Targeted treatments for core deficits in children with Autism Spectrum Disorder

Connie Kasari, PhD
UCLA Center for Autism Research and Treatment
Disclosures

Research Support: Merck Foundation

Research Contract (Spouse): Psyadon
Honoraria (Spouse): Alcobra Pharma
Consultant Income (Spouse): Think Now, Inc
Increasing number of ASD interventions
Current Evidence Base

- ABA based early interventions range from traditional Discrete Trials to Naturalistic, developmental

- No comparative tests of treatment approach

- Limited evidence of active ingredients (dose, approach, agent of change)

- Best evidence for modular treatments focusing on core impairments of social communication
Introduction

1

Core targets of treatment

2

End
Targets for Interventions

Social communication

Pointing to Share

Engagement

Conversations
Targets for Interventions

Behavioral challenges

Rigidity & Refusal
Sensory issues
Repetitive behaviors
Why is it important to focus on these core impairments?
– **Language** by age 5-6 best social outcomes
  – (Lord, 2000; Rutter, 1978)

– **Joint attention** predicts to language
  – (Kasari et al, 2008; Kasari et al, 2012; Mundy et al., 1986; Mundy, Sigman, & Kasari, 1990)

– **Play skills** associated with cognitive abilities
  – (Kasari et al, 2012)
Evidence *suggests* that approach matters for improvements in joint attention, play, engagement

Especially for spontaneous, child initiations
Differences in approach to teaching play

ABA-traditional
DTT teaching symbolic play

NDBI
JASPER
Introduction

1

Core targets of treatment

2

Evidence

3

End
Two Examples

1. Minimally verbal children
2. Very verbal, able children
Minimally Verbal Children

25% to 50% will not develop functional language by age 10-13

- (Lord & Schopler, 1989; Tager-Flusberg & Kasari, 2014)
Children who cannot communicate often have challenging behaviors

Important to give children access to communication!
Minimally verbal research study

- 3 sites, 61 children
- 5-8 years old
- <20 functional words
- NV IQ 38-140
- JASPER+EMT
- 24 sessions, test response
- 24 more sessions + parent

Kasari, Kaiser, Goods, Nietfeld, Mathy, Landa, Murphy, Almirall, 2014, JAACAP
Evidence

Socially Communicative Utterances

Socially communicative utterances

![Graph showing the trend of socially communicative utterances over weeks]

- **JAE+EMT+AAC**
- **JAE+EMT**

**Y-axis:** Total Socially Communicative Utterances

**X-axis:** Week

From 0 to 36 weeks, the graph shows a trend of increasing socially communicative utterances for both conditions, with a slight decrease towards the end.
Evidence

Novel words and comments

Kasari, Kaiser, Goods, Neitfeld, Mathy, Landa, Murphy, Almirall, JAACAP, 2014
AAC can work for some younger children in context of intervention

3 year old preverbal, 0 words

Uses 2 words together on iPad
Peer interactions
FRIENDSHIPS SURVEY

What is your name?  Nahomy  Date: 10/14/09
School Name: ____________________________
Age: __________

Are you a BOY or a GIRL?  (circle one)  
X  GIRL  

1. Are there any kids in your class that you like to hang out with?  
Who are they?  (Use first names only; plus last initial if needed)

My best FRIEND is Faith.  Hanna and Karolina.

2. Circle the names of the 3 kids you most like to hang out with:

Faith  Magali  Hanna

3. Put a STAR * next to the name of the ONE kid you most like to hang out with.

4. How often do you play with the friend with the STAR * next to their name?  (circle one)  
   almost everyday  sometimes  only once in a while

5. Are there any kids in your class that you don’t like to hang out with?  
Who are they?  (Use first names only; plus last initial if needed)

Citali  Magali  Srgol

6. What is your favorite game to play at school?  Who do you play this game with?  
   Hid-and-seek
   Magali

7. Are there kids in your class who like to hang out together?  
   Who are they?

Remember to think about Boys and Girls. Remember to put yourself if you hang out with a group.

Write the kids names and then draw a CIRCLE around each group:

Faith  Magali  Hanna

Melven  Max  Degen

Faith  Angolena
Discovering the social connections at school (a measure of social networks)

Based on work of Cairns & Cairns
Connection to Social Groups at School—few children with ASD are isolated!

Most are peripheral to the main social groups, just loosely attached to others

Some are popular

Chamberlain, Kasari, Rotheram-Fuller, 2007, JADD; Kasari et al, 2011, JADD; Rotheram-Fuller et al, 2010, JCPP
How to intervene?

60 HFA children, aged first thru 5th grade

30 different schools

Randomized children to a peer mediated or child assisted intervention, or to both or neither

We intervened for 12 sessions, twice each week for six weeks

Making the connection: randomized controlled trial of social skills at school for children with autism spectrum disorders

Connie Kasari, Erin Rotheram-Puller, Jill Locke, and Amanda Gulsrud

Background: This study compared two interventions for improving the social skills of high functioning children with autism spectrum disorders in general education classrooms. One intervention involved a peer-mediated approach (PEER) and the other involved a child-assisted approach (CHILD). Method: The two interventions were crossed in a 2 x 2 factorial design yielding control, PEER, CHILD, and both PEER and CHILD conditions. Sixty children participated from 56 classrooms in 30 schools. Interventions involved 12 sessions over 6 weeks, with a 3-month follow-up. Outcome measures included self, peer and teacher reports of social skills and independent weekly observations of children on school playground over the course of the intervention. Results: Significant improvements were found in social network salience, number of friendship nominations, teacher report of social skills in the classroom, and decreased isolation on the playground for children who received PEER interventions. Changes obtained at the end of the treatment persisted to the 3-month follow-up. Conclusions: These data suggest that significant improvements can be made in peer social connections for children with autism spectrum disorders in general education classrooms with a brief intervention, and that these gains persist over time. Keywords: Social skills, autism spectrum disorders, peer relationships, sociometrics, school.
Peer Related School Intervention Study
UCLA Peer Intervention Study in Schools

Child Assisted Approach

Peer Mediated Approach

Kasari, Rotheram-Fuller, Locke, & Gulsrud, 2012, JCPP
Modular, individualized approach

- **Child Assisted**
- Observed child on playground, obtained teacher reports, peer networks, self reports
- Determine top 3 problems for child engaging with peers
- Worked on 1 at a time
Modular, individualized approach

• **Peer Mediated**
  • 3 peers willing from the class
  • Had peers identify some children who had difficulty on playground
  • Had peers generate ideas to help engage all children on the playground
What we learned

• Intervening with the peers made the most difference in engaging the children with ASD
Social Network Centrality
Second Grade - T1
Isolates: A1, C3, E5***

Second Grade - T2
Isolates: L12, M13, N14, S19

Second Grade - T3
We also found that engagement during recess did not improve.

This was true even for children who reported a reciprocal friend in the class.
Recess may be important context for intervention

• An issue for children with ASD may be in the transition to the playground
• Playgrounds are noisy, busy and may be difficult for children with ASD in general
• Teachers need strategies for connecting children as they leave the classroom
Materials for Teachers/Playground Assistants
Specific playground intervention: Remaking Recess

Facilitating Peer Conversations

Conversations with Peers - Helps children have conversations with each other (defined as four or more back-and-forth exchanges between children).

Conversation Starters - strategies that assist children in initiating and maintaining conversations and improving reciprocal interactions with peers.

If the target child has difficulty engaging in conversations with peers during lunch, provide fun topics to talk about.

There are many ways to stimulate conversations between children at school. Remaking Recess focuses on using Social Menus, but other methods can also stimulate conversation between children (e.g., a Topic Box, Picture Prompts, or Interesting Objects).

- During times when children have opportunities to converse give them direct instructions to talk to each other. Example: “Now is the time for you to talk to each other.”
- Offer social menus to all children in the area. Do not single out the target child by approaching them only. Instead, target the cluster of peers they are closest to by offering the social menus to the group.
- Give the menus to the children with the instructions “Here are some fun things for you and your friends to talk about.”
- More away so that the children aren’t tempted to talk to you instead of each other.
- Observe the children from a distance. If needed, move back and prompt them to ask each other the questions on the menu. Praise children who are having good conversations.

Initiating and Responding

<table>
<thead>
<tr>
<th>Helping the Target Child Initiate and Respond to Peers</th>
<th>Helping Peers Initiate and Respond to the Target Child</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remind the Target Child To:</td>
<td>Remind Peers To:</td>
</tr>
<tr>
<td>• Pay attention to who he/she is talking to.</td>
<td>• Be patient—give the target child a few moments to respond. Sometimes it takes people a little bit longer.</td>
</tr>
<tr>
<td>• Listen before trying to join an existing conversation.</td>
<td>• Be persistent—politely try again if he/she does not respond.</td>
</tr>
<tr>
<td>• Stay near the person he/she is talking to—not too close and not too far. Be sure that the target child does NOT walk away.</td>
<td>• Share a topic of mutual interest (talk about something they both like).</td>
</tr>
<tr>
<td>• Use an appropriate tone of voice—not too loud and not too soft.</td>
<td>• Be aware of the “right” time to approach the target child (e.g., when he/she is not already engaged).</td>
</tr>
<tr>
<td>• Direct their initiations to the peer by grabbing their attention (e.g., use a name—e.g., Hey John!—or lightly tap the child on the shoulder if he is not facing them).</td>
<td>• Make sure to trade information—take turns in the conversation.</td>
</tr>
<tr>
<td>• Use facial expressions that show how they are feeling—if you’re happy, smile!</td>
<td></td>
</tr>
</tbody>
</table>
Paraprofessionals can improve child engagement on the playground (6 weeks)

(Kretzmann, Shih & Kasari, 2014)
Conclusion

• Targeted treatments are effective for improving core deficits in ASD
• These need to be selected based on individual child characteristics and contexts
• Evidence is strong for modular social-communication interventions in real world settings
• One size treatment does not fit all; modularized interventions most effective and sustainable