

Wednesday, 3:00 – 4:30, F4

## **The MSU Autism Research Lab**

**Karis Casagrande**

**Katherine Pickard**

Objectives:

Identify effective methods for the practical application of concepts related to improving the delivery of services for persons with developmental disabilities at the level of the state.

Notes:

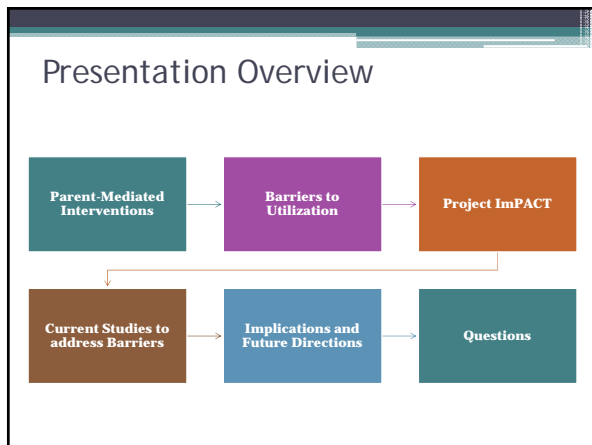
# The MSU Autism Research Lab

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We are interested in understanding the **social communication deficits** seen in children with autism spectrum disorders (ASD) and the **development and evaluation of interventions** that can improve these skills.



## What is parent-mediated intervention (PMI)?

- Systematic instruction** in strategies to help parents accomplish specific goals or outcomes for their child

Behavior Management

Parent-Child Interaction


Developmental Skills

- PMI is a *primary* intervention strategy

## What are the outcomes of PMI in ASD?

Parent Outcomes

Child Outcomes



**Evidence Based Practice**  
 (NRC, NPDC-ASD, NSP)

Intervention fidelity

Compliance

Parent self-efficacy

Child problems

## How is PMI used in the community?

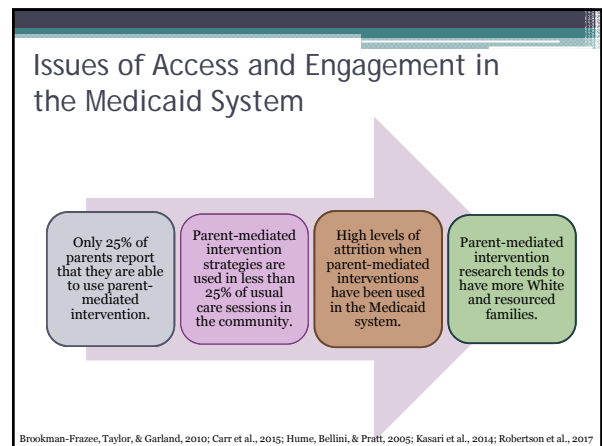
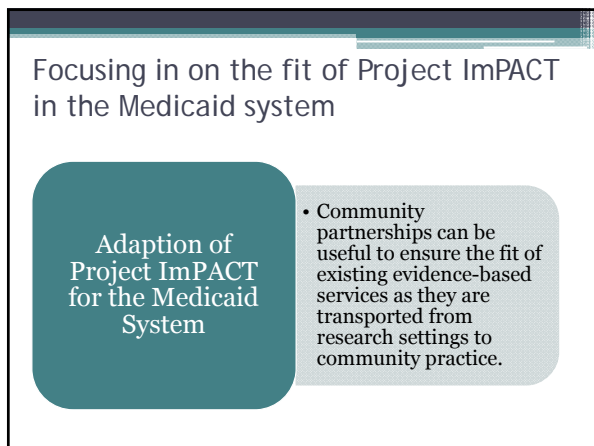
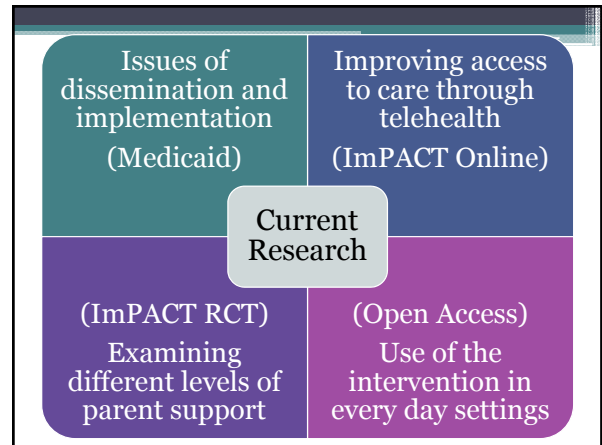
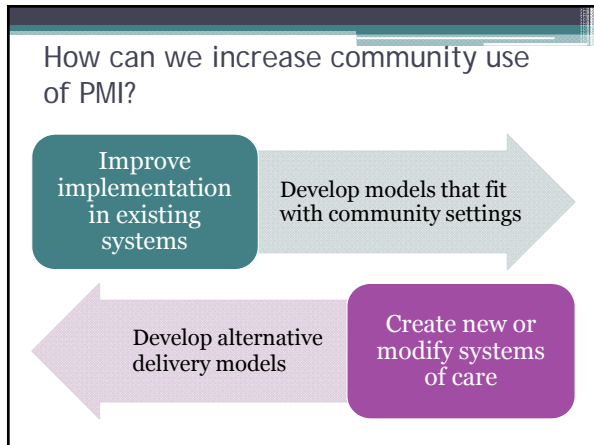
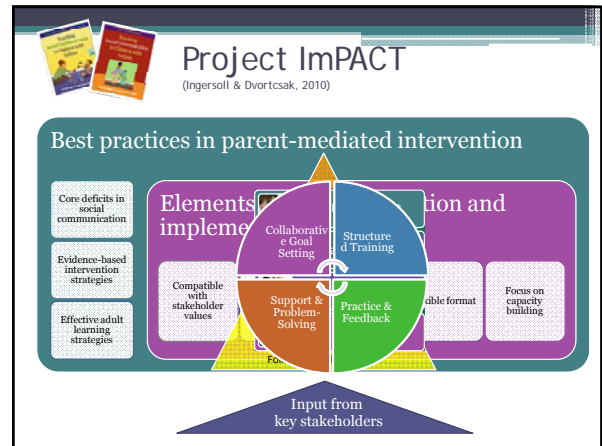
Highly under-utilized in community settings

25% of providers reported offering formal parent training

8% of families of children ≤4 reported using formal parent training

ASD parents reported parent training as a unmet service need

(Campbell & Halbert, 2002; Hume, Bellini, & Pratt, 2005; Mahoney & Filer, 2006; Stahmer, 2007; Pickard & Ingersoll, 2016; Thomas et al., 2007)




## Improving Health Services through Community Partnerships

- Health interventions will have the greatest impact when they are broadly used by community members.
- Definition: formal collaborative relationships between researchers and community members, in which members work together to reach a common. (Brookman-Frazee et al., 2012; Brookman-Frazee et al., 2015)



## Striking the Balance Between Fidelity and Fit

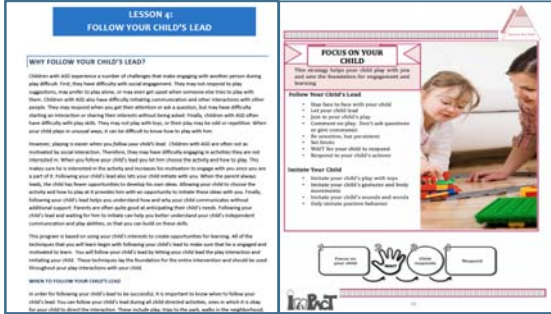


(Damschroder et al., 2009; Eccles & Mittman, 2006; Nilsen, 2015)

## Our Community Participants

<b>PARENTS</b> (N=16; 3 Focus Groups) 88.50% (14) Female	<b>PROVIDERS</b> (N=16; 3 Focus Groups) 92.50% (15) Female
<ul style="list-style-type: none"> <li>12.50% (2) White/European American</li> <li>62.50% (10) Black/African American</li> <li>6.30% (1) Middle Eastern</li> <li>18.80% (3) Biracial/Other</li> </ul>	<ul style="list-style-type: none"> <li>43.75% (7) White/Eur. American</li> <li>43.75% (7) Black/African American</li> <li>6.25% (1) Middle Eastern</li> <li>6.25% (1) Biracial/Other</li> </ul>
<ul style="list-style-type: none"> <li>12.50% (2) &lt; High School degree</li> <li>56.30% (9) High School Degree</li> <li>18.80% (3) Associates Degree</li> <li>12.50% (2) 4-Year Bachelor's</li> </ul>	<ul style="list-style-type: none"> <li>56.25% (3) High School Degree</li> <li>25.00% (4) Bachelor's Degree</li> <li>56.25% (9) Graduate Degree</li> </ul>
<ul style="list-style-type: none"> <li>37.50% (6) &lt;\$10,000</li> <li>6.30% (1): \$10,001-15,000</li> <li>31.30% (5) \$15,001-\$20,000</li> <li>25.00% (4) \$20,001-\$30,000</li> </ul>	<ul style="list-style-type: none"> <li>25.00% (4) Behavior Technician</li> <li>12.50% (2) Family Supports Coordinator</li> <li>6.25% (1) Social Worker</li> <li>12.50% (2) BCBA</li> <li>37.50% (6) Early Childhood Therapist</li> <li>6.25% (1) Clinic Director</li> </ul>


## The Balance Between Fidelity and Fit



## Testing out the Adaptations

- Tried adapted program in Medicaid system
- Collected data on feasibility and acceptability
- Use this to collect continued information to improve program before piloting on a larger scale

## Project IMPACT Group Logistics



**12-session program:**

- Group meets every other week for 2 hours (didactics)
- 1-hour individual coaching in the off weeks, all provided in-home

**Group Supports**

- Childcare and transportation provided
- Central location for groups
- All other adaptations implemented

(Ingersoll & Dvortcsak, 2010)

### Participating Families

Family	Family Size	Family Structure	Education	Race/Ethnicity	Attendance (% sessions)
#1	3	Single mother + grandparent	High school	Black/African American	83.33%
#2	5	Married	Associates Degree	White	91.67%
#3	6	Married, foster parents	Associates Degree	Black/African American	91.67%
#4	4	Single, living with partner	High school	White	75%

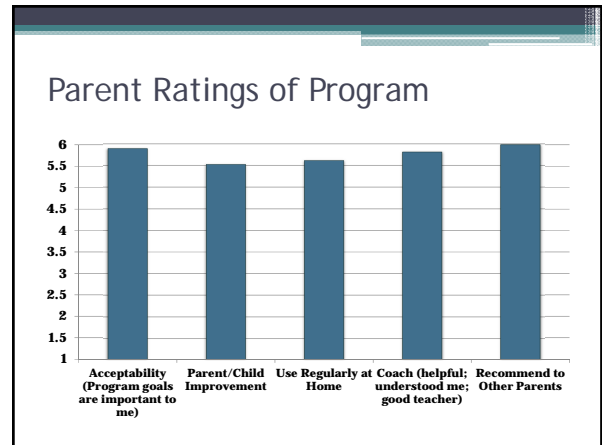
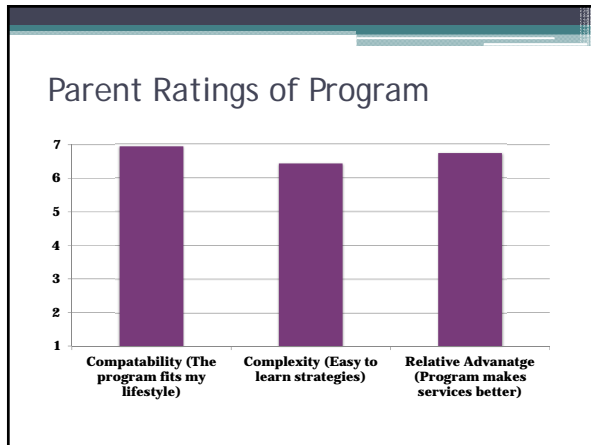
### Preliminary results

**Did the parents learn the strategies?**

Fidelity scores: 1.5 → 3.75 (on a scale of 1-5)  
 Family Empowerment: Small changes on the *Family Empowerment Scale*.  
 Open Ended Feedback:  
 "This program really gives you the tools to help your child, it should be offered to all parents!"  
 "It was great to learn really small changes that make a big difference with your child."

**Did the children appear to benefit from their parents' use of the strategies?**

Social Communication Checklist:  
 - Across families, biggest changes reported in social engagement (i.e. eye contact, sharing of emotions, length of play with parent)  
 - Changes in 3 families in complexity of play.



### Implications


- Community partnerships can be used to enhance collaboration across research and community settings.
- Doing so increases the compatibility and accessibility of best practice health services in community settings.

### Develop Alternative Delivery Models


Using **telehealth** to increase access to parent-mediated intervention for young children with autism

- Can surmount many family-level barriers to access
- Potential to increase access in underserved communities including low resourced countries

## What is telehealth?



- Delivery of health information over the internet
- Can surmount many family-level barriers to access
- Potential to increase access in underserved communities including low resourced countries



## Two telehealth models



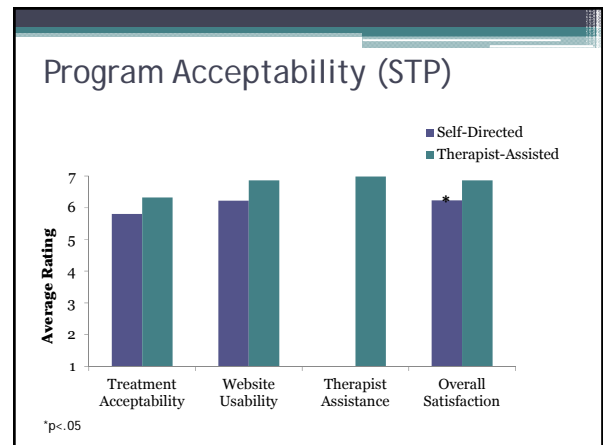
- Online Tutorial
  - 12 lessons - self-paced
  - Monthly check-in from research staff
- Remote Coaching
  - 12 lessons - twice weekly
  - Parent-only didactics and parent-child coaching



## Program Engagement

	Overall M (SD)	Self-Directed M (SD)	Therapist-Assisted M (SD)	Test Statistic
Number of logins	46.85 (22.30)	29.54 (13.76)	62.93 (15.55)	34.68**
Total hours on site	16.08 (8.64)	11.78 (6.71)	20.07 (8.50)	7.81*
% Participants Completing Program	85.00%	69.00%	100.00%	5.06*

Ingersoll & Berger (2015), Journal of Medical Internet Research



## Semi-Structured Interviews (n=10)

"And I mean it is that foundation you know. Like okay let's get some intervention, and from a family stand-point, I felt a little helpless. Like what do I do? And you know of course they have intervention outside of the home, going to this therapist and that, but when they come home a parent can be like I don't have the knowledge. So, having something like this, I feel like I have power to really help my kid now. And that transition, you know that cycle doesn't break when he steps in the house. You can continue to build upon what he's learning."

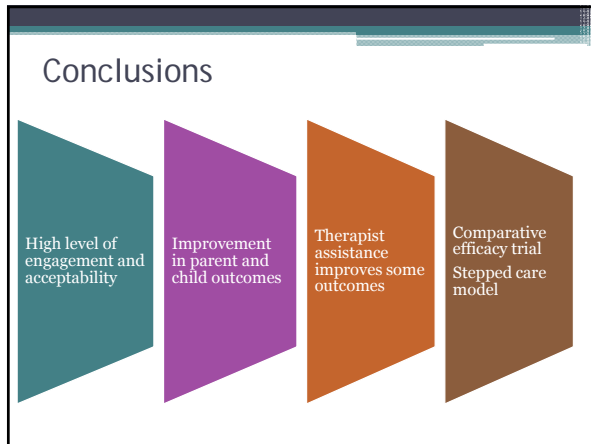
- Acceptability of intervention techniques
- Ease of learning ImPACT Online
- Relative advantage of flexible access
- Increased parent empowerment
- Gains in child social communication
- Time and technology barriers
- Make program available at time of diagnosis

Pickard, Wainer, Bailey, & Ingersoll (2016), Autism

## Parent and Child Outcomes

- Parent Learning
  - Increased intervention knowledge (Quiz)
  - Increased intervention fidelity (PCI)\*
- Parent Well-Being
  - Decreased parenting stress (PSI)
  - Increased self-efficacy (PSOC)
  - Increased positive perceptions (FIQ)\*
- Child Communication
  - Increased communication skills (VABS)
  - Increased expressive vocabulary (MCDI)
  - Increased language use (PCI)\*
- Child Socialization
  - Increased socialization skills (VABS)\*\*

\*Greater improvements in therapist assisted group  
\*\*Improvement only in the therapist assisted group



### Different Levels of Support

Exploring a stepped model of care

- Different levels of support may best support different types of families
- A stepped model of care can help to increase the reach of interventions

### Different levels of support

- Families are *randomly* assigned to participate in **one** of three ways:
  - Access to an online parent training program**
    - Two 30-minute remote coaching sessions per week
  - Access to an online parent training program**
    - Self-directed, with monthly check-in phone calls
  - Access to an online resource list**
    - Self-directed, with monthly check-in phone calls
    - These families will receive access to the online parent training program after the study period ends

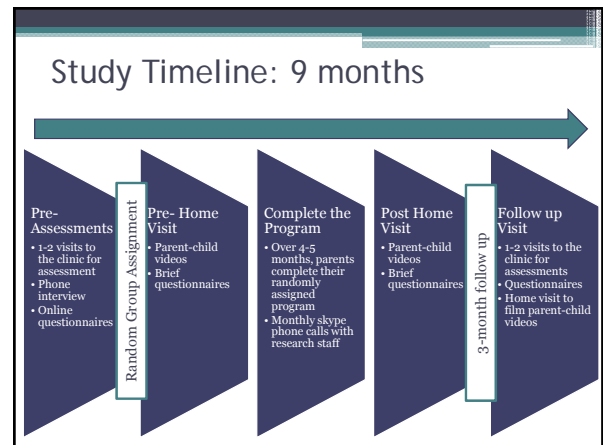
Program Engagement

Program Acceptability

Parent Learning

Parent Well-Being

Child Social Communication



### Current Project Status

#### Recruitment

Child Eligibility	Benefits to Families	Contact Information
<ul style="list-style-type: none"> <li>Have a diagnosis of ASD</li> <li>Be between 18 and 96 months of age</li> <li>Meet other inclusion criteria</li> </ul>	<ul style="list-style-type: none"> <li>Receive \$25 during each assessment (\$75 total)</li> <li>Receive initial and follow-up report of child's skills</li> <li>Be provided with all technology if needed at no cost</li> </ul>	<ul style="list-style-type: none"> <li>MSU Autism Lab Project Coordinator: Nikki Bonter</li> <li>Email: bonterni@msu.edu</li> <li>Phone: 517-432-8031</li> </ul>

### Use of low-intensity interventions

Understand how parents utilize self-directed interventions in the community

- Can surmount many family-level barriers to access
- “Low-intensity interventions that are less efficacious but that can be delivered to large numbers of people may have a more pervasive impact.” Glasgow, Vogt, & Boles (1999)



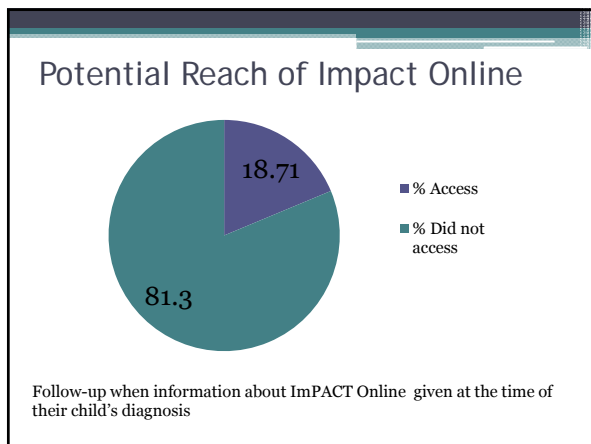
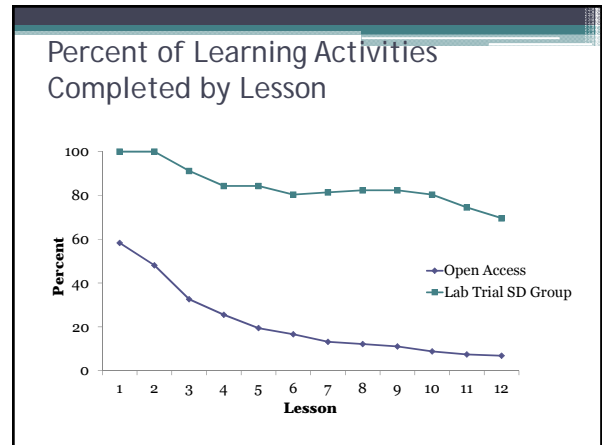
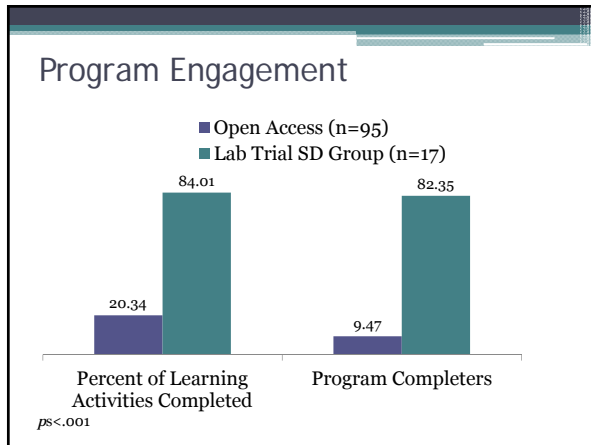
### Open Access Trial

- Recruitment**
  - Flyer at diagnostic feedback session
  - Link on Statewide ASD website
  - Word of mouth / Web Search
- Dissemination Potential**
  - Demographics
  - Program Engagement
  - Reach
- Effectiveness**
  - Parent Learning

Shannon, Berger, Holtz, & Ingersoll (2016, May), IMFAR

### User Demographics

	Open Access (n=113)	Lab Trial (n=51)	p-value
<b>Parent Characteristics</b>			
Gender (% female)	88%	85%	.64
Education Level (% college degree)	54%	58%	.61
Marital Status (% married)	78%	81%	.83
Employment Status (% employed)	65%	58%	.49
Mean Computer Fluency (CEWFS)	37.1	36.7	.14
<b>Child Characteristics</b>			
Gender (% male)	77%	83%	.39
Race/Ethnicity (% minority)	24%	39%	.08
Mean Chronological Age (months)	43.33	59.84	<.001*



### Conclusions

- Demographics similar to lab-based trial
- Engagement significantly lower  
Limited reach  
Similar effect on parent learning
- Methods needed to enhance engagement in real world settings



## Final Thoughts

Parent-mediated intervention is a key component of early intervention

There are a number of barriers to delivery of parent-mediated interventions

Community partnerships can be used to enhance collaboration across research and community settings

Barriers can be addressed through flexible implementation and delivery models

## Project ImPACT Training Workshop

- **2-day Workshop** in East Lansing, MI on **May 16-17**
  - Provides initial preparation to implement Project ImPACT with children and their caregivers.
  - Must complete a 6-hour, Project ImPACT Online Tutorial.
- The cost of the workshop is **\$525 per person**
  - Includes cost of the Online Tutorial and the Manuals
  - Breakfast and lunch will be provided
  - CEUs for ASHA, State Board, and Social Work available.
- Attendees will be provided with a certificate of completion.

## Questions?

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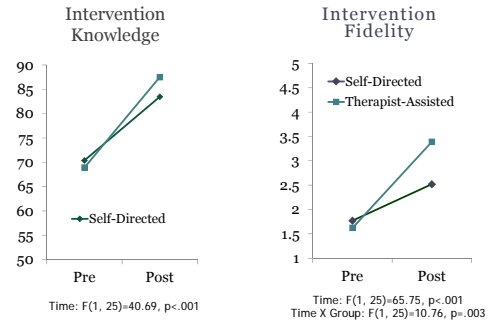
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## ImPACT Online Data

### Participant Demographics

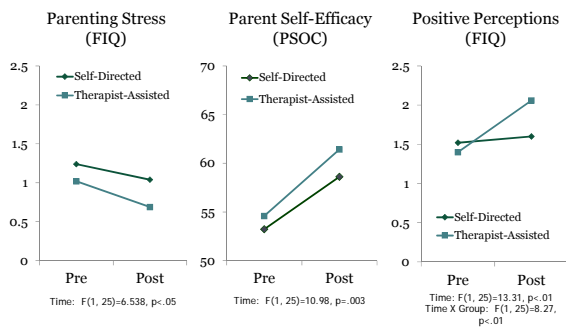
	Overall	Group	
	(N=27)	Self-Directed (n=13)	Therapist-Assisted (n=14)
<b>Parent Characteristics</b>			
Gender (% female)	96%	92%	100%
Education Level (% college degree)	56%	46%	64%
Marital Status (% married)	81%	92%	71%
Employment Status (% employed)	59%	54%	64%
Residence in Underserved Area	70%	77%	64%
<b>Child Characteristics</b>			
Gender (% male)	70%	61%	79%
Race/Ethnicity (% Minority)	22%	8%	36%
Mean Chronological Age in Mos. (SD)	43.26 (12.58)	46.08 (13.18)	41.57 (12.24)
Mean Nonverbal Mental Age in Mos. (SD)	24.83 (11.57)	25.42 (13.92)	24.29 (9.38)
Mean Verbal Mental Age in Mos. (SD)	20.44 (10.11)	19.15 (9.63)	21.64 (10.74)
Mean Non-Study Intervention Hrs / Wk (SD)	12.98 (10.15)	13.62 (10.96)	12.38 (9.70)

### Parent Learning

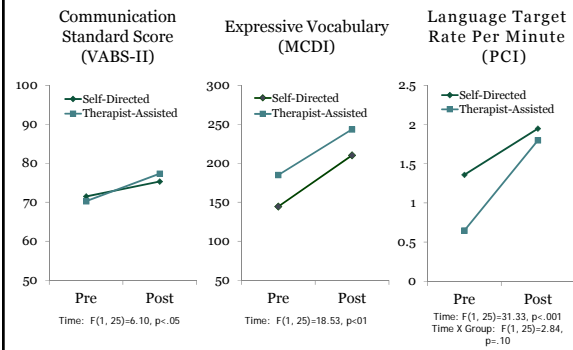


Ingersoll et al. (2016). *Journal of Autism and Developmental Disorders*

### Parent Well-being



### Child Outcomes



### Child Social Skills

