PARENT TRAINING
FOR DISRUPTIVE BEHAVIORS
IN AUTISM SPECTRUM DISORDER

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Presentation Objectives

- Review various forms of parent training for autism spectrum disorder

- Provide an overview of the RUBI Parent Training program
  - Program content
  - Clinical implementation
  - Therapist training procedures

- Present research findings on the RUBI PT program
  - 2 feasibility, 2 efficacy trials
Autism Spectrum Disorder (DSM 5)

A: Deficits in social communication and social interaction (blends social with communication)

B: Restricted, repetitive patterns of behavior (includes insistence on sameness)

C: Symptoms are present in early childhood

D: Symptoms impair everyday functioning

American Psychiatric Association, 2013
ASD: Other Features

• 4:1 male to female
• 30 - 40% Intellectually Disabled
• Impaired daily living skills (not explained by ID)
• Up to 25% have seizures
• High rates of serious behavioral problems, hyperactivity and anxiety
Autism Spectrum Disorder

• Current Prevalence Rates
  • 1 in 68 children (CDC, 2014)
  • 6 per 1,000 children worldwide (Elsabbagh et al, 2012)

• Broadening case definition
• Increased public awareness
• Better tools for measurement
Good News, Bad News

• Better at identifying children with ASD

• Few evidence-based treatments

• Parents overwhelmed by ‘treatment’ choices
  • Google search Autism Treatment = 69.6 million hits
    • (up from 37 million last year, 9 million two years ago!!)
    • 6.7 million when you add ‘evidence based’
Added Challenges of Treatment

- Most EBTs are costly, time- and personnel-intensive
  - Challenge to wide-ranging dissemination
  - Hard for families to access

- There is a pressing need for trials that will expand the availability of **empirically supported, time-limited, cost-effective** treatments for ASD
Parent Training

• Traditionally a time-limited approach
  • Few hours per week

• Emphasizes role of parents as the agent of change

• History as established EBT in child mental health
Why Target Families?

• Parents of children with ASD report high levels of stress
  • Higher than parents of children with other chronic medical or developmental conditions
  • Associated with both core symptomatology and disruptive behavior

_Davis & Carter (2008, JADD), Hastings et al. (2005, JADD)_)
Why Target Families?

- Parent inclusion in treatment is not common
  - Difficulties with skill generalization
    - “no problems at school”

- High rate of accommodation
  - “Walking on eggshells”
    - E.g., dressing child, mashing food
Why Target Families?

- High Rate of disruptive behavior problems (≈50%)
  - Aggression, noncompliance, SIB, property destruction
  - Communication deficits = disruptive behavior
  - Requires skillful responses from parents

- Adaptive Skills Deficits
  - DLS performance >1 SD below IQ
  - Resistance in learning new skills or performing acquired skills
  - Noncompliance negatively impacts DLS growth
    - E.g. Getting dressed in the morning
Parents need specific instruction on techniques to:

Improve core symptoms

Reduce challenging behaviors, and

Improve adaptive functioning in their children
Side Bar...... Karen’s PSA

• Parent Training = Good

• What exactly is “Parent Training” in ASD
Parent Training (PT)

• Well established in typically developing children
  • 30+ years of rigorous evaluation
  • Focus on externalizing behavior disorders

• Several models with empirical support
  • Kazdin Method of Parenting
  • Eyberg’s Parent-Child Interaction Therapy
  • Barkley’s Defiant Children
  • Webster-Stratton’s Incredible Years
Parent Training in ASD: Notes on a Literature Search

• Labels include:

  • “parent training” (Coolican, Smith, & Bryson, 2010; Ingersoll & Dvortcsak, 2006; Matson, Mahan, & Matson, 2009; Solomon, Necheles, Ferch, & Bruckman, 2007).

  • “parent education” (Koegel, Simon, & Koegel, 2002; Shultz, Schmidt & Stichter, 2012; Stahmer & Gist, 2001; Symon, 2001; Tonge, Brereton, Kiomall, Mackinnon, et al., 2014)

  • “parent-implemented” (McConachie & Diggle, 2007; Nunes & Hanlin, 2007; Reagon & Higbee, 2009; Tarbox, Schiff, & Najdowski, 2010)

  • “parent-mediated” (Diggle, McConachie, & Randle, 2002; Ingersoll & Wainer, 2013; Oono, Honey, & McConahie, 2013; Schertz & Odom, 2007; Siller, Hutman, & Sigman, 2013)

  • “caregiver-mediated” (Kasari et al., 2014)
Variations in format, location, intensity, duration, target age range
Research on PT in ASD: Core Symptoms

• 2013 Cochrane Review (Parent Mediated EI in Young Children)
  • 13 of 19 RCT target core symptoms
  • only one study (Green, 2010) adequately powered
  • no study identified a significant reduction in maladaptive behavior in favor of the parent training intervention

• Within the last 2 years (NDBIs)
  • JASPER
  • ESI
  • ESDM
  • PRT
Research on PT in ASD: Disruptive Behaviors

- Single case design and small RCTs (proof of concept)
  - Small sample sizes
  - Nonrandom treatment assignment
  - Poorly characterized samples
  - Lack of manualized procedures
    - Idiosyncratic
    - Hinders replication
Need for PT EBTs in ASD

- **NIMH Ad Hoc Committee** ([Smith et al., 2007; Lord et al., 2005; NIMH, 2004])
  - Recognized limitations of current research
  - Outlined steps to move the field forward
    - Develop a manualized intervention
    - Collect feasibility data
      - Can therapists reliably deliver the treatment?
      - Do parents show up? Do they stay in treatment?
      - Can they do it? Do they like it?
    - Implement large-scale, multi-site, randomized clinical trials
    - Disseminate treatments
Parent Training:

Development & Essential Ingredients
RUPP Consortium

- Risperidone only vs. Risperidone + Parent Training
  - Yale
    - Lawrence Scahill, MSN, PhD
  - Indiana
    - Christopher McDougle, MD
  - Ohio State
    - Michael Aman, PhD
Early Steps

DEVELOPMENT OF A PARENT TRAINING PROGRAM FOR CHILDREN WITH PERVERSIVE DEVELOPMENTAL DISORDERS

Cynthia R. Johnson¹*, Benjamin L. Handen¹, Eric Butter², Ann Wagner³, James Mulick², Denis G. Sukhodolsky⁴, Susan Williams⁴, Naomi A. Swiezy⁵, Eugene Arnold², Michael G. Aman², Lawrence Scahill⁴, Kimberly A. Stigler⁴, Christopher J. McDougle⁵, Benedetto Vitiello³ and Tristram Smith⁶
RUPP Consortium: Manual Development
Johnson et al., 2007

- No ‘off the shelf’ parent training manual available
- Pittsburgh Consultants
  - Cynthia Johnson, PhD and Ben Handen, PhD
Rationale for Behavioral PT Model in ASD

• Empirical support of Applied Behavior Analysis (ABA) in ASD literature
  • *But* there is little guidance on when, why and how to use ABA techniques in practice (*Kasari & Smith, 2013, Autism; Romanczyk et al., 2014, RJADD)*
  
• *And* these techniques have not been evaluated in large trials (*Smith et al., 2007, JADD)*
PT Intervention Targets

• Manualize a program that:
  • Reduces challenging behaviors
    • Noncompliance, tantrums, aggression, transitions/daily routines
  • Increases adaptive skills
  • Focuses on antecedent (prevention) and consequence based strategies, generalization and maintenance
Parent Training Sessions

11 core sessions

• Behavioral Principles (the ABC’s)
• Prevention Strategies
• Daily Schedules
• Reinforcement 1 & 2
• Planned Ignoring
• Compliance Training
• Functional Communication Skills
• Teaching Skills 1 & 2
• Generalization & Maintenance

PLUS

• 2 Home Visits
• 2 Telephone Boosters

7 optional sessions

• Toileting
• Feeding
• Sleep
• Time Out
• Imitation
• Crisis Management
• Contingency Contracting
<table>
<thead>
<tr>
<th>SESSIONS</th>
<th>SKILLS/ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Behavioral</td>
<td>- Introduce overall treatment goals</td>
</tr>
<tr>
<td>Principles</td>
<td>- Introduce concepts of functions of behavior, antecedents and consequences of behavior</td>
</tr>
<tr>
<td>Prevention Strategies</td>
<td>- Discuss antecedents to behavior problems and develop preventive strategies</td>
</tr>
<tr>
<td>Daily Schedules</td>
<td>- Develop a daily schedule and identify points of intervention (including use of visual schedules) to decrease behavior problems</td>
</tr>
<tr>
<td>Reinforcement 1</td>
<td>- Introduce concept of reinforcers – to promote compliance, strengthen desired behaviors and teach new behaviors</td>
</tr>
<tr>
<td>Reinforcement 2</td>
<td>- Introduce “catching your child being good.”</td>
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<td></td>
<td>- Teach play and social skills through child-led play</td>
</tr>
<tr>
<td>Planned Ignoring</td>
<td>- Explore systematic use of extinction (via planned ignoring) to reduce behavioral problems</td>
</tr>
<tr>
<td>Compliance Training</td>
<td>- Introduce effective parental requests and the use of guided compliance to enhance compliance and manage noncompliant behaviors</td>
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<tr>
<td>Functional</td>
<td>- Through systematic reinforcement, teach alternative communicative skills to replace problematic behaviors</td>
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<tr>
<td>Communication Training</td>
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<tr>
<td>Teaching Skills 1</td>
<td>- Using task analysis and chaining, provide tools to replace problem behaviors with appropriate behaviors and how to promote new adaptive, coping and leisure skills</td>
</tr>
<tr>
<td>Teaching Skills 2</td>
<td>- Teach various prompting procedures to use while teaching skills</td>
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<tr>
<td>Generalization &amp;</td>
<td>- Generate strategies to consolidate positive behavior changes and generalize newly learned skills</td>
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<tr>
<td>Maintenance</td>
<td></td>
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<tr>
<td>Optional Sessions</td>
<td>- Provide instructions on optional topics or review materials</td>
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<tr>
<td>Telephone Boosters</td>
<td>- Review implementation of intervention strategies</td>
</tr>
<tr>
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<td>- Develop interventions for any newly emerging behavior concerns</td>
</tr>
</tbody>
</table>
Program Structure

- Week 1-16
  - 11 Core Sessions
  - 1 Home Visit
  - Up to 2 Optional Sessions
    - toileting, feeding, sleep, time out
- Week 17-24
  - 1 Home Visit
  - 2 Booster Sessions
  - Up to 6 dyad coaching sessions
PT Sessions

• Delivered individually to each child’s parents
• 60- to 90-minute sessions in clinic
• Components of sessions
  • Therapist script
    • Didactic Instruction
  • In-session activities
    • Activity sheets
    • Role-plays between clinician and parent
• Fidelity forms
Activity Sheet Example

Identifying Antecedents

#1. Susan hits Fred after he takes the book she is looking at.
Antecedent: _______________________________________________________

#2. Mary starts to interrupt her mother by screaming when she is talking on the telephone.
Antecedent: _______________________________________________________

#3. Randy throws his vegetables after his mother puts them on his plate.
Antecedent: _______________________________________________________
Use of Video Training Vignettes

- Depicts common challenging behaviors
- Supplements direct instruction
- Demonstrates flawed parent management strategies where parent was to identify error
- Assesses parent understanding & acquisition of techniques
Video Vignette Example
Video Vignette Example
Aspects to Address ASD

• Use of visual strategies
• Parent materials on identifying function of behaviors
• Functional communication approach
• Emphasis on decreasing behavioral excesses, but also new skill acquisition
• Focus on generalization & maintenance
## Lets Start at the Very Beginning… The ABC’s

<table>
<thead>
<tr>
<th>ACRONYM</th>
<th>What it Stands For</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
</table>
| A       | Antecedent         | Cue or trigger that occurs right before the behavior takes place | □ Being told what to do  
□ Not getting what you want  
□ Not getting attention |
| B       | Behavior           | The target behavior that can be observed, counted, or timed. | □ Hitting  
□ Yelling  
□ Talking Back  
□ Whining |
| C       | Consequence        | What occurs right after the behavior. Can be positive or negative | □ Time Out  
□ Privilege Removal  
□ Ignore  
□ Reward  
□ Hug/Praise |
The Role of the ABC’s

• Determine the function of the behavior*
  • Escape/Avoidance
  • Attention
  • “Get What You Want”
  • Self-stimulatory
• Need this information to determine which intervention strategy to use
  • E.g. Disruptive behavior in the classroom

*All behaviors are ‘communicative’
  -especially relevant for kids on the spectrum
<table>
<thead>
<tr>
<th>Date</th>
<th>Beginning/Ending Time</th>
<th>Setting</th>
<th>Activity</th>
<th>Who was involved</th>
<th>Antecedent – What happened right before the behavior?</th>
<th>Behavior – What did it look like?</th>
<th>Consequence – What happened after the behavior; how was the behavior handled?</th>
<th>Function of the behavior</th>
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Successes

• Clear antecedents: pulling hair elicits behavior: screaming
• Clear consequence: teacher answers question when child raises hand (behavior)
Tribulations

- Determining function by available information
- Children fighting or child screaming with unknown trigger
  - Sometimes antecedents are hard to identify
## Prevention Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Avoid situations or People</strong></td>
<td>- We never take our child to the movies, he can’t sit that long.</td>
</tr>
<tr>
<td><strong>Do things in small doses</strong></td>
<td>- When we go to my other son’s basketball games, my husband takes our son for a walk after being in the gym for 15 minutes.</td>
</tr>
<tr>
<td><strong>Change order of events</strong></td>
<td>- We used to let the kids watch TV while they eat. But they never seemed to finish and we kept yelling at them to eat. So now we have a rule, no TV until after dinner.</td>
</tr>
<tr>
<td><strong>Respond to early signs of the problem</strong></td>
<td>- We can usually tell when our son can no longer sit in a restaurant. He starts to squirm and fidget. After a few more minutes, he may start screaming. As soon as we see him becoming antsy, we give him a picture book to look at. This distracts and calms him. After a few minutes, my husband will take him for a walk before he gets squirmy again.</td>
</tr>
<tr>
<td><strong>Change how you ask or respond</strong></td>
<td>- With our son, giving choices often lessens noncompliant behavior. For example, before bedtime we offer the choice between two books. Our son will choose one and then he usually cooperates with the bedtime routine.</td>
</tr>
<tr>
<td><strong>Address Setting Events</strong></td>
<td>- School staff reported that our son was becoming more irritable and aggressive between 11 am and noon every day at school. Since he gets on the school bus at 7am, we thought he might be hungry. We came up with a plan to give him a small snack around 10:30 am, and the problem has been eliminated.</td>
</tr>
<tr>
<td><strong>Use Visual or Auditory Cues</strong></td>
<td>- Our son used to be cranky during transitions at home and school. His teacher gave him a picture schedule showing all the activities for the day. She had him check his schedule before each transition and bring the picture of the next activity with him as he makes the transition. This decreased the problem to from 3-4 times per day to 1-2 times per week.</td>
</tr>
</tbody>
</table>
Successes

- Strategies predictably reduce target behavior
Tribulations

- Children don’t like some of the strategies
- Strategies take time to work
- Parents implement strategies AFTER problem behavior occurred
Visual Schedules

• Help understanding of information provided
• Help decrease difficulties during transitions and change between preferred to less preferred activities
Visual Schedules

- Structured, visual representation of schedule
  - Daily
  - Portion of the Day
    - Morning, evening
    - Free play
  - Particular Routine
    - Bathing
    - Brushing teeth
    - Getting dressed
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Problem area or potential reinforcer</th>
<th>Potential Prevention Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30</td>
<td>Eat Breakfast</td>
<td></td>
<td>Potential Reinforcer</td>
</tr>
<tr>
<td>6:45</td>
<td>Watch TV</td>
<td></td>
<td>Potential Reinforcer</td>
</tr>
<tr>
<td>7:00</td>
<td>Get dressed</td>
<td></td>
<td>Problem; Choices; Change the order of events</td>
</tr>
<tr>
<td>7:15</td>
<td>Brush Teeth</td>
<td></td>
<td>Problem; Visual Cue (pictures); Auditory cue (timer); Use fun activities to reward completion of</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>less desired activities</td>
</tr>
<tr>
<td>7:20</td>
<td>Get back pack</td>
<td></td>
<td>Neither</td>
</tr>
<tr>
<td>7:30</td>
<td>Get on the bus</td>
<td></td>
<td>Neither</td>
</tr>
</tbody>
</table>
Visual Schedule Example

homework  outside  toys  computer  books
play-doh  play with sisters  wash hands  sit at table  dinner
bath/PJ's  brush teeth  bed
Visual Schedule Example

Marissa's Morning

1. Wake up
2. Breakfast
3. Brush teeth
4. Brush hair
5. Change clothes
6. Drive in car
7. Teacher
8. Good By!
Visual Schedule Example

morning
- time to eat breakfast
- time to get dressed
- I will get my bookbag

afternoon
- time to eat lunch
- I will play in the backyard
- time to go to Kroger

evening
- time to take a bath
- I will read with daddy
- time to go to bed
Successes

- Children love their new schedule!
Tribulations

- Children want to arrange their schedule
- Parents *have* to follow the schedule
Reinforcement

- Identify reinforcers
  - Social, material, activity, primary
    - Inclusion of ‘unusual’ reinforcers/child’ preoccupation
- Identify appropriate behavior to increase
  - May be opposite of behavioral concern
- Use contingently
- Restrict access
- Reinforcement vs. Bribery
Successes

• Expectations are reasonable
• Children are motivated to earn
Tribulations

- Children with ASD are not always motivated by the easiest reinforcer to give (social reinforcers)
- Sometimes atypical items or uses of items are reinforcing
Planned Ignoring

• Ignore Child AND Behavior
  • Attention seeking behaviors
  • Nonaggressive, nondestructive
    • tantrums
• Ignore Child, NOT Behavior
  • Dangerous behaviors
    • Running into street
• Ignore Behavior, NOT Child
  • High frequency behaviors
    • Repetitive question asking
Planned Ignoring

- Ignoring should be intentional/planned
- Ignoring should be:
  - Immediate
  - Contingent
  - Consistent
  - Exaggerated
Successes

- Benefits to planned ignoring:
  - Decreasing inappropriate behavior
  - Easily generalizable
  - Can work for a variety of problem behaviors and functions
Tribulations

- Difficulties with planned ignoring:
  - It can get worse before better
  - It can take a while to work
  - Sometimes comes back for a short time
Compliance Training

- Be close in proximity
- State positively and clearly
- One at a time
- Be specific
- Developmentally appropriate
- Physically guide
- Praise compliance
Successes

- Begin with small successes and gradually work up to completing larger demands
Tribulations

- Physical guidance is hard especially if the child is big
- Repeating command
Functional Communication

• Replacement communication strategy is:
  • Less effortful
  • Works quickly
  • Works consistently
Teaching Skills

- Task Analysis
  - Chaining
- Prompting
  - Verbal: Tell
  - Visual: Show
  - Physical: Do
Task Analysis: Brushing Teeth

1. Get toothbrush from holder
2. Rinse toothbrush
3. Open toothpaste
4. Squeeze toothpaste on brush
5. Brush bottom right teeth
6. Brush bottom left teeth
7. Brush upper right teeth
8. Brush upper left teeth
9. Spit
10. Brush front teeth
11. Brush back teeth
<table>
<thead>
<tr>
<th>List Steps of Skill</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
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<th>Date</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>1. Unscrew lid of toothpaste</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<td>+</td>
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<tr>
<td>2. Put paste on brush</td>
<td>InP</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>3. brush bottom left</td>
<td>NI</td>
<td>InP</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>4. brush bottom right</td>
<td>NI</td>
<td>NI</td>
<td>InP</td>
<td>+</td>
<td>+</td>
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<td>5. brush top right</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>InP</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>6. Brush top left</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>InP</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>7. Rinse Toothbrush</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>InP</td>
<td>+</td>
</tr>
<tr>
<td>7. Put Brush and Paste Away</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>InP</td>
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</tbody>
</table>

+ = skill acquired; InP = In progress; NI = Not Introduced
Successes

- Children begin to quickly acquire skills
Tribulations

- Problem behavior still interferes
- Child requires repetition
- Parent expectation exceeds child skill level
Generalization & Maintenance
Successes

- Everyone is on board
- Problem behavior decreases in all settings
- Skills have generalized
Tribulations

- Caregivers do not implement strategies consistently
- Problem behavior continues in multiple settings
- Only successfully reduced some problem behavior to acceptable levels
Therapist Training

- **Training**
  - Master’s degree or higher
  - Didactic training
  - Video review of one case delivered by expert therapist
  - Treatment with one non-study family
    - All sessions reviewed
    - 80% fidelity each session to qualify to treat families

- **Supervision**
  - Weekly supervision by Master PT Therapist
  - (for research) Monthly cross-site teleconferences
Maintaining Treatment Fidelity

- Delivery of treatment as intended (integrity) & participant compliance to treatment (parent adherence)
- Detailed therapist scripts for session
- Treatment Fidelity Checklists
  - Specify the required elements of each session
Compliance Training Treatment Fidelity

RUPP PI-PDD STUDY

General Instructions: The clinician should complete a Treatment Fidelity Checklist for each session during the session to indicate the degree to which the session Integrity Goals and Parent Adherence / Objectives were accomplished. The Integrity Goals pertain to clinician behavior while the adherence / objectives relate to parent response. If a goal was not introduced or covered the clinician should provide an explanation of what occurred. A place is provided for this at the end of the checklist. For more details about rating guidelines, refer to the Guidelines for Completion of Treatment Fidelity Forms. This form should be used for any visit which covers this material. Enter the date for which the rating is applicable in the space provided. This will allow for documentation of all topics covered. Only circle 0, at the last session, if the session material was not covered at any session in the study.

The following scale should be used to rate the degree to which session goals were attained.
- 0 = Goal was not introduced or covered by the clinician
- 1 = Goal was partially achieved
- 2 = Goal was fully achieved

<table>
<thead>
<tr>
<th>Session Integrity Goals:</th>
<th>Rating:</th>
<th>Date:</th>
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</thead>
<tbody>
<tr>
<td>1. Review homework assignment(s) from prior session.</td>
<td>0 1 2 N/A</td>
<td>/ /</td>
</tr>
<tr>
<td>2. Parent will demonstrate play session with child (optional).</td>
<td>0 1 2 N/A</td>
<td>/ /</td>
</tr>
<tr>
<td>3. Introduce parents to the concept of compliance.</td>
<td>0 1 2 N/A</td>
<td>/ /</td>
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<tr>
<td>4. Generate a list of Compliance Commands.</td>
<td>0 1 2 N/A</td>
<td>/ /</td>
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<tr>
<td>5. Generate a list of Noncompliance Commands.</td>
<td>0 1 2 N/A</td>
<td>/ /</td>
</tr>
<tr>
<td>6. Go over the steps for teaching compliance.</td>
<td>0 1 2 N/A</td>
<td>/ /</td>
</tr>
<tr>
<td>7. Problem solve if things go wrong.</td>
<td>0 1 2 N/A</td>
<td>/ /</td>
</tr>
<tr>
<td>8. Identify correct and incorrect use of compliance training via video tapes.</td>
<td>0 1 2 N/A</td>
<td>/ /</td>
</tr>
<tr>
<td>9. Role play correct use of compliance training.</td>
<td>0 1 2 N/A</td>
<td>/ /</td>
</tr>
<tr>
<td>10. Go over how to use compliance training to teach a child to &quot;stop.&quot;</td>
<td>0 1 2 N/A</td>
<td>/ /</td>
</tr>
<tr>
<td>11. Homework: Explain compliance training assignment.</td>
<td>0 1 2 N/A</td>
<td>/ /</td>
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</tbody>
</table>

A total score of 16 (or 18 including optional item) (80%) and higher reflects adequate treatment fidelity. Total Score: ___
Final PT Manual

- Introduction
  - Case examples
  - ‘Clinician Tips’
- 11 Core & 7 Optional Sessions
  - Therapist script
  - Activity Sheets
  - Parent Handouts
  - Fidelity Checklists
- Home Visit
- Booster Session

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Parent Training in Practice
In their words . . .

At the end of treatment, while reviewing a final Behavior Support Plan:

We can do things together as a family now. That never happened before. You changed our lives.
What’s in the deal?

Principles

- Expert guided
- Family-centered
- Partnering

Promotes

- knowledge transfer
- meaningful targets
- new skills
- behavior change
Personalization

• Clinicians make choices in personalizing the PT program based:
  • on family need
  • child age
  • level of functioning
  • target behaviors

The manual is the one constant…. the output is unique as a snowflake
Process of Personalization

- A family centered, personalized intervention is achieved through flexible and creative components *co-constructed* by the clinician and parent:
  - Homework selection
  - Documentation in Behavior Support Plan (BSP)
  - Response to challenges and barriers
Homework

- Homework is central to change
- Choices of homework came from standard prompts but were personalized and crafted in partnership between the parent and clinician
- Encourage parents to select homework assignment:
  - Behavioral target
  - Target strategy
Examples of Homework Assignments

- Reinforcement
  - Catch being good
  - Contingency management

- Prevention Strategies
  - Choose one of several options
  - Schedules
    - Visual?
    - Routine

- Planned Ignoring
  - Targets selected by parents
  - Type of ignoring

- Compliance Training
  - Parent generated list of compliance targets

- Teaching
  - Parent generated acquisition targets
Behavior Support Plan (BSP)

• An organizing and living document
  • summarizes various intervention strategies that were devised and implemented for each child
Behavior Support Plan (BSP): Information Sources

- Based upon any available information
  - Parent interview
  - Parent-child interaction observations
  - Parent ratings on standardized questionnaires
  - Conversations during PT sessions
Behavior Support Plan (BSP): Process

- Introduced in first session
- Updated at each subsequent PT session
  - Builds over time
  - Reminder of interventions introduced earlier
- Serves as a final document of accomplishments, challenges, and solutions
  - Finalized at last session
  - Potential future strategies added as well
BSP Provides Direction: Now and for the Future

- A blueprint for what the parent wants to achieve with the PT program
- A diary of the interventions developed, sustained, and revised during the course of the program
  - The completed BSP helps parents see the expansion in their ability to manage challenging behaviors over the course of treatment.
<table>
<thead>
<tr>
<th><strong>TARGET PROBLEM BEHAVIORS:</strong>&lt;br&gt;definition of the behaviors we want to go away</th>
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</thead>
<tbody>
<tr>
<td><strong>Tantrums</strong>&lt;br&gt;yelling, screaming, sometimes with accompanying aggression or throwing/knocking over items</td>
</tr>
<tr>
<td><strong>Noncompliance</strong>&lt;br&gt;Refusal to comply with directions when asked to perform certain tasks (e.g. morning/evening routine) or nonpreferred demands (e.g., clean up).</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>PERCEIVED FUNCTION(S):</strong>&lt;br&gt;the cause of target behaviors</th>
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<tbody>
<tr>
<td><strong>Tantrums</strong>&lt;br&gt;To get what he wants (access to inappropriate snack)&lt;br&gt;Escape when given a demand that he does not want to comply with&lt;br&gt;Escalation to get attention (during planned ignoring)</td>
</tr>
<tr>
<td><strong>Noncompliance</strong>&lt;br&gt;To get out of an unwanted activity (e.g. not sitting at the dinner table; clean up; morning/evening routine demand)</td>
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<table>
<thead>
<tr>
<th><strong>PREDICTORS/TRIGGERS FOR PROBLEM BEHAVIORS:</strong>&lt;br&gt;Situations that may cause the behaviors to occur more frequently</th>
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<tbody>
<tr>
<td>Transitions (from more to less preferred activities)</td>
</tr>
<tr>
<td>When limits are set (e.g., when told 'no')</td>
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<tr>
<td>When given a non-preferred demand</td>
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<tr>
<td>When Ben wants his mother’s attention</td>
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</table>
| **Primary Reinforcers** | Chocolate (M&Ms)  
Chicken nuggets  
Cookies  
Mac n Cheese  
Juice Box |
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<tbody>
<tr>
<td><strong>Social Reinforcers</strong></td>
<td>High Five</td>
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</table>
| **Material/Tangible Reinforcers** | Matchbox cars  
Superheroes  
Anything with a Car  
Toys that light up/noisy toys  
Mega Blocks |
| **Activities/Privileges** | Going outside/bike riding with mom  
Riding trails with mom  
Going to the park  
Chucky Cheese  
Kindle game |
| **Tokens** | OT - uses a ticket system  
Home - point chart  
Marble Jar |

**Additional Notes about Reinforcers:**

**Reinforcers work best if:**
- Ben's access to the reinforcer is limited **except** in the context of the behavioral contingency
- Ben really wants to work for the reinforcer
- The reinforcer is given ONLY when Ben successfully completes the behavior

**Use of Stereotyped Interests as Reinforcers:**
- The goal for repetitive behaviors/stereotyped interests is to make sure that they are not interfering with Ben’s social interactions or learning
- These highly reinforcing behaviors can be used as motivators for target behaviors. Tie access to the highly preferred toys/activities (e.g., Matchbox cars, toys that light up) to the completion of more functional tasks/behaviors
- Keep in mind it is ok to allow Ben to engage with these stereotyped interests/behaviors as they likely act as a ‘stress-reliever’ for him. There is just a right ‘time and place’ for him to play with these items (i.e., you can allow time for it, but you can also put limits on it).
<table>
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<tr>
<th>STRATEGY</th>
<th>SPECIFIC DETAILS</th>
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</table>
| **Using Reinforcers in a Behavioral Contingency** | This strategy involves requiring a specific, targeted behavior to occur in order for Ben to earn access to a reinforcer.  
To help encourage Ben to get dressed independently in the morning, we developed a reinforcement contingency: If Ben dresses independently, then he earns a point on his point chart.  
This assumes that you follow through and do not provide the point if Ben is noncompliant in any way with the target behavior of “getting dressed independently.”  
A note about behavioral contingencies: You can “up the ante” as Ben progresses with his compliance in the targeted behavior. For example, as part of the morning routine, you could first say, “Get dressed all by yourself, then you get a point on your point chart.” When Ben is consistently following this contingency, you can ‘up the ante’ to “Get dressed all by yourself and put your PJ’s in the laundry hamper, then you get a point on your point chart.” And so on....  
NOTE: To PREVENT behaviors, it is important that behavioral contingencies are set up in advance (i.e. being aware of predictable challenges – such as difficulties with parts of the morning routine) before behavior problems arise.  
Implementing a contingency AFTER the behavior has happened (e.g., Ben has already tried to run out of the room as a way to get out of a demand) will lessen the impact of the contingency, and may reinforce negative behavior (i.e. Ben may learn that if he runs away, he is offered a fun reward for moving forward). | |
| **If-Then Negative Consequence Contingency**   | This is related to the above: While we encourage "positive" or reward-based contingencies, this could instead involve a contingency such as "If you call mom by my first name, then you will lose ######."                                                                                           |                |
| **Timed Reward for “Using Kind Words”**       | For particularly challenging times of the day, when Ben is more likely to use 'negative talk', allot time intervals that reinforcers can be provided for the absence of the targeted problematic behavior:  
Ben will receive a particular reward for the absence of 'negative talk' (paired with praise ‘good job talking kindly’). For example, if Ben uses kind words for the next 30 minutes, then he can earn access to his mom’s kindle. |                |
# Prevention Strategies (Antecedents)

*What we are going to do so the behaviors do not occur in the first place*

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Specific Details</th>
<th>Date Initiated</th>
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</table>
| **Timers (A type of Visual Cue)** | Visual timers (time-timers) provide a great way to indicate to children when a transition or a reward will occur or when an activity is over. Instead of verbally telling Ben how much time until a transition will occur, use a timer to present this information.  
  - This avoids parents having to be the ‘bearer of bad news’ (i.e., that a transition needs to occur).  
  - When the timer goes off, it is important to respond immediately.  
  - A timer was recommended to use as a cue that it was time to clean up the toys  
  - During Ben's dinner routine, a timer was introduced to help him to stay at the table for his entire meal (10-15 minutes)  
    - We started with providing M&Ms every 3 minutes for appropriate sitting during dinner, then increased this to every 4 minutes  
    - Eventually, we moved to using timed intervals to consume portions of the meal (e.g., dinner divided into 4 segments; Ben had 3 minutes to eat each segment. Completion = M&M reward) |                |
| **Changing the order of events/** | Changing the order of activities in the daily routine can make the day run more smoothly, making sure less preferred activities come first, followed by more preferred activities. Having preferred activities come second serves to motivate completion the less exciting activity. This was used during the morning routine:  
  “First get dressed; If there is time left over, you can watch TV.” |                |
| **"First-Then"**               |                                                                                                                                                                                                                 |                |
| **Changing the way that you ask** | Saying ‘no’ directly can often result in increased problem behaviors. Instead, it can be helpful to find alternative ways to respond. Giving choices can help to increase compliance and reduce difficult behaviors.  
  - Ben can be given choices as part of his routine (e.g., do you want to do this activity or that one)  
  - This was also applied in offering snack choices (to promote selection of healthy afternoon snacks)  
**NOTE:** if Ben does not accept your choices or offer an appropriate alternative, then you can say "Make a choice or I will make the choice for you" - then follow through! |                |
# CONSEQUENCE STRATEGIES:
*What to do AFTER the behaviors occur*

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<tr>
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</table>
| **Types of Planned Ignoring** | For nondestructive but attention seeking behaviors, *ignore both the child and the behavior.*

For dangerous behaviors (e.g., bolting down the street; self-injury), *attend to the child and stop the dangerous behavior, but do not provide attention to the child* while you are addressing the behavior.

For high frequency behaviors (e.g., repetitive question asking), ignoring the child when this behavior occurs could result in ignoring the child for large portions of the day. Instead, just do **targeted ignoring of the behavior while otherwise providing attention to the child.** | |
| **Rules for Planned Ignoring** | Ignore the behavior COMPLETELY (no facial expression, no talking, walk away if needed)

Ignore until the targeted behavior stops. If you break down and pay attention before the behavior stops, the child learns that is your ‘breaking point’.

The behavior typically *gets worse before it gets better* (kids like to ‘up the ante’). | |
| **Planned Ignoring Strategy for Ben:** | • Ignore Ben's *negative talk*. Ben often said inappropriate words. Planned ignoring was used to eliminate any social attention provided to these behaviors. Initial concerns about Ben escalating to destructive behavior were addressed by applying "Ignore the Child but NOT the Behavior".

• When on the phone: This strategy is best implemented in combination with prevention (setting Ben up with something to do while you are on the phone) and reinforcers ("If you play quietly while I'm on the phone, you can earn ####"). If an unexpected call occurs and Ben is unoccupied/likely to be disruptive (e.g., when in the car), you can tell the person you will call them back in X minutes. Then set up the prevention/reinforcement contingencies, and then call the person back. | |
<table>
<thead>
<tr>
<th>Compliance Training</th>
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<tbody>
<tr>
<td>Teaching your child to comply with requests involves a number of important steps:</td>
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</tbody>
</table>
| • Gaining their attention and eye contact  
| • Telling (not asking) them exactly what to do and **at the same time** providing some physical guidance to complete the command.  
| • Providing immediate and specific praise as your child complies.  
|  
| It is important to **wait** to give the command until you are ready to follow through - and **not** from across the room  
|  
| We discussed the use of Planned Ignoring and Reinforcement in combination with Compliance Training when cleaning up toys. This is to target some of the ( ignorable ) negative behaviors ( laughing ) that occurred when mom was using physical guidance to have Ben clean up. Reinforcement ( e.g., point on point chart ) can be used as an additional motivator to comply with commands.  
|  
| We discussed using this strategy in order to teach Ben to comply using the "Compliance Commands" - "Clean up your toys" and "Go to the bathroom to brush your teeth" and "Get in the bathtub" |
SLEEP:

We targeted the following sleep issues:
- Sleep association (requiring watching DVD in bed in order to fall asleep)
- Sleep association (requiring mom to be present if Ben doesn’t fall asleep via the DVD)
- Night wakings, involving moving to mom’s bed

Intervention included:
- Changing the bedtime routine so that DVD playing occurred BEFORE Ben was in bed
- Introducing a sound machine (DVD with quiet sounds) that will play all night as the new association to falling asleep
- Using redirection (back to bedroom) and timed check-ins by mom while Ben was falling asleep
- Using redirection (back to bedroom) if Ben moves to mom’s bed in the middle of the night.
  We discussed how sometimes mom doesn’t notice he’s moved to her bed and problem-solved use of baby monitors, or other means, to alert her to his movement. We also discussed moving Ben back to his room when mom wakes up in the morning to try to ensure Ben ends up in his bed before waking.
- Providing a reinforcer (point on his chart) for waking up in his own bed
- Using a baby gate to block Ben's access into his mom's room. When he 'encounters' the baby gate (and wakes mom up), she can then redirect him back to his own bed.

TIME OUT:
To address 'negative talk' as well as cursing.

- Time Out should be used for ONE BEHAVIOR AT A TIME, so that Ben knows exactly what behavior what will get him sent (consistently) to time out.
- Let Ben know in advance there is a new 'house rule.' You can remind him each morning that this rule is 'in effect'. You also can put up a visual reminder about this house rule (e.g., something posted right above the time out chair)
- EVERY TIME Ben engages in negative talk, he should be sent to time out, using as little physical prompting as necessary, and providing no attention to him.
- If he is too disruptive on the time out chair, he should be moved to his room.
- Ben should stay in time out for a minimum amount of time (e.g. 3 minutes).

NOTE: Ben should not be able to leave time out until he is quiet. So, if 3 minutes passes and he’s still upset, you should wait until he calms down before he is allowed to leave time out.

To help Time Out work, it is important that you increase the amount of positive attention you provide to Ben (Catch him when he's being good). Time out is most effective when there is a "healthy balance" of positive attention to counter the negative that comes with time out. We want to use the positive attention to remind Ben what happens when he behaves (i.e., I get a lot of + attention from mom!)
## FUTURE CONSIDERATIONS
*Strategies that can be implemented in the (near) future*

<table>
<thead>
<tr>
<th>STRATEGY</th>
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| **Reinforcement:** Earning Time Toward Access to Preferred Activities  
(see mealtime Timer plan) | As an alternative to giving M&M's for on target mealtime behavior, Ben could also earn 'amounts of time' toward a preferred activity.  
For example, every 4 minute interval that Ben finishes his meal portion earns him 5 minutes of special time with mom; or 5 minutes of time on mom's kindle. |
| **Prevention:** Visual Schedule | Presentation of information in a visual format (as opposed to auditory) can be extremely helpful for children with ASD. Visual schedules are pictorial representations of activities and transitions during the day.  
• while this was not introduced in our program, it may be a useful strategy in the future to help provide visual cues to the structure of daily routines |
| **Prevention:** Creating a Routine | This will increase predictability for Ben. The evening routine is already nice and predictable. As the school year starts, it may be helpful to create the same kind of predictable routine for the 'morning flow.' Mom may want to also consider adding a visual schedule to help lay out for Ben the morning schedule. |
| **Teaching Skills** | Future targets could be: pouring juice, packing backpack, getting clothes out |
In their words . . .

We never knew what to do before. Every new behavior, we were just guessing and going in different directions, arguing with each other.
In their words . . .

It used to be that I was putting out fires. Cooking. Cleaning. Work. Everything. Now I know what to do, he knows what to do. We are all happier.
BSP Provides Communication

- A vocabulary for parents to use in discussions with other providers and educators
  - fosters consistency across settings as well as communication between parents and teachers
In their words . . .

His teacher and principal never really listened to me. But now, I go into these meetings and I think I’m offering them ideas that they never thought about before!
BSP Provides Perspective

• Shows the considerable effort by the parent to reduce disruptive behavior and promote skill acquisition
  • Cumulative and comprehensive record of the parent's investment
  • Helps parents see beyond momentary set-backs
  • Helps parents to recognize the positive effects of their efforts
In their words . . .

We didn’t get the chance to do the extra feeding session. But I figured out how to get him to eat better. He’s eating more foods and sitting at the table for the whole meal.
Some Challenges

- Parent doesn’t understand the material
- Parent is not engaged
- Child melts down when new intervention is introduced
- A new crisis each week
- Behaviors got much worse

- Completing homework
  - “I forgot the sheet”
  - “I didn’t have time”
- Core symptoms improvement
- Consistency with secondary/other care givers
In their words . . .

We just have so much going on right now. I think this stuff will be helpful, it works when you use it. But I just don’t have the time to do it now.
In their words . . .

My husband’s parents undermined me all the time. You really helped me figure out how to get them on board. They’re not perfect, but it’s so much better now.
In their words . . .

I just wished he would play with other kids. He ignores his cousins. He doesn’t want anyone to throw basketballs with him. He just stops if others try to join him.
16 months later . . .
It’s just so much better. You told me there will be things that will come up, but I’ve handled them. It’s so much better now. I was clueless before.
Empirical Investigation of Parent Training
Research Units in Behavioral Intervention (RUBI) Autism Network

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Emory University

Cynthia R. Johnson, Ph.D., BCBA-D
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University of Rochester

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Michael Aman, Ph.D.
The Ohio State University

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Indiana University

Denis Sukhodolsky, Ph.D.
Yale University

Website:
www.rubinetwork.org
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RUBI Network:

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• Ohio State University (MH081105, Lecavalier)
• Indiana University (MH081221, Swiezy)
• University of Rochester (MH080906, Smith)

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• Yale University Clinical and Translational Science Award (CTSA; UL1 RR024139; 5KL2RR024138, Bearss)
• Atlanta CTSA (UL1 RR025008)
• University of Rochester CTSA (UL1 TR00042)
Need for PT EBTs in ASD

- NIMH Ad Hoc Committee (Smith et al., 2007; Lord et al., 2005; NIMH, 2004)
  - Outlined steps to move the field forward
    - Develop a manualized intervention
    - Collect feasibility data
    - Therapist fidelity
    - Parent acceptability
    - Implement large-scale, multi-site, randomized clinical trials
    - Disseminate treatments
Preliminary Empirical Investigation of PT for Disruptive Behavior in ASD

1) Initial Pilot Feasibility Trial

1) RCT Risperidone only vs. Risperidone + PT

1) Pilot Feasibility in Younger Children
RUPP Consortium: Pilot Feasibility Testing
Johnson et al., 2007; RUPP, 2007

- Open Label Pilot of PT Intervention
  - Yale, OSU, Indiana (N = 17)

- Feasibility Outcomes
  - PT delivered with high fidelity within/across therapists
  - Intervention is acceptable to parents
    - High satisfaction; low attrition rates
    - Confidence in handling current/future problems
RUPP Consortium: Large-Scale RCT
(Aman et al., 2007; Scahill et al., 2012)

• 24 Week trial: Risperidone vs. Risperidone + PT
  • Yale, OSU, Indiana N=124
    • (75 randomized to Risperidone + PT)
    • 4-13 with ASD and significant disruptive behaviors
  • Medication + PT superior to medication alone
  • Children also received lower doses of medication
  • Improvements in DLS
Next Steps

- Manual ready and procedures in place for testing PT as a standalone intervention
- Application of RUPP-PT protocol in younger population
  - Preventative
  - Recognition that many families of young children not yet open to medication
New Directions In RUPP: RUBI Pilot
Bearss et al., 2013

- Manual Revisions
  - Add new ‘play skills’ session
  - Age-appropriate examples
  - Updated video vignettes
- Open Label Pilot Feasibility Study
  - Yale, N=16
  - 3 to 6 y.o. with ASD and DBP
  - Continued support for feasibility and preliminary efficacy
Original Investigation

Effect of Parent Training vs Parent Education on Behavioral Problems in Children With Autism Spectrum Disorder
A Randomized Clinical Trial

Karen Bearss, PhD; Cynthia Johnson, PhD; Tristram Smith, PhD; Luc Lecavalier, PhD; Naomi Swiezy, PhD; Michael Aman, PhD; David B. McAdam, PhD; Eric Butter, PhD; Charmaine Stillitano, MSW; Noha Minshawi, PhD; Denis G. Sukhodolsky, PhD; Daniel W. Mruzek, PhD; Kylan Turner, PhD; Tiffany Neal, PhD; Victoria Hallett, PhD; James A. Mulick, PhD; Bryson Green, MS; Benjamin Handen, PhD; Yanhong Deng, MPH; James Dziura, PhD; Lawrence Scahill, MSN, PhD

RUBI: Study Objectives and Design

- RCT of PT versus PE in children with ASD and DBP
  - PT – behavioral intervention
  - PE – psychoeducational program

- 24 Week Trial with evaluations every 4 weeks
  - At Week 24, a blinded independent evaluator (IE) classified treatment response (+ or -)

- Follow-up at Week 36 and 48
  - All PT families
  - PE responders who don’t cross over to PT
12 Psychoeducation (PE) Sessions

- Autism Diagnosis
- Understanding Clinical Evaluations
- Developmental Issues
- Family / Sibling Issues
- Medical & Genetic Issues
- Choosing Effective Treatments
- Alternative Treatments
- Advocacy & Support Services
- Educational Planning
- Play Activities
- Evidence-based Treatment Options
- Treatment Planning

PLUS

- 1 Home Visit
WHY Parent Education

• Controls for time and attention
  • NIMH wanted a FULL control for attention
• Parents of newly diagnosed children
• Active Comparator would determine whether information alone would improve behavioral problems in the child
• DID NOT include any instruction on behavior management
INTERVENTION TARGETS

Parent Training

• Challenging behaviors
  • Noncompliance, tantrums, aggression, transitions/daily routines
• Increase Adaptive Skills
• Based on ABA
• Focus on antecedent (prevention) and consequence based strategies, skill building, generalization and maintenance

Parent Psychoeducation

• Expanding parent knowledge of ASD
• Topics include:
  • evaluation and diagnosis
  • developmental issues
  • educational planning
  • advocacy
  • Treatment options
**INTERVENTION PROGRAM STRUCTURE**

### Parent Training

- **Week 1-16**
  - 11 Core Sessions
  - 1 Home Visit
  - Up to 2 Optional Sessions
    - toileting, feeding, sleep, time out
- **Week 17-24**
  - 1 Home Visit
  - 2 Booster Sessions
  - Up to 6 dyad coaching sessions

### Parent Education

- **Week 1-24**
  - 12 Core Sessions
  - 1 Home Visit

[www.rubinetwork.org](http://www.rubinetwork.org)
Both PT and PE

• Delivered individually to each child’s parents
• 60- to 90-minute sessions in clinic
• Each session contains
  • In session activity sheets/video vignettes
  • Homework assignments (individually tailored)
Participants

• 3-0 to 6-11 years
• DSM-IV Diagnosis of ASD using gold standard tools
• ≥ 15 on the parent-rated Aberrant Behavior Checklist Irritability (ABC-I) subscale
• Stable medication/treatment plan
• Receptive language ≥ 18 months
Exclusion Criteria

• Receptive language < 18 months
• Not enrolled in a school
• Non-English-speaking caregiver
• Children whose parents participated in a structured parent training program in the past 2 years
Randomization and Blinding

• Randomization
  • 1:1 Ratio within site; stratified based on intensity of education
    • >15 hours/week of 1:1 or 1:2 specialized instruction

• Blinding
  • Parents and therapists aware of assigned treatment
  • Independent evaluators were blinded to assignment
    • Separate study binders for therapists and IE
    • Parents were instructed to avoid discussing treatment during IE assessments
Outcome Measures

• Primary outcomes:
  • Parent-rated Aberrant Behavior Checklist–Irritability (ABC-I)

• Secondary outcome measures:
  • Parent-rated Home Situations Questionnaire
  • Blinded independent evaluator ratings of Clinical Global Impressions
    • Much Improved/Very Much Improved = Treatment Responder
Parent Measures

- Parenting Stress Index (Short Form)
- Parent Sense of Competence
- Caregiver Strain Questionnaire
Flow of Patients through Trial

267 Children Screened for eligibility

- 87 Excluded
  - 75 Not Meeting Inclusion Criteria
  - 10 Refused
  - 2 Excluded - distance from clinic

180 Randomized

- 89 Randomly Assigned to Parent Training
  - 7 Exited
  - 3 Discontinued but completed assessments
  - 89 Included in Week 24 Analysis

- 91 Randomly Assigned to Parent Education
  - 6 Exited
  - 2 Discontinued but completed assessments
  - 91 Included in Week 24 Analysis
Highlights

• To Date, the LARGEST psychosocial RCT in ASD
  • 6 sites
  • 23 therapists
  • 180 children
Baseline Characteristics

88% boys
Age = 4.7 ±1.1 years
74% IQ ≥ 70
87% Caucasian, 14% Hispanic
69% Autistic Disorder
46% in general education class
20% on stable psychotropic medication
Intervention

Parent Training

- THERAPISTS
  - 97% therapist fidelity to treatment

- PARENTS
  - 89% retained in 24 week program
  - 92% of core sessions attended
  - 95% of parents would recommend

Parent Education

- THERAPISTS
  - 97% therapist fidelity to treatment

- PARENTS
  - 91% retained in 24 week program
  - 93% of core sessions attended
  - 86% of parents would recommend
48% decline in PT vs. 32% for PE
Effect size = 0.62

Parent-Rated ABC-Irritability Score

Week

No. of participants
Parent training  89  86  82  81  79  79  82
Parent education  91  85  84  83  79  83  85

Least Square Means from mixed effects linear models
Primary Outcomes at Week 24

• On the HSQ-ASD
  • 55% decline in PT vs. 34% for PE
  • Effect size = 0.45
69% in PT vs. 40% in PE

No. of participants

<table>
<thead>
<tr>
<th>Week</th>
<th>Parent training</th>
<th>Parent education</th>
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<tbody>
<tr>
<td>0</td>
<td>89</td>
<td>91</td>
</tr>
<tr>
<td>4</td>
<td>86</td>
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<td>82</td>
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<tr>
<td>24</td>
<td>80</td>
<td>85</td>
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</tbody>
</table>
Vineland Daily Living Skills: Standard Scores

Baseline

Week 24

Parent Training

Parent Education
Parenting Stress Index: Total

$p = .07$

$ES = .25$
Parenting Stress Index: Subscales

- **PSI: Difficult Child**
- **PSI: Parent Distress**
- **PSI: Dysfunctional Interaction**

$\ p < .01$

$\ ES = .44$
Parent Sense of Competence: Total

\[ p < .01 \]
\[ ES = .34 \]
Caregiver Strain: Total

\[ p < .01 \]

\[ ES = .50 \]
That’s Great

• But does it last......
PT Follow Up through Week 48

ABC-Irritability

<table>
<thead>
<tr>
<th>Week</th>
<th>Baseline</th>
<th>Week 24</th>
<th>Week 36</th>
<th>Week 48</th>
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<tbody>
<tr>
<td>Value</td>
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</table>

HSQ

<table>
<thead>
<tr>
<th>Week</th>
<th>Baseline</th>
<th>Week 24</th>
<th>Week 36</th>
<th>Week 48</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Discussion: Highlights

- Largest RCT of a behavioral intervention in ASD
- Parent Training > Parent Education
  - Parent ratings and blinded clinician
  - Maintained 24 weeks post-treatment
Discussion: Surprise

• Parent Education
  • Strong engagement and parent satisfaction
  • Larger than predicted improvement (40%)

Did providing parents with a better understanding of ASD plot an indirect pathway for improvement in disruptive behavior?
Strengths

- Random assignment to PT or an active comparator
- Blinded clinician assessment of outcome
- Long-term follow up
Limitations

- Reliance on ratings from parents, who were not blind to treatment assignment
  - CGI-I also relied on discussions with parents
- The results reflect benefits of Parent Training under optimal conditions
  - well-trained therapists/independent evaluators
  - a selected sample
Future Directions

- Moderators of success with PT AND PE
  - ADHD
- Research on Adaptations of PT
  - Group
  - Telehealth
- Dissemination/Implementation research
  - 6 sites + 23 therapists + 97% fidelity = high promise
  - Community practitioners
  - Train-the-trainer model
NEW DIRECTIONS IN PARENT TRAINING:

A PILOT STUDY OF PARENT TRAINING VIA TELEHEALTH FOR CHILDREN WITH ASD AND DISRUPTIVE BEHAVIOR
Current Pilot Study

• Will PT program work when delivered via telehealth
  • Open-label pilot study
  • Focus on **feasibility** of delivering the PT intervention via telehealth
    • Parent acceptance
    • Therapist fidelity
The Marcus Telehealth Suite in Action
Telehealth Participants

- Children with ASD + disruptive behavior and their parents/caregivers
- Living near one of 4 collaborating sites
  - part of the Georgia Partnership for Telehealth (GPT) network
PT Telehealth Sites
(2 Schools; 2 Medical Centers)

- Marcus Autism Center
- Telehealth Counties Included in Study:
  - Towns
  - Tift
  - Berrien
  - Ware
## Modifications to PT

<table>
<thead>
<tr>
<th>Research Protocol</th>
<th>Manual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expand age range up to 8</td>
<td>Remove home visits (HV)</td>
</tr>
<tr>
<td>Reduce ABC-I inclusion score from 15 to 10</td>
<td>Week 20 HV turned into 2(^{nd}) telephone booster call</td>
</tr>
<tr>
<td>Remove RL &lt; 18 mo. exclusion</td>
<td>Remove role-plays</td>
</tr>
<tr>
<td>Accept ASD community diagnosis</td>
<td></td>
</tr>
</tbody>
</table>
Study Enrollment

- 14 Families Enrolled
  - 1 Dropped out (between Baseline and 1st Session)
  - 13 Completed 24 Week Treatment
Baseline Child Demographics

- Mean Age = 5.8y (SD=1.7)
- Mean IQ = 69.4 (SD=17.6)*
- 64% Males
- 79% Caucasian, 21% African-American
- 15% Hispanic
- 86% ASD**
- 43% Regular Class, 50%; Special Ed; 7% Home School

*3 participants (21.4%) had a receptive language below 18 months
**2 participants did not meet ASD criteria on the ADOS but held a community diagnosis of ASD
Baseline Parent Demographics

- 36% Intact two-parent family
- Mean Mother Age = 38.3 (SD=8.3)
- Mean Father Age = 39.8 (SD=10.2)

**Family Income**
- 29% <$20,000
- 36% $20,000-$40,000
- 21% $40,000-$90,000
- 14% >$90,000

**Maternal Education**
- 14% HS/GED; 50% some college
- 29% college; 7% advanced degree
# Feasibility Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Benchmark</th>
<th>Outcome</th>
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</thead>
<tbody>
<tr>
<td><strong>Parent Acceptability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core Session Attendance</td>
<td>&gt;85%</td>
<td>91.6%   (141/156)</td>
</tr>
<tr>
<td>Adherence</td>
<td>&gt;80%</td>
<td>94.6%</td>
</tr>
<tr>
<td>Attrition</td>
<td>&lt;20%</td>
<td>7.1%    (1/14)</td>
</tr>
<tr>
<td>Satisfaction</td>
<td></td>
<td>100% recommend</td>
</tr>
<tr>
<td><strong>Therapist Fidelity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;90%</td>
<td>98.2%</td>
</tr>
<tr>
<td><strong>Outcome Data Collection</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;90%</td>
<td>92.9%</td>
</tr>
</tbody>
</table>
Conclusions

- Therapists reliably administered treatment via telehealth
- Parents found it an acceptable modality of treatment delivery.
- Low attrition and high parent satisfaction
Challenges

• Conducting research at clinical sites
  • Site buy-in/engagement
  • Registration of research patient visits at clinical site
  • Availability of rooms (office/conference rooms)
• Availability of sites
  • 2 schools; closed during summer/vacations
• Technical issues
Limitations

- Open label design
  - No control for time, attention
- Small sample size
  - Impacts the generalizability of findings
- Results under optimal conditions
  - Well-trained therapists
- Reliance on parent/therapist self-report
Training in RUBI

- 4-hour introductory workshop:
  Overview of the RUBI PT program

- 4-hour intensive workshop:
  Delivery of the RUBI manual

- Weekly consultation

- Certification:
  Delivery of RUBI PT with 2+ cases
  Fidelity review of 11 core sessions by a RUBI-certified trainer
  Mastery criteria = >80% fidelity for each session
Effect of Parent Training vs Parent Education on Behavioral Problems in Children With Autism Spectrum Disorder

A Randomized Clinical Trial

Parent Training for Disruptive Behaviors

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