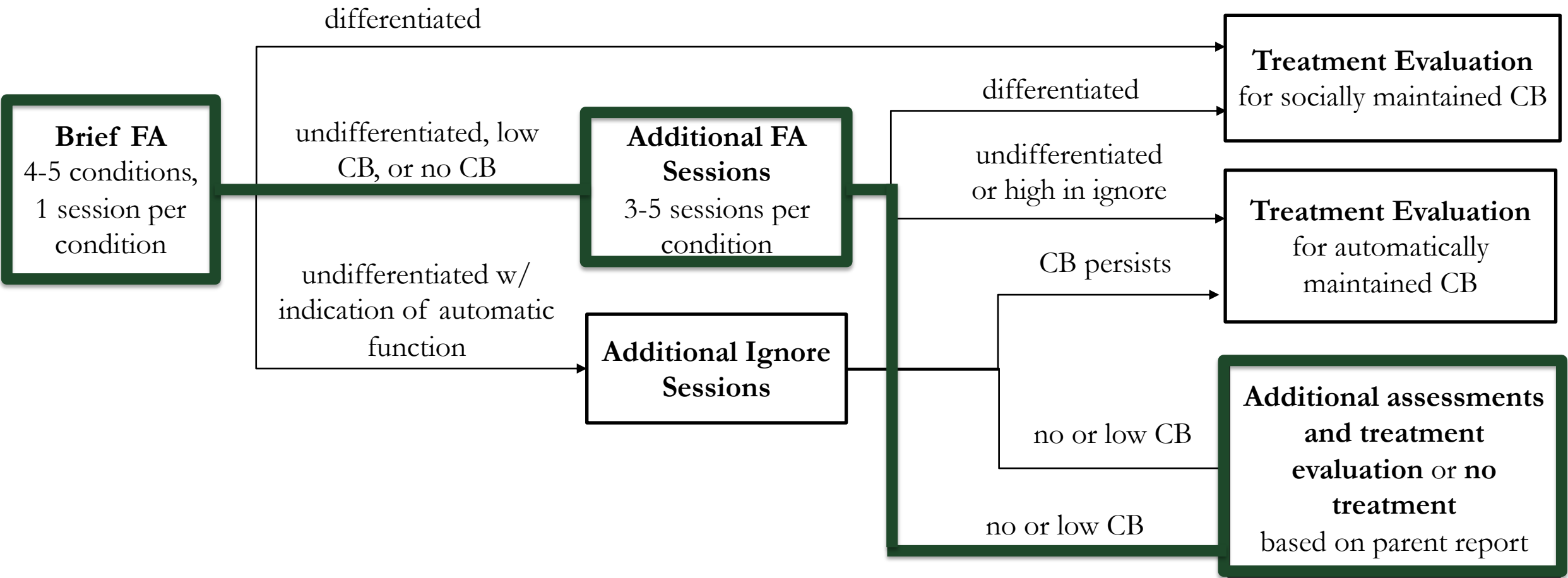
Progressive FA Model



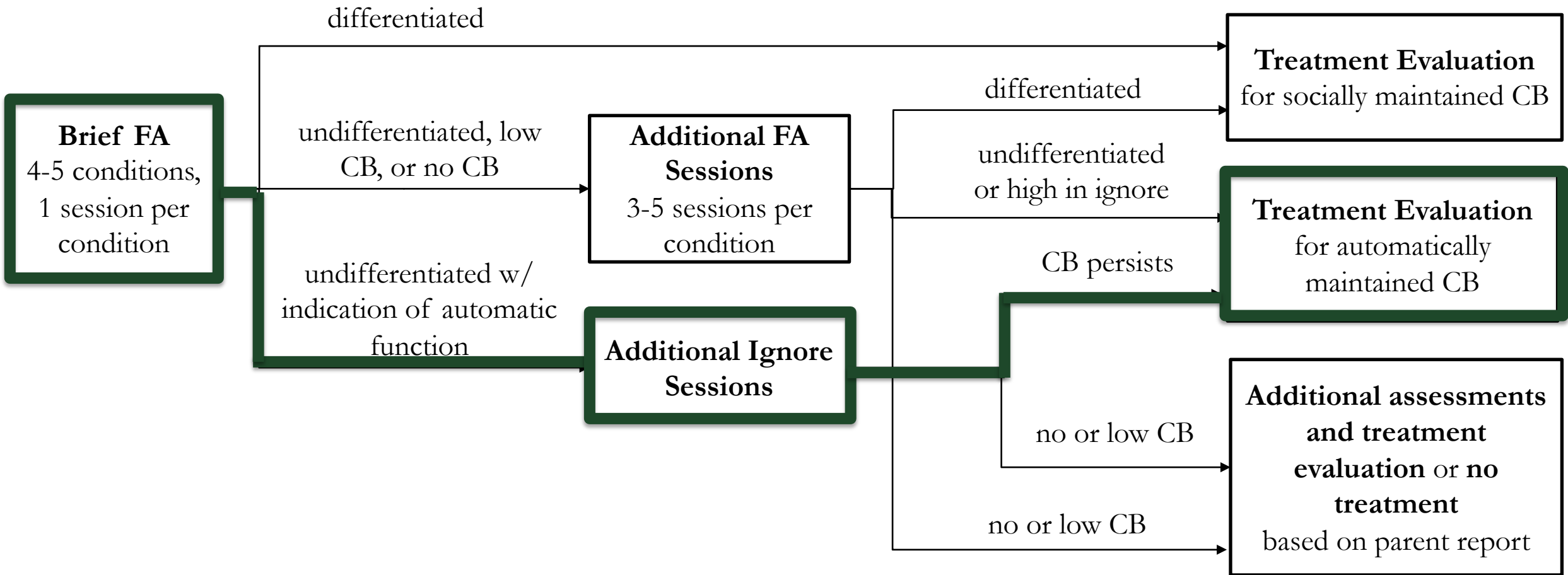
Progressive FA Model



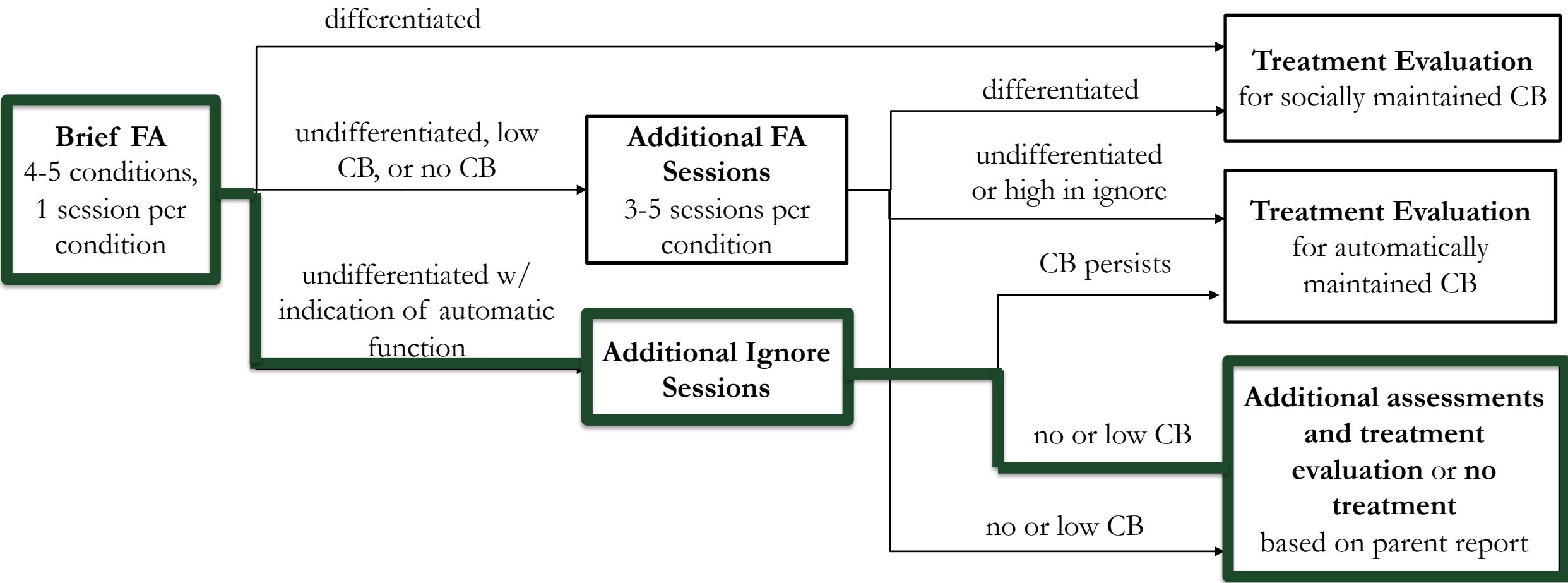
Progressive FA Model



Progressive FA Model

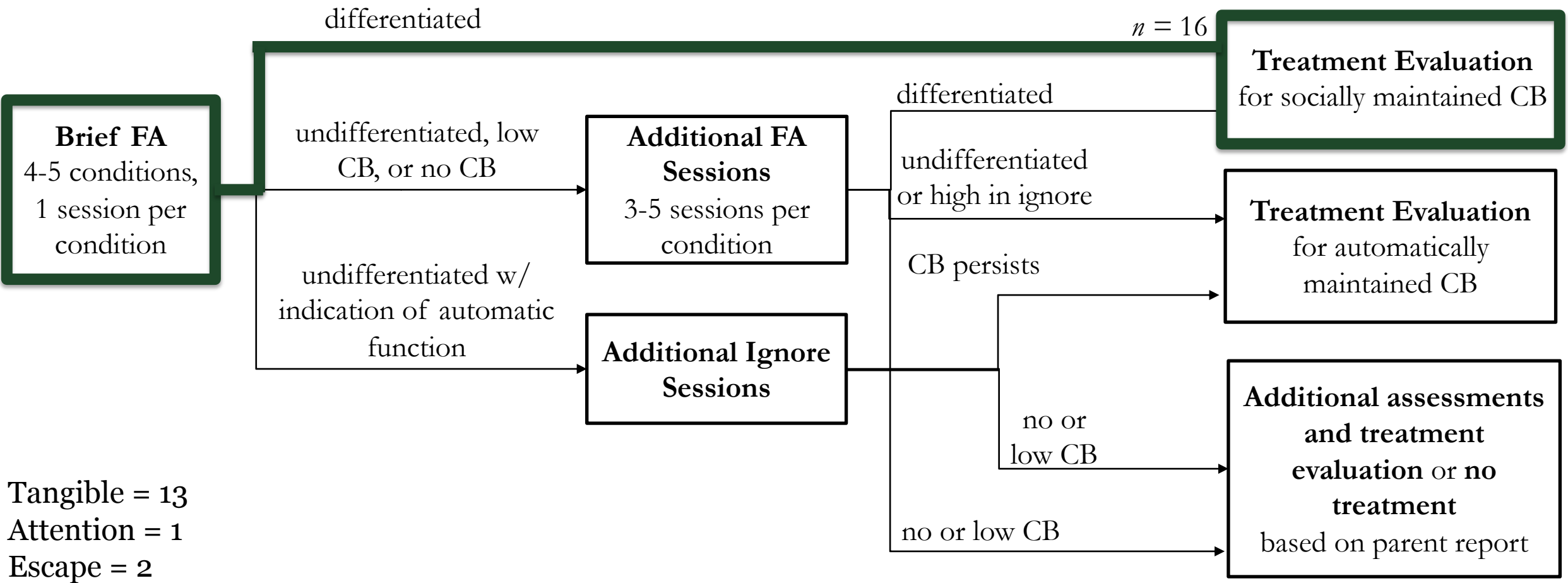


Progressive FA Model



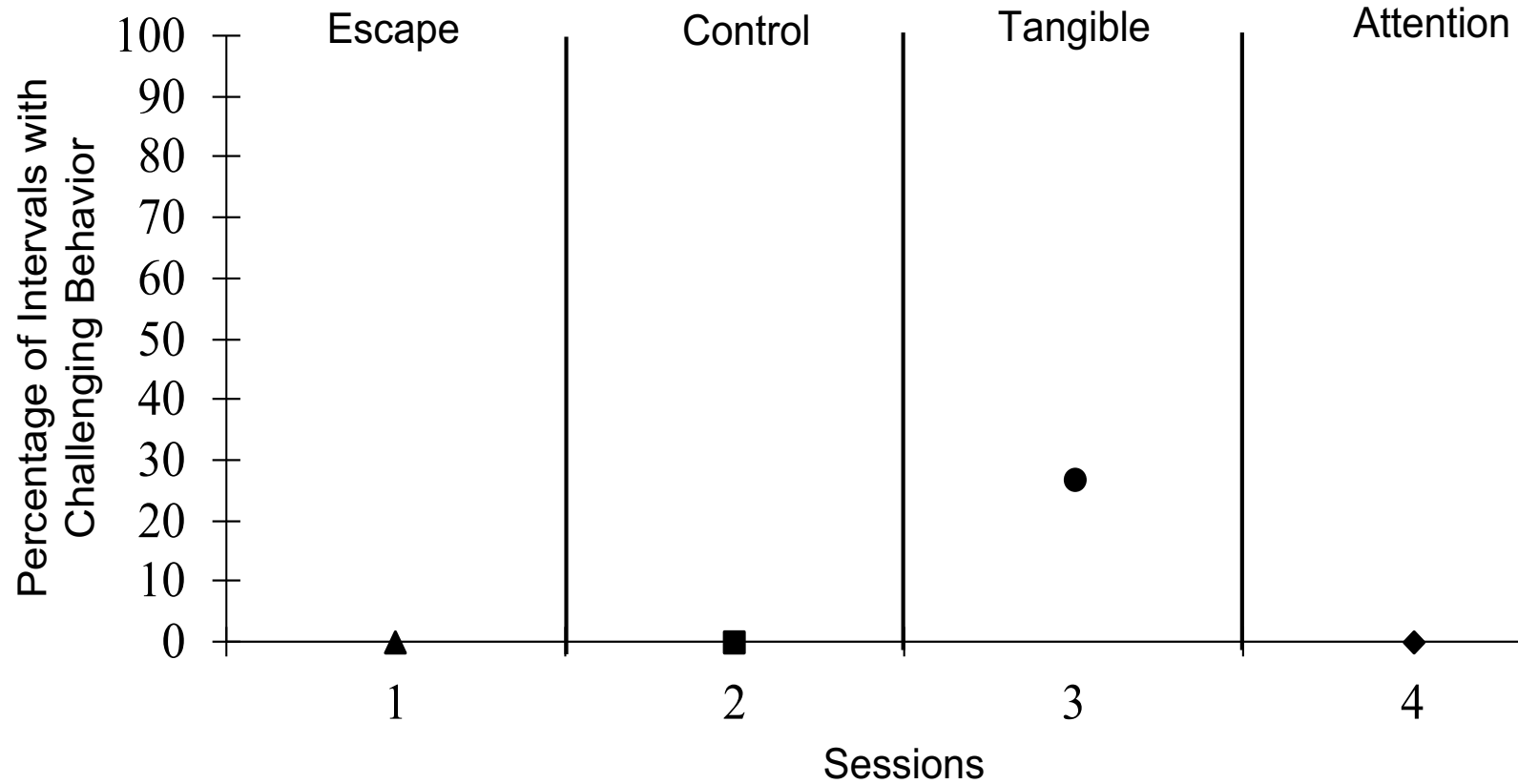
Results and Discussion

Progressive FA Model



Tangible = 13
Attention = 1
Escape = 2

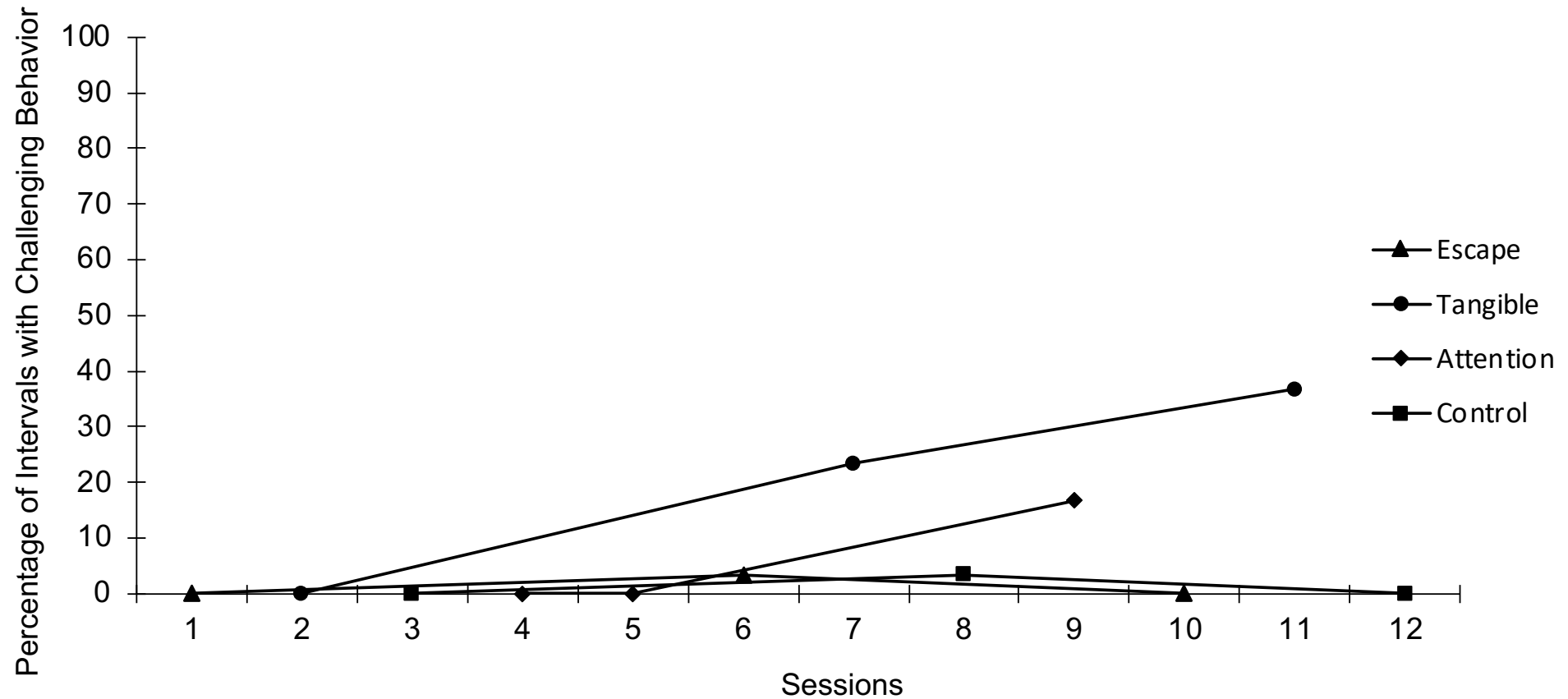
Results & Discussion



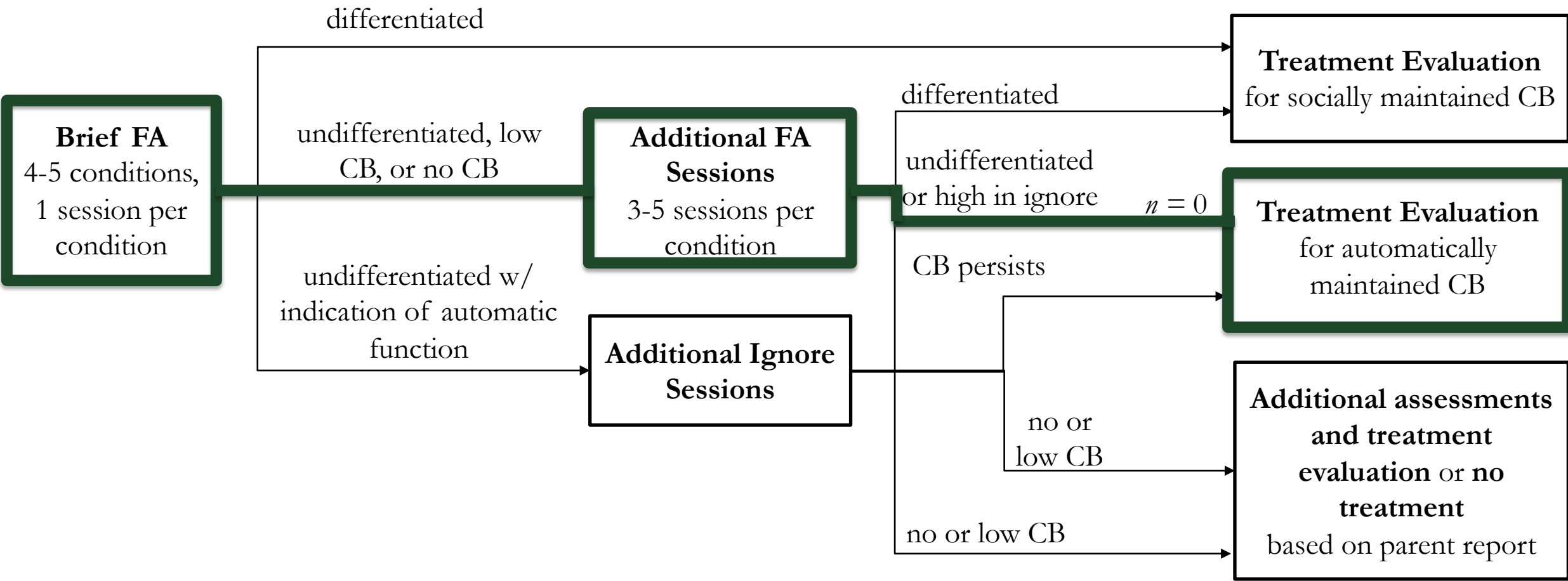
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Applied Behavior Analysis

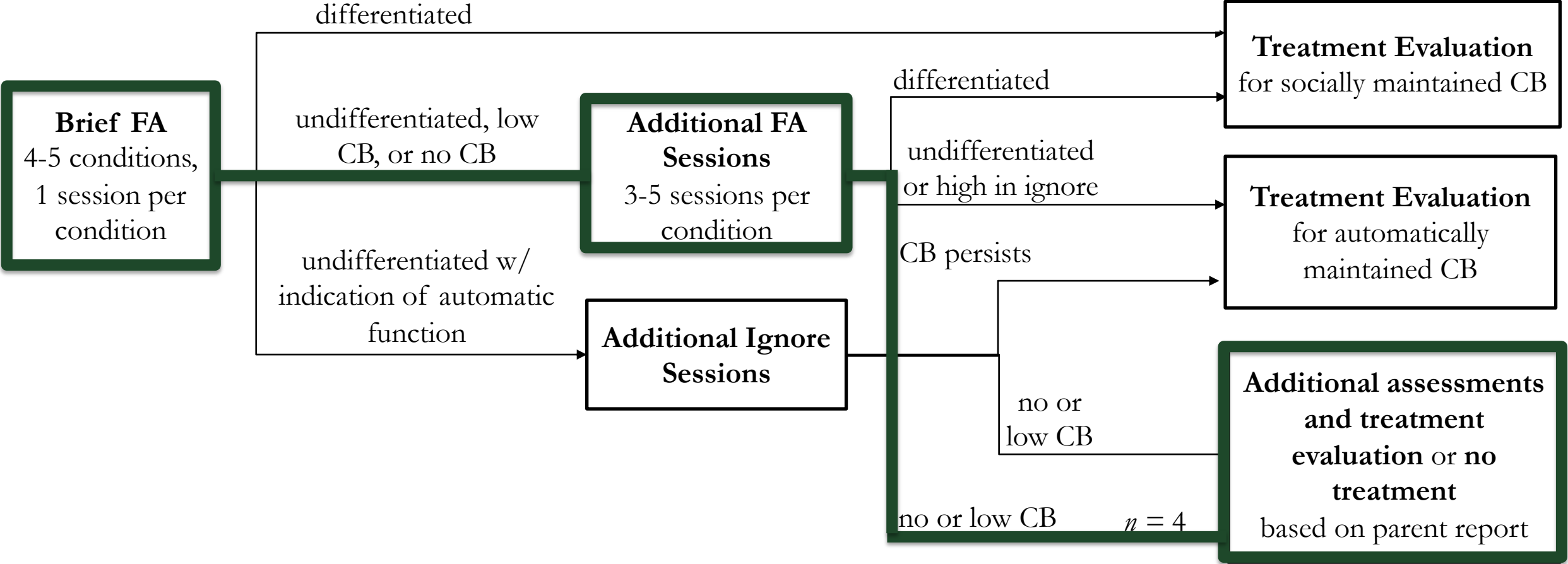
Results & Discussion



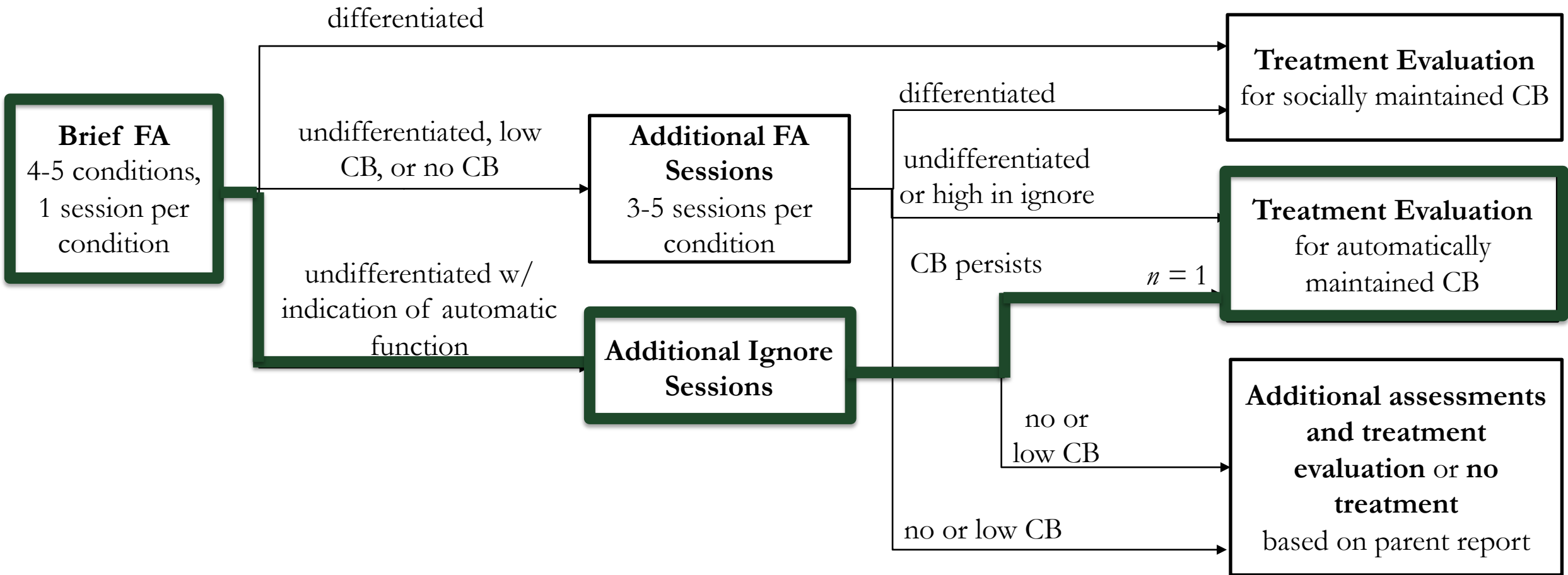
Progressive FA Model



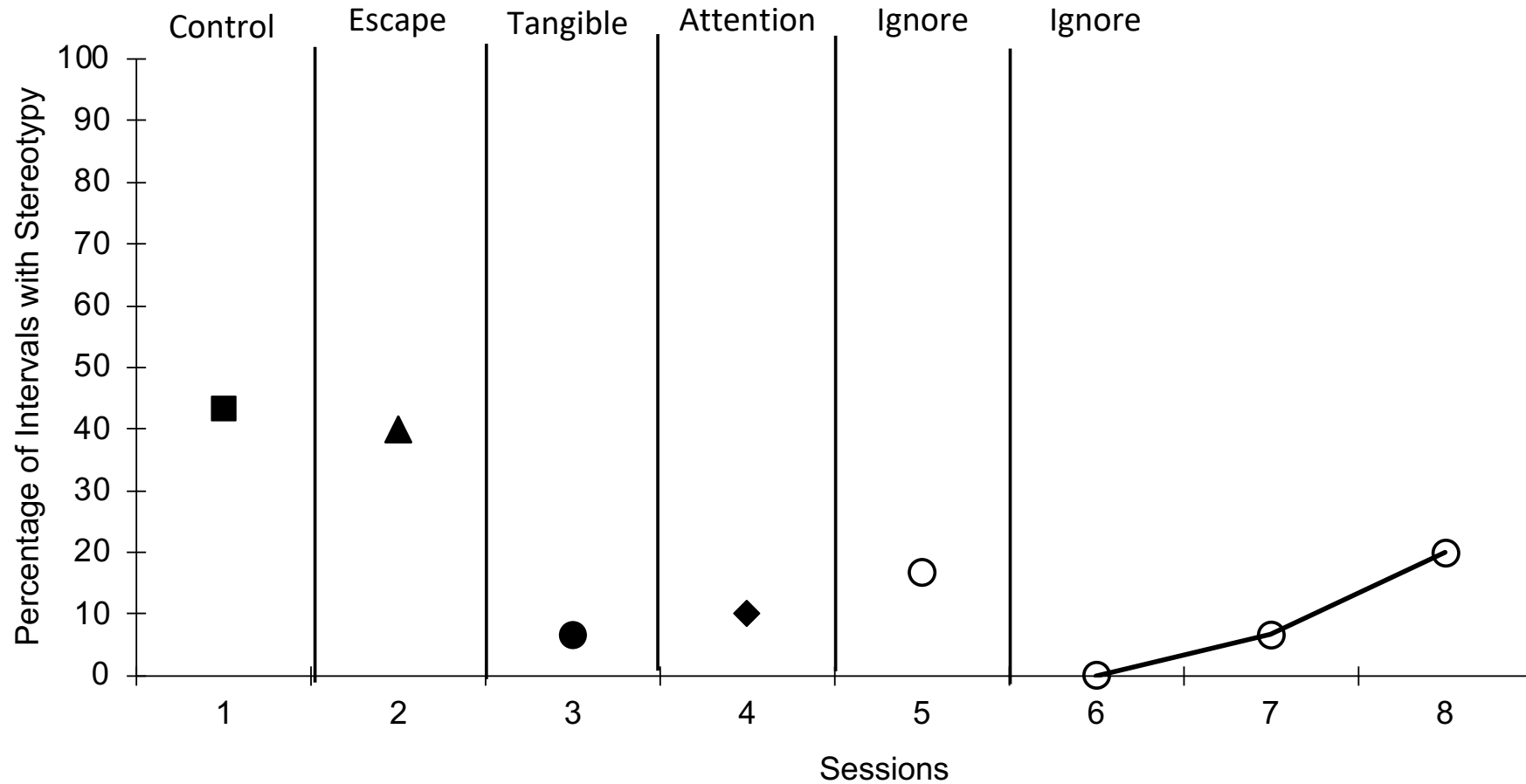
Results & Discussion



Progressive FA Model



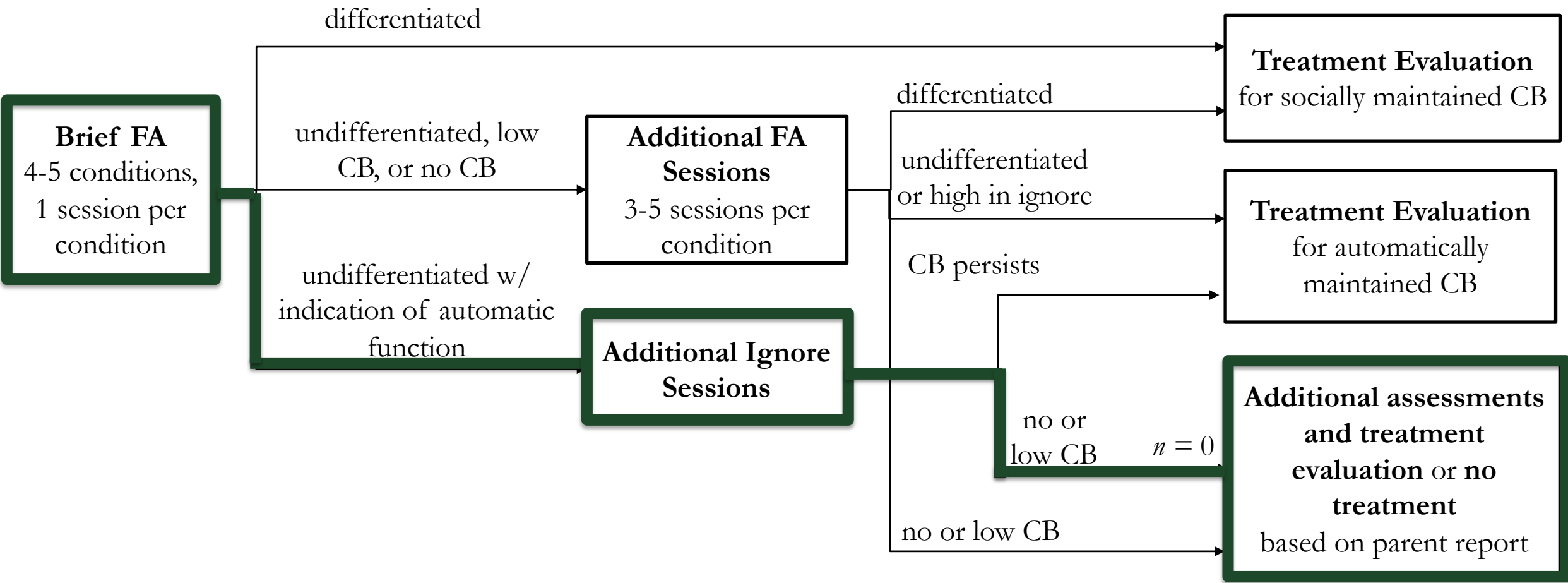
Results & Discussion



Baylor University

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Applied Behavior Analysis

Progressive FA Model



Results & Discussion

- Social Validity
 - Average Response: 4.85 (scale of 1-6)
- Intervention
 - 10 participants received intervention
 - 80% reduction in challenging behavior achieved for 10 participants
 - 2 additional participants are still receiving intervention

Results & Discussion

- The initial brief FA was used to determine function for 16 participants
- Caregivers found the assessment procedures to acceptable
- The results of this study aligns with previous research (Gerow et al., 2021; Vollmer et al., 1995) which indicates that the progressive FA model is effective for creating interventions to decrease challenging behavior

Results & Discussion

- Limitations
- Implications
 - Importance of involvement qualified professionals to conduct BFA
 - The progressive FA model was only implemented with participants who engaged in challenging behavior that could be treated via telehealth
 - This study supports previous findings that indicate the progressive FA model can be used to create individualized interventions

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TRAINING CAREGIVERS VIA TELEHEALTH TO IMPLEMENT FUNCTIONAL COMMUNICATION TRAINING

Charissa Richards M.S.Ed, BCBA



**PURDUE
UNIVERSITY**

College of Education

3/23/23

1

Introduction- Fragile X and Autism

- ASD and FXS are both neurodevelopmental disabilities
- FXS is caused by mutations in the FMR1 gene (Hunter et al., 2014)
- FXS is the most common single gene cause of ASD (Cohen et al., 2005)
 - 46% of males with FXS have co-occurring ASD (Bailey et al., 2008)
- Families of both populations report need for caregiver training related to challenging behavior, especially after COVID-19 (Hall et al., 2020; Jacques et al., 2022)

Introduction- Telehealth Caregiver Training

- Access to caregiver training is a barrier for many families (Grenier-Martin & Rivard, 2022)
- Telehealth allows new opportunities for families to receive training (Unholz-Bowden et al., 2020)
- Most trainings include live training and coaching, which can be difficult for caregivers to attend to (Lerman et al., 2020; Unholz-Bowden et al., 2020)

Introduction- Functional Communication Training

- Function-based intervention (Carr & Durand, 1985)
- Teaches a new or different communicative response
 - Must meet the same function as their challenging behavior
- New response is reinforced, challenging behavior is placed on extinction
- Caregivers have been trained to implement FCT with their children (Hall et al., 2020; Machalicek et al., 2016)

Introduction- Trial-Based Functional Analysis

- Uses a discrete-trial methodology (Bloom et al. 2011; Rispoli et al., 2014)
- More feasible for applied settings (Gerow et al., 2013; Rispoli et al., 2014)
 - Fewer instances of challenging behavior
 - Only the hypothesized functions are tested
- No studies have evaluated caregiver implementation of the TBFA to inform FCT

Introduction- Practice-Based Coaching



Snyder et al., 2015

- Non-hierarchical, collaborative coaching relationship
- Shared goal setting and action planning
- Focused observation
- Reflection and feedback

Research Questions

We sought to evaluate:

- The effect of a telehealth caregiver training program on FCT implementation fidelity
- The effect of a telehealth caregiver training program on child challenging behavior, communication, and task completion
- Caregiver perspectives on the social validity of the program

Method-Participants

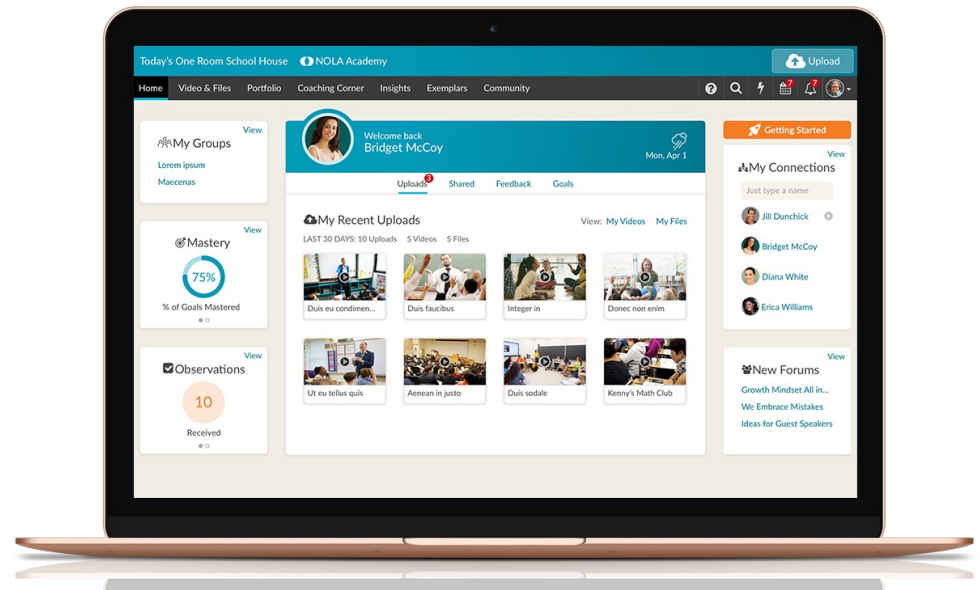
Caregiver	Amelia	Betty	Caroline
Age (years)	32	34	39
Ethnicity	White	White	White
Gender	Female	Female	Female
Education	Bachelor's Degree	Bachelor's Degree	Bachelor's Degree
Marital Status	Married	Married	Married
Employment Status	Business Owner	Teacher	Part time graduate student

Method-Participants

Child	Asher	Bryce	Cade
Age	4	5	2
Ethnicity	White	White	White
Gender	Male	Male	Male
Diagnosis	Fragile X Syndrome	Fragile X Syndrome	Autism
Targeted problem behavior	Throwing, yelling	Hitting, yelling	Throwing, hitting
Problem behavior function	Access to tangibles	Escape	Access to tangibles
Main form of communication	Vocal Communication; short sentences	Vocal communication; short sentences	No vocal communication; prelinguistic skills

Method-Setting and Materials

- All interactions took place via Zoom, with the caregivers in their home
- TORSH Talent Software for video uploads
- iPad sent to families for data collection
- Online researcher created modules related to challenging behavior and possible interventions



Method-Dependent Variables

- **Caregiver**
 - FCT implementation fidelity
 - Social validity

- **Child**
 - Challenging behavior
 - Communication
 - Task completion (only Bryce)

Method-Procedures

Intake

- Average of 60-minute sessions
- Reviewed study expectations
- Gained demographic information
- Discussed target routine for intervention



Functional Behavior Assessment and TBFA

- Functional Assessment Interview (FAI)
 - 60-90 minutes to gather information about the behavior and build a hypothesis for the behavior's function
- TBFA
 - Completed after the FAI
 - Only tested the hypothesized conditions
 - Caregiver completed with bug-in-ear coaching via zoom

Method-Procedures

Baseline

- Coaches completed a technology training for caregivers about TORSH Talent and the iPad
- Caregivers met with coaches weekly for “check-in” sessions that lasted 10-15 minutes on average
- Recorded and uploaded two 5-minute videos weekly to TORSH Talent of their child during the identified routine

Method-Procedures

Intervention

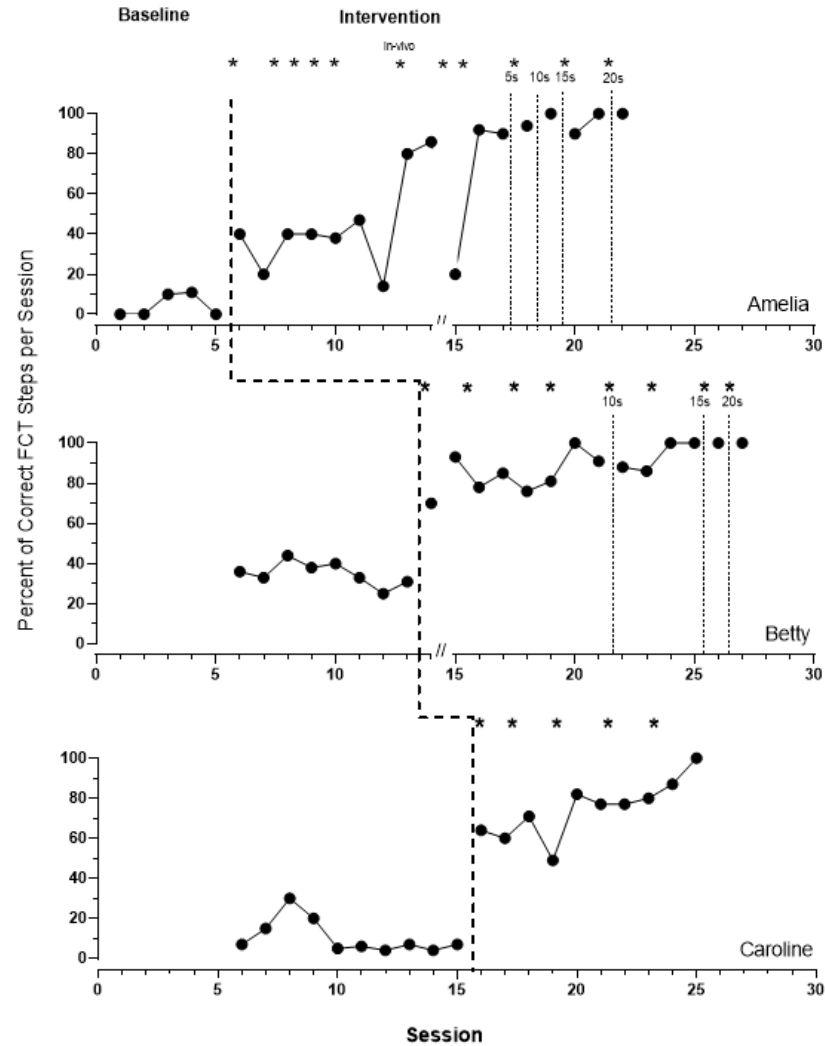
- Caregivers were given access to online modules related to:
 - Challenging behavior as communication
 - Preventative strategies
 - Teaching new communication
 - Responding to appropriate and challenging behaviors
- Weekly virtual coaching sessions between researchers and caregivers using practice-based coaching via Zoom
- Caregivers still uploaded two 5-minute videos per week of them implementing FCT with their child

Coaching Sessions Using Practice-Based Coaching

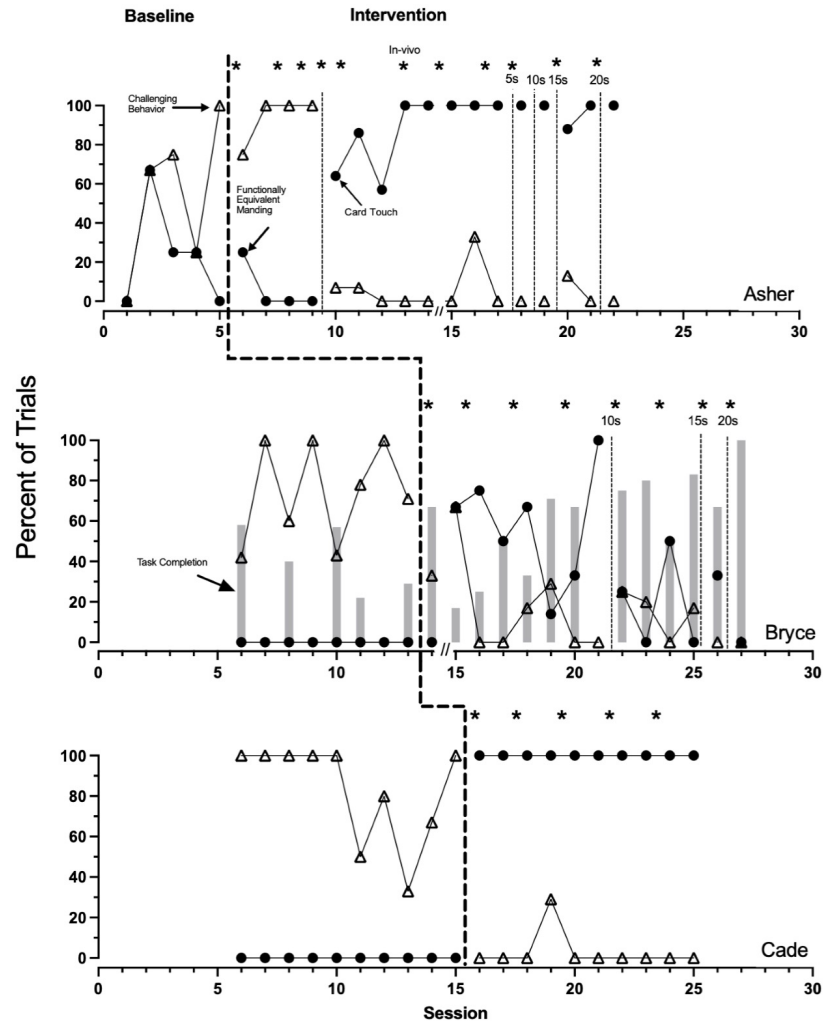
- First coaching session
 - Identified strengths and areas for support
 - Set a goal and created an action plan

- Weekly coaching sessions
 - Coaches reviewed uploaded videos prior to meeting with caregivers
 - Provided feedback via time-stamped on TORSH Talent
 - Reviewed action plan and goal

Parent FCT Implementation



Child Outcomes



Telehealth and FCT Social Validity

- Caregivers reported that support they received via telehealth was “Good” or “Excellent”
- They found telehealth coaching to be useful and feasible for teaching them to use FCT
- FCT intervention was helpful in reducing challenging behavior and increasing communication
 - Helps reduce stress in the home

Discussion

- Practice-based coaching via telehealth can be used to train parents to implement FCT
- Parent implemented FCT can help reduce child problem behavior and improve FCRs
- Even without perfect parent fidelity, child problem behavior still decreased and FCRs increased
- Parents reported high satisfaction with the FCT intervention, and the coaching provided, however, indicated when given the choice they would prefer in-home or in-person support
- Some parents required more intensive supports to increase their implementation fidelity

THANK YOU

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QUESTIONS?