Parent Training for Children with Autism Spectrum Disorder and Disruptive Behavior

Karen Bearss, PhD
Assistant Professor
Marcus Autism Center
Emory University
Research Units in Behavioral Intervention (RUBI) Autism Network

Lawrence Scahill, M.S.N., Ph.D.
Karen Bearss, Ph.D.
Emory University

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

Tristram Smith, Ph.D.
University of Rochester

Website:
www.rubinetwork.org

Luc Lecavalier, Ph.D.
Michael Aman, Ph.D.
The Ohio State University

Eric Butter, Ph.D.

Naomi Swiezy, Ph.D.
Noha Minshawi, Ph.D.
Indiana University

Denis Sukhodolsky, Ph.D.
Yale University
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- University of Rochester CTSA (UL1 TR00042)
Objectives

• Review the various forms of parent training for autism spectrum disorder (ASD)

• Describe the development and initial efficacy of a new parent training program for children with ASD and disruptive behaviors
  – Parent Training and Parent Education content
  – Therapist training procedures/qualifications

• Present findings from a large-scale randomized clinical trial of Parent Training vs. Parent Education

• Discuss future directions for the RUBI PT program
  – Continued research opportunities
  – Implications for service delivery
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’ = 45.3 million hits
    - (up from 9 million three years ago!!)
Added Challenges of Treatment

• Most EBTs are costly, time- and personnel-intensive
  – Challenge to wide-ranging dissemination and implementation
  – 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

• Emphasizes role of parents as the agent of change

• History as established EBT in child mental health
  – 30+ years of rigorous evaluation
  – Focus on externalizing behavior disorders
    – Kazdin Method of Parenting
    – Eyberg’s Parent-Child Interaction Therapy
    – Barkley’s Defiant Children
    – Webster-Stratton’s Incredible Years
Why Target Parents?

• High rate of disruptive behavior problems (≈50%)

• Adaptive skills deficits

• High parent stress/accommodation

• Parent inclusion in treatment is not common
Parents need specific instruction on techniques to:

Improve **core symptoms**

Reduce **challenging behaviors**, and

Improve **adaptive functioning** in their children
• Parent Training = Good

• What exactly is “Parent Training” in ASD
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)
Parent Training in Autism Spectrum Disorder
Bearss, Burrell, Stewart & Scahill, 2015

Parent Support
Knowledge-focused
Child is *Indirect* Beneficiary

- Care Coordination
- Psychoeducation

Parent-Mediated Intervention
Technique-focused
Child is *Direct* beneficiary

- Core Symptoms
  - Primary (JASPER)
  - Complementary (ESDM)
- Maladaptive Behaviors
  - Primary (RUBI-PT)
  - Complementary (Feeding Day Treatment)

Variations in format, location, intensity, duration, target age range
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

Study Objectives and Design

• Efficacy Study
  – PT versus PE in young children with ASD and DBP
    • PT – behavioral intervention
    • PE – psychoeducational program

• 24 Week Trial
  – At Week 24, a blinded independent evaluator (IE) classifies treatment response (+ or -)

• Follow-up at Week 36 and 48
  – All PT families
  – PEP responders who don’t cross over to PT
Intervention Targets

**Parent Training**
- Reduce challenging behaviors
  - Noncompliance, tantrums, aggression, transition difficulties
- Increase Adaptive Skills
- Based on ABA
- Focus on:
  - Antecedent and consequence based strategies
  - Skill building
  - Generalization & maintenance

**Parent Education**
- Expand caregiver knowledge of ASD
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 Principles</td>
<td>- Introduce overall treatment goals</td>
</tr>
<tr>
<td></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>
</tr>
<tr>
<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>
</tr>
<tr>
<td>Functional Communication Training</td>
<td>- Through systematic reinforcement, teach alternative communicative skills to replace problematic behaviors</td>
</tr>
<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>
</tr>
<tr>
<td>Generalization &amp; Maintenance</td>
<td>- Generate strategies to consolidate positive behavior changes and generalize newly learned skills</td>
</tr>
<tr>
<td>Optional Sessions</td>
<td>- Provide instructions on optional topics or review materials</td>
</tr>
<tr>
<td>Telephone Boosters</td>
<td>- Review implementation of intervention strategies</td>
</tr>
<tr>
<td></td>
<td>- Develop interventions for any newly emerging behavior concerns</td>
</tr>
</tbody>
</table>
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
GOAL 2  Review Behavior Support Plan

Now let's go through the Behavior Support Plan and see how things are going with the strategies we have implemented so far. Are there strategies that you have difficulty using consistently? What strategies seem to be effective in addressing the target behaviors? Are you ready to start using any additional strategies that we listed on the Behavior Support Plan? [Review specific strategies on the BSP that have not yet been put into action.]

GOAL 3  Introduce parent to the concept of planned ignoring

Today we're going to talk about consequences, which are the events that follow behaviors. A consequence that is enjoyable or reinforcing, such as praise or obtaining access to a preferred activity (e.g., computer time), will increase the target behavior. A consequence that is unpleasant, such as the child being sent to his room or losing computer time, will decrease the behavior. Behaviors that are ignored (e.g., parent ignores the child's whining) also will decrease the behavior because the child fails to get a reaction.

GOAL 4  Watch videos and identify consequences that reinforce inappropriate behaviors

Sometimes parents choose a consequence that stops their child's problematic behavior in the moment, but makes it worse in the long run. This is because the consequence inadvertently reinforces the child's inappropriate behavior. For example, a child may start yelling when his mother tells him it's time to take a bath. The mother may attempt to have the child follow through on this plan, but the child continues to protest and so the mother backs off and says the
PT 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: ____________________________________________________________

#4. Noah screams when he sees the playground on the way to the doctor's office.
   Antecedent: ____________________________________________________________
Use of Video Vignettes in PT

• Depicts common challenging behaviors
• Supplements direct instruction
• Demonstrates flawed parent management strategies where parent was to identify error
• Assesses parent understanding & acquisition of techniques
Personalization

A family centered, personalized intervention is achieved through flexible and creative components co-constructed by the clinician and parent:

– Homework selection
– Response to challenges and barriers

Choices in personalizing based upon:

– family need
– child age
– level of functioning
– target behaviors
Homework

• Homework is central to change
• Choice of homework comes from standard prompts but is personalized and crafted in partnership between the parent and clinician
• Parents encouraged to select homework assignment:
  – target
  – strategy
Homework Sheet

Behavior #1 ____________________________________________________________
Reinforcer: ____________________________________________________________
When during the day can you practice reinforcing this behavior? ____________

<table>
<thead>
<tr>
<th>Practice Opportunities</th>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

Behavior #2 ____________________________________________________________
Reinforcer: ____________________________________________________________
When during the day can you practice reinforcing this behavior? ____________

<table>
<thead>
<tr>
<th>Practice Opportunities</th>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

PT Homework Sheet Example
Behavior Support Plan (BSP): Process

• An organizing and living document
  – summarizes intervention strategies devised/implemented
  – 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
### TARGET PROBLEM BEHAVIORS:
**definition of the behaviors we want to go away**

<table>
<thead>
<tr>
<th>Tantrums</th>
<th>Yelling, screaming, sometimes with accompanying aggression or throwing/knocking over items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noncompliance</td>
<td>Refusal to comply with directions when asked to perform certain tasks (e.g., morning/evening routine) or nonpreferred demands (e.g., clean up).</td>
</tr>
</tbody>
</table>

### PERCEIVED FUNCTION(S):
**the cause of target behaviors**

<table>
<thead>
<tr>
<th>Tantrums</th>
<th>To get what he wants (access to inappropriate snack)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Escape when given a demand that he does not want to comply with</td>
</tr>
<tr>
<td></td>
<td>Escalation to get attention (during planned ignoring)</td>
</tr>
<tr>
<td>Noncompliance</td>
<td>To get out of an unwanted activity (e.g. not sitting at the dinner table; clean up; morning/evening routine demand)</td>
</tr>
</tbody>
</table>

### PREDICTORS/TRIGGERS FOR PROBLEM BEHAVIORS:
**Situations that may cause the behaviors to occur more frequently**

Transitions (from more to less preferred activities)

When limits are set (e.g., when told 'no')

When given a non-preferred demand

When Ben wants his mother's attention
## 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>
</tr>
</thead>
</table>
| **Timers**<br>(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/“First-Then”** | 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.” | |
| **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!
Therapist Training

• TRAINING
  – Master’s degree or higher
  – Didactic training
  – Video review of one case to fidelity (80%) by expert therapist

• ONGOING SUPERVISION
  – Weekly site supervision
  – Monthly cross-site teleconferences

• FIDELITY
  – Detailed therapist scripts for session
  – Fidelity checklists
    • Integrity check on a 10% random sample of sessions
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 by the clinician, 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>
</tr>
</thead>
<tbody>
<tr>
<td>1. Review homework assignment(s) from prior session.</td>
<td>0 1 2</td>
<td>N/A</td>
</tr>
<tr>
<td>2. Parent will demonstrate play session with child (optional).</td>
<td>0 1 2</td>
<td>N/A</td>
</tr>
<tr>
<td>3. Introduce parents to the concept of compliance.</td>
<td>0 1 2</td>
<td>N/A</td>
</tr>
<tr>
<td>4. Generate a list of Compliance Commands.</td>
<td>0 1 2</td>
<td>N/A</td>
</tr>
<tr>
<td>5. Generate a list of Noncompliance Commands.</td>
<td>0 1 2</td>
<td>N/A</td>
</tr>
<tr>
<td>6. Go over the steps for teaching compliance.</td>
<td>0 1 2</td>
<td>N/A</td>
</tr>
<tr>
<td>7. Problem solve if things go wrong.</td>
<td>0 1 2</td>
<td>N/A</td>
</tr>
<tr>
<td>8. Identify correct and incorrect use of compliance training via video tapes.</td>
<td>0 1 2</td>
<td>N/A</td>
</tr>
<tr>
<td>9. Role play correct use of compliance training.</td>
<td>0 1 2</td>
<td>N/A</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</td>
<td>N/A</td>
</tr>
<tr>
<td>11. Homework: Explain compliance training assignment.</td>
<td>0 1 2</td>
<td>N/A</td>
</tr>
</tbody>
</table>

A total score of 16 (or 18 including optional item) (80%) and higher reflects adequate treatment fidelity.

Total Score: ___
Control Condition: Parent Education (PE)

• 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
PT and PE Program Structure

**Parent Training**
- Week 1-16
  - 11 Core Sessions
  - 1 Home Visit
  - Up to 2 Optional Sessions
- 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
Both PT and PE

- Delivered individually to each caregiver
- 60- to 90-minute sessions in clinic
- Components of sessions:
  - Therapist script
    - Didactic Instruction
  - Activity sheets
  - Video vignettes
  - Role-plays between clinician and parent
  - Individually tailored homework assignments
Outcomes of the RUBI study:

Who did we treat and how did it work?
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
<table>
<thead>
<tr>
<th></th>
<th>PT</th>
<th>PE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Two parent family</strong></td>
<td>86.5</td>
<td>89.0</td>
</tr>
<tr>
<td><strong>Mother as Primary Informant</strong></td>
<td>88.7</td>
<td>95.6</td>
</tr>
<tr>
<td><strong>Maternal Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced Degree</td>
<td>32.6</td>
<td>25.3</td>
</tr>
<tr>
<td>College Degree</td>
<td>24.7</td>
<td>40.7</td>
</tr>
<tr>
<td>Some College</td>
<td>31.5</td>
<td>28.6</td>
</tr>
<tr>
<td>High School Graduate</td>
<td>10.1</td>
<td>5.5</td>
</tr>
<tr>
<td>Some High School</td>
<td>1.1</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Household Income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;$90,000</td>
<td>32.6</td>
<td>29.7</td>
</tr>
<tr>
<td>$60,000 to $90,000</td>
<td>16.9</td>
<td>23.1</td>
</tr>
<tr>
<td>$40,001 to $60,000</td>
<td>19.1</td>
<td>20.9</td>
</tr>
<tr>
<td>$20,001 to $40,000</td>
<td>21.3</td>
<td>18.7</td>
</tr>
<tr>
<td>&lt;$20,000</td>
<td>9.0</td>
<td>7.7</td>
</tr>
</tbody>
</table>
Exclusion Criteria

• Receptive language < 18 months
• Non-English-speaking caregiver
• Known serious medical condition or psychiatric disorder requiring alternative treatment
• Children whose parents participated in a structured parent training program in the past 2 years
Primary and Secondary Outcome Measures

• Parent-reported outcomes
  – Aberrant Behavior Checklist-Irritability Subscale
  – Home Situations Questionnaire-Autism Spectrum Disorder (HSQ-ASD)
  – Vineland

• BLINDED Independent Evaluator Ratings:
  – Parent Target Problems via parent interview
  – Improvement item of the Clinician Global Impressions
    • Much/Very Much Improved = Treatment Responder
Statistical Analyses

• ABC & HSQ
  – Outcome data presented as the Least Squares Means from mixed effects linear models (aka random regression models)
    • Accounts for missing data w/assumption data is missing at random
    • included fixed effects for treatment, time, site, education intensity and time-by-treatment interaction.
      – Site & intensity interactions were not significant
  – Effect size

• CGI
  – Chi square
Randomization and Blinding

• 1:1 ratio within site
  – stratified by educational intensity
    • >15 hours/week of 1:1 or 1:2 specialized instruction

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

- 88% boys
- mean age = 4.7 ±1.1 years
- 74% IQ ≥70
- 87% Caucasian
- 69% Autistic Disorder
- 46% in Regular 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

# of cases per therapist ranged from 1 to 21 cases ($x = 7.7$)
ABC-I LSM Outcomes

48% decline in PT vs. 32% for PE
Effect size = 0.62

Baseline | Week 4 | Week 8 | Week 12 | Week 16 | Week 20 | Week 24
---|---|---|---|---|---|---
P <0.0001

Parent Training | Parent Education
HSQ at Week 24

• On the HSQ-ASD
  – 55% decline in PT vs. 34% for PE
  – Effect size = 0.45
CGI Positive Response

69% in PT vs. 40% in PE

Week 24
Vineland Daily Living Skills: Standard Scores

Gains higher for children with IQ>70.  IQ<70=maintenance of skills
• That’s great…. but does it last???
PT Follow Up through Week 48

ABC-Irritability

<table>
<thead>
<tr>
<th>Week</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>23</td>
</tr>
<tr>
<td>Week 24</td>
<td>16</td>
</tr>
<tr>
<td>Week 36</td>
<td>18</td>
</tr>
<tr>
<td>Week 48</td>
<td>19</td>
</tr>
</tbody>
</table>

HSQ

<table>
<thead>
<tr>
<th>Week</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>4.3</td>
</tr>
<tr>
<td>Week 24</td>
<td>2.5</td>
</tr>
<tr>
<td>Week 36</td>
<td>2.8</td>
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<tr>
<td>Week 48</td>
<td>2.0</td>
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PT Positive Response
PT Negative Response
Discussion - Highlights

• Largest psychosocial RCT in ASD

• Parent Training > Parent Education on parent ratings of disruptive and noncompliant behavior and a measure of overall improvement rated by a blinded clinician

• Gains maintained 24 weeks post-treatment
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
Discussion: Surprise

• Parent Education
  – Strong engagement and parent satisfaction
  – Larger than predicted improvement (39.6% CGI of 1 or 2)
  – Did providing parents with a better understanding of ASD plot an indirect pathway for improvement in disruptive behavior?
The RUBI Autism Network Parent Training Program: Where Do We Go From Here?
Future Research Directions

• ID child/family characteristics that predict success with PT AND PE

• Wider implementation of PT in clinical and educational settings.
  – Increase access to more individuals
    • Group
    • Telehealth
    • Community implementation
Where does RUBI PT fit in practice?

In general clinical practice

– 6 sites, 23 therapists, 97% fidelity

– Community-viable model of care
  • Role of therapist script
  • Billing codes in place (908 - -)
  • Low intensity training = great training opportunity
  • Low overhead for implementation