The Society for Clinical Child and Adolescent Psychology (SCCAP): Initiative for Dissemination of Evidence-based Treatments for Childhood and Adolescent Mental Health Problems

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Workshop
JASPER: Targeted Treatment on Joint Attention, Symbolic Play, and Engagement Regulation for Children with Autism

Connie Kasari, Ph.D.
Professor of Education, Psychology and Psychiatry
Center for Autism Research & Treatment, UCLA Semel Institute
Part 1 of 8
Main points

• Engagement as an Intervention Target
  ▫ What are the active ingredients of ‘engagement’

• Intervening on engagement
  ▫ Important considerations
  ▫ Example studies establishing the research base
Engagement as Critical Intervention Target

• Early signs, consistent across age.....
  ▫ Engagement with others.....family members, peers
• What are behavioral signs of engagement?
  ▫ Shared attention and affect
  ▫ Joint attention
  ▫ Social play with others
  ▫ Conversation
Joint attention specific deficit for children with autism

Experimental Comparative Studies

• Matched samples of ASD, DD, Typical (MA or Language age)
  ▫ ASD specifically deficient in JA, particularly IJA
  ▫ Joint Attention correctly identifies 90% of children with ASD
  ▫ Joint attention skills predict to concurrent and later language development (up to 16 years later)

Difference between SKILLS and STATES

• Initial focus on skills (pointing, showing, coordinated gaze)
• Skills occur during ENGAGEMENT with others
• States of engagement matter to skill development
  ▫ Object and person engaged
  ▫ **Supported joint (important to language learning in typical infants)**
  ▫ Coordinated joint
Targeted Intervention Approach to Address Problems of Engagement

• To affect engagement, intervention needs to be targeted, dense and long term
• The targets of intervention change with development, and with amount of impairment in individual children
• To understand change in engagement (and the relevance to children’s lives) OUTCOME measures of intervention must be meaningful
  ▫ EIBI outcomes are IQ
  ▫ High IQ can still be socially impaired
EXAMPLE
Comparative Efficacy Study: Focus on Core Deficits

Joint attention initiations

Point to share

Show

Symbolic Play
Evidence of improving JA and Play with effects on Engagement

- Kasari, Freeman, Paparella, 2006, JCPP
- Kasari, Paparella, Freeman, Jahromi, 2008, JCCP
- RCT of 58 children, 3-4 years old
- Follow up 5 years later
- Kasari, Gulsrud, Freeman, Paparella, Hellemann, JAACAP, in press

Joint Attention Intervention

All children receiving same 30 hrs per week of ABA

- Therapist led intervention
- 5-6 weeks daily for 30 minutes

Combined developmental and behavioral approach
- PRT....No
- Floortime.....No
- 😊....combination targeted

Play Intervention
Change in proximal outcomes: Joint attention and play

Joint Attention Initiations

Play Level
Why are these targets important? They predict to distal language outcomes.

Follow up 1 year later: JA and SP groups better language.

Follow up for Low Language Group: JA group best outcomes.

Kasari, Paparella, Freeman & Jahromi, 2008, JCCP
Does Approach Matter?

- Children in the study received both ABA discrete trials at table and developmental play therapy on the floor

- Did children learn joint attention or play skills faster using one approach or another?

  - Criteria for Performance Mastery
    - Focus on diversity not just frequency
    - More than one type of an unprompted initiation
    - 2 consecutive days

  - Days to Performance Mastery
    - Number of days to reach performance mastery criteria
Results indicate that children generally reach performance mastery criteria in the discrete trial setting before reaching criteria in the naturalistic floor setting ($Z = -2.18, p = 0.03$, two-tailed)

Wong, Kasari, Freeman & Paparella 2007
Results: Approach by Skill

- General results driven by play group: Play group faster in learning via discrete trials.
- For children learning joint attention skills--approach makes less difference: These children reach performance mastery criteria in both settings at about the same time

Wong, Kasari, Freeman & Paparella, 2007
Important points....

- Goal selected for each child was developmentally individualized
- Goals selected from 3 assessments---
  - Structured Play Assessment (SPA)
  - Early Social Communication Scales (ESCS)
  - Mother Child Interaction (and therapist child interaction)
- Selection based on emerging skills (or new skill if previous skill was mastered, and no new skill emerging)
- Typical developmental model followed
## Studies on “Joint Attention”—Not all are the same

<table>
<thead>
<tr>
<th>Study</th>
<th>N &amp; Ages</th>
<th>Focus</th>
<th>Methodology</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jones, Carr, &amp; Feeley (2006)</td>
<td>5 children, aged 2-3 yrs. Teachers, Parents</td>
<td>3 studies-- IJA and RJA--point only, “Look”</td>
<td>Multiple-baseline</td>
<td>Respond mastery 19-78 sessions; Initiate mastery 26-157 sessions</td>
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<tr>
<td>Yoder &amp; Stone (2006)</td>
<td>36 preschoolers Therapist mediated</td>
<td>PECS vs. RPMT; focus on RJA and IJA</td>
<td>RCT (3 therapy sessions/wk for 6 months)</td>
<td>NS group by time effect; moderator—some IJA increased more in RPMT</td>
</tr>
<tr>
<td>Schertz &amp; Odom (2007)</td>
<td>3 children, under 3 years old Parent mediated</td>
<td>4 behaviors—faces, turn-taking, response, initiation</td>
<td>Multiple-baseline on behaviors—set order—duration of 2 to 6 months</td>
<td>1 child showed no change in RJA and IJA</td>
</tr>
<tr>
<td>Whalen &amp; Schreibman (2003)</td>
<td>5 children, aged 2-4 yrs Therapist mediated</td>
<td>RJA-- show, follow gaze/point; IJA-- point ,coordinated gaze</td>
<td>Multiple-baseline, DTT, PRT</td>
<td>All 5 improved in responding; 4 of 5 improved in initiating; weaker generalization and maintenance</td>
</tr>
</tbody>
</table>
Importance of ‘development’ should not be underestimated

• Joint attention and play skills are uniquely developmental

• If taught at a point of the child’s developmental readiness, skills should
  ▫ Appear in brief period of time, and not many sessions
    ▪ (depends on some factors such as impairment, age, and history)
  ▫ Once mastered, should not ‘go away’ and should generalize to other partners (given opportunity)
Pay off from early focus on joint attention/joint engagement

• Follow up of children in original study, 5 years later
• 40 out of the 58 children
• 32 became verbal and 8 minimally verbal

Predicting Expressive Language:
  ▫ Treatment group
  ▫ CA
  ▫ IJA
  ▫ Play Level
  ▫ Expressive Language
  ▫ DQ
  ▫ Gender
Pay off from early focus on joint attention/joint engagement

- Follow up of children in original study, 5 years later
- 40 out of the 58 children
- 32 became verbal and 8 remained minimally verbal

Predicting Expressive Language:
- **Treatment group**
- **CA**
- **Initiates joint attention**
- **Play Level**
- **Expressive Language**
- **DQ**
- **Gender**

Kasari, Gulsrud, Freeman, Paparella, Hellemann, 2012, JAACAP
What did we learn from this study?

• Active ingredient to early intervention is a focus on early developing core deficits
  ▫ Joint attention
  ▫ Play

• Results suggest the mechanism is likely engagement as JA and SP interventions led to similar outcome

• Suggestion that APPROACH also matters---the fusion of developmental and behavioral approaches
  ▫ What is evidence for approach?
  ▫ Generalizes to caregivers, maintains, predicts---both proximal and distal outcomes
  ▫ Not found in other studies using other approaches
Evolved Intervention Model--JASPER
Followed with several other studies

- **Parent mediated interventions**
  - 1) Toddlers—pilot with wait list control design (evolved JA/SPER model) n=38
  - 2) Toddlers—comparative efficacy—parent mediated (hands on) versus parent education n=86
  - 3) In home underserved, under-represented families and preschoolers n=120

- **School based interventions**
  - 1) Pilot preschool wait list control (teaching teachers) n=16
  - 2) Pilot preschool nonverbal (expert therapists) n=15
Example from parent mediated study

• Wait list control
• Taught parents one module at a time, individualized to parent
  ▫ Based on strategies they used when playing with their child prior to intervention
• 3 sessions per week for 8 weeks with a one year follow up
• Focus on joint engagement states and play to teach joint attention
Findings: Engagement

Decrease Object Engagement

Increase Joint Engagement

Kasari, Gulsrud, Wong, Kwon, & Locke, 2010
Child Outcomes and Maintenance

- Functional play types increased and maintained with growth over time
- Responds to joint attention increased and maintained over time
- IJA and symbolic play did not...probably due to young age of children, and short term treatment
- Caregiver factors associated with outcome...quality of parent involvement (higher quality better child engagement)
Teacher Mediated JASPER Pilot Study

- Teachers taught modules similar to parent-mediated model
- Taught 1:1 to work with child in the class
- Blinded observer coded teacher and child behaviors in class
- 6 week intervention (2 sessions per week)
Targeted JASPER Intervention with Teachers as the Mediators (pilot with 16 teachers)

Lawton & Kasari, in press, JCCP
Difference between preverbal and nonverbal children

• Most young children are preverbal.....we can get them to talk

• Concern is for the children who remain nonverbal at age 5---entering kindergarten (about 30% of all children)

• Best social and adaptive outcomes are often found for children who are verbal by school age

• These children also represent children who have had access to early interventions but have not gained the requisite prelinguistic skills (play and joint attention)
Access to Communication Important (combined JASPER and EMT intervention)

Boy 5 ½ years; No words or sounds
Regulation of Behavior First
(Combined JASPER and EMT intervention)

Boy 7 years old; few words, scripted
PRIOR TO INTERVENTION

Assessments to determine treatment targets:

- Structured Play Assessment
  - PLAY LEVEL
- ESCS
  JOINT ATTENTION/BEHAVIOR REGULATION SKILLS
Structure Play Assessment (SPA)

Set 1

Set 2

Set 3

Set 4

Set 5
Early Social Communication Scale (ESCS)

Wind up mechanical toys #1, 2, & 3

Hat, ball, car, sunglasses, comb

Book and furry rabbit

Plastic jar task

Pictures on wall
Note: Parts 2 and 3 just consist of the videos.
Part 4 of 8
PROGRESSION OF THE INTERVENTION

PHASE 1: FOUNDATIONS OF ENGAGEMENT
- Introduction to Engagement States, Play Levels
- Setting up the Environment and Understanding My Child’s Behavior
- Following Your Child’s Lead
- Establishing Routines

PHASE 2: IMPROVING ENGAGEMENT AND Routines
- The Balance Between Imitating and Modeling
- Building More Meaningful Everyday Routines
- Introduction to Joint Attention
- Occasioning Joint Attention

PHASE 3: IMPROVING LANGUAGE
- Encouraging More Communication
- Jump-Starting Speech
JOINT ENGAGEMENT STATES

**COORDINATED**
You and your child are interacting with an object.
Your child is driving the interaction.

**SUPPORTED**
You and your child are interacting with an object.
YOU are driving the interaction.

**OBJECT ENGAGED**
Your child is focused on an object by him/herself

**PERSON ENGAGED**
Your child is interacting with you.
There are no toys

**ONLOOKING**
Your child is watching other people

**UNENGAGED**
Your child is not focused on a toy or person

Kasari Lab 2010
Setting up the Environment

• Consideration of the context
  ▫ Lab, Home, School
  ▫ Distractions
    • Home (e.g., TV)
    • Inappropriate toys (i.e., highly preferred)
    • Limited space

• Physical Environment
  ▫ People
    • Sitting in front of child
    • At the child’s eye level
  ▫ Toys (toy choice)
    • Developmentally appropriate
    • Routines/ Clean up
FOLLOWING THE CHILD’S LEAD

• Play with the toy the child wants.
  ▫ Notice where the child’s eyes are focused

• Wait to see how the child is playing with the toy and IMITATE.

• The child may quickly decide to play with different toys. Follow the child’s interest
ESTABLISHING A ROUTINE

- **Work with the parent and child** to build a routine for how to play with the toy.

- A play routine has
  - A few predictable sequences of events
  - Clearly defined roles
  - Consistent words or phrases at each step of the routine
PLAY EXPANSION

• Think of each part of the play routine

• Add ONE more step to the play routine
  ▫ Make sure that the new routine matches the child’s play level
MODEL JOINT ATTENTION SKILLS

- Model joint attention skills while you play with the child.
  - Within child’s attentional focus

- Modeling joint attention skills will help the child initiate joint attention.
IMITATING AND EXPANDING LANGUAGE

- Use clear language that matches the child’s level of language development

- Provide language contingent on the child’s focus of attention

- Label and comment on the items the child plays with and/or sees

- Expand on the child’s communication
UNENGAGED PROTOCOL

1. Wait
2. Evaluate the environment
   Move toys closer to child
   If wandering, least to most directive
3. Offer choices
   Imitating and modeling
4. Person engaged
   Bring in a toy once engaged
Review: Treatment Targets

- **CHILD 1**
  - Joint Attention: Points
  - Play: Simple Play
  - Engagement: People and Object Engaged

- **Toys**
  - Puppets
  - Rockets
  - Bubbles
  - Pig
  - Puzzles
  - Songs

- **CHILD 2**
  - Joint Attention: Points
  - Play: Combination/ Pre-Symbolic
  - Engagement: Supported/ Coordinated

- **Toys**
  - Magnatiles
  - Blocks
  - Dolls
  - Bus
  - Rollercoaster
Note: Parts 5 and 6 just consist of the videos.
Part 7 of 8
Potential Road Blocks

• Disinterest in toys
  ▫ People games w/ toys (e.g., puppets)
  ▫ Songs with matching toy (e.g., wheels on the bus)

• Hyper-sensory
  ▫ Visual
    • Person engagement
    • Sensory activities (e.g., water, beans)
  ▫ Tactile (e.g., different textured blocks)
Potential Road Blocks (cont’d)

• Rigidity
  ▫ Wait and watch
  ▫ Assess play environment
  ▫ Verbal prompt
  ▫ Model a different appropriate play action
  ▫ Try another model
  ▫ Person engagement
  ▫ Remove the toy (last resort)
Parent Coaching

• The interventionist presents the module content to the caregiver.

• To teach the specific module content, the interventionist provides caregivers with
  ▫ 1) an overview of the specific module
  ▫ 2) explanations of the content while playing
  ▫ 3) a summary of the module content
Level of Support

• Correct judgment regarding the level of support the caregiver requires
  ▫ Self reflection
  ▫ Verbal suggestion
  ▫ Model
Weekly Parent Modules

1. Introduction to Engagement States and Play Levels
2. Setting up the Environment and Understanding My Child’s Behavior
3. Following Your Child’s Lead
4. Establishing Routines
5. The Balance Between Imitating and Modeling
7. Introduction to Joint Attention: Recognizing, Responding, Modeling
8. Occasioning Joint Attention: Setting up Opportunities and Prompting
9. Waiting for Communication
10. Jump-Starting Speech
Introduction to Engagement States and Play Levels

How is your child connected?

- You need to know how you and your child are connected during activities.

  **COORDINATED**
  - You and your child are interacting with an object. Your child is driving the interaction.

  **SUPPORTED**
  - You and your child are interacting with an object. **YOU** are driving the interaction.

  **OBJECT ENGAGED**
  - Your child is focused on an object by him/herself

  **PERSON ENGAGED**
  - Your child is interacting with you. There are no toys

  **ONLOOKING**
  - Your child is watching other people

  **UNENGAGED**
  - Your child is not focused on a toy or person

* Your child is mostly in __________ when you two play

* Our Goal: To Increase Supported and Coordinated Engagement

Understanding Play

Before you begin to play, know your child’s level of play

* How Does Play Develop? *

**At first**

- Simple Play
  - Rolling a ball
  - Squeezing a Stuffed Animal

- Combinations
  - Putting objects together
  - Taking Objects Apart

- Almost Symbolic Play
  - Bringing cup to mouth
  - Bringing cup to doll’s mouth

- Symbolic Play
  - The doll has life
  - Pretending one thing is another

**Later on**

Kasari Lab 2010
Do these five things before you start to play or engage in everyday activities:

- **Face your child**
  - This will make it easier for your child to connect with you

- **Remove Distractions**
  - Put away the keys, keep the telephone out of reach

- **Notice Your Child’s Feelings and Behavior**
  - If your child is being fussy, use fewer demands
  - If your child is happy, push for a better connection

- **Set-up the room**
  - Make the toys and objects easy to get to
    - Arrange objects on a shelf within your child’s reach
    - Put a few toys out on the floor
  - Use only a few toys when you play
    - Too many toys may make your child too excited

- **Know your child**
  - **TOYS**
    - Pick toys that are at your child’s play level
      - Toys that are too hard can be frustrating
      - Toys that are too easy can be boring
    - Pick your child’s favorite toys
      - Your child will want to play with toys he/she likes
  - **ACTIVITIES**
    - Pick activities that your child can learn to do better
      - Activities that are too hard can be frustrating
      - Activities that are too easy can be boring

Setting up the Environment
Following Your Child’s Lead

Encouraging Your Child to Initiate

WAIT!!
Take a moment to watch your child before beginning to interact

First, Notice
◆ What is your child looking at?
◆ What is your child holding in his/her hand?
◆ What is your child doing with the toy/object?

Then, Follow
◆ Be excited about how your child is playing with the toy or using the object!
◆ During PLAY... Imitate what your child does with the toy
◆ During OTHER ACTIVITIES... Do the next step of the activity

What if My Child Isn’t Focused on a Toy or an Object?

First, offer a Choice
◆ Offer your child one or two toys or objects s/he likes
◆ If your child chooses a toy or an object, use the object your child wants

If your child does not want to play with toys, Connect
◆ Have fun without toys. You can sing a song or play a tickle game.
◆ It is okay if you are not playing with toys all of the time. The most important thing is that you connect with your child as much as possible!
◆ Play these games until your child connects with you. You can then bring in toys.

Kasari Lab 2010
A routine is a script for how to play with a toy or how to use objects in an activity

- A play routine is built by following your child’s lead
- An activity routine is also built by helping your child understand the steps needed to do the activity (e.g., washing hands)

All children need routines with toys and objects

A play/activity routine has:

- A few predictable things that happen
- Clear roles for you and your child
- The same words for each part of the routine

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Put the toy figure in the car</td>
<td>Turn water on</td>
</tr>
<tr>
<td>Drive the car home</td>
<td>Scrub with soap</td>
</tr>
<tr>
<td>Take toy figures out of the car</td>
<td>Rinse hands</td>
</tr>
<tr>
<td>Put the toy figures in the bed</td>
<td>Turn water off</td>
</tr>
</tbody>
</table>

- Repeat the routine once it is established
  - All children repeat routines
  - It is fun for children to repeat routines!

Always think about the following:

- What toys or objects are you going to use?
- What is your child’s play level?
- How is your child already using the toy or object?
- How many steps should the routine have?
Imitating and Modeling

Sometimes you should *imitate* your child
When?
- Your child already has an idea of how to play with the toy
- Your child already knows how to use an object during an activity

Other times you should *model* for your child
When?
- Your child does not know how to play with the toy or use an object
- Your child will lose interest in the toy if you don’t add a new step to the routine

Try to IMITATE MORE than MODEL
Building More Meaningful Everyday Routines

Make your routines even better by doing these 4 things:

**Add New Steps**
- Add ONE more step to the routine
- Make sure the new step is at your child’s level

**Surprise**
- AFTER you and your child build a routine, ADD a “surprise”
  How??
  - Pick one part of the routine to change
  - CHANGE this one part
  - Change it in a fun way. Surprises are silly and unexpected!

**Be excited**
- Smile
- Raise your arms in excitement
- Use happy words like “Wow!” and “Yay!”

**Make eye contact**
- Get down to your child’s eye level. You might need to lay on the floor!
- Bring toys within child’s attentional focus
- A few friendly tips:
  - Don’t sacrifice the connection with your child to do this
  - Try to not use phrases like “look at me”

Kasari Lab 2010
Introduction to Joint Attention

What is Joint Attention?

- Using gestures to SHARE objects and events with OTHER PEOPLE
- Children use the following joint attention gestures before they learn to talk:

  - Pointing
  - Shared Eye Contact
  - Giving to Share an Object
  - Showing

BE EXCITED if you notice your child using these gestures!

USE these gestures whenever you can
- Your child will use more joint attention if you do

Your child may use some of these gestures to REQUEST
- Also get excited about these skills! They come before joint attention gestures.

Kasari Lab 2010
Encouraging More Communication

Talk less, so your child will be able to talk more

Waiting for Communication

- Don’t feel like you need to talk all the time
  - Talking less will give your child more room to communicate

- WAIT for your child to communicate
  - If your child needs help, WAIT... and let your child tell you
  - If your child wants to share something with you, WAIT... and let your child tell you

- Try not to ask too many questions
  - When you ask questions, your child can only respond
  - You want your child to INITIATE communication

- Look excited while waiting for your child to communicate
Jump-Starting Speech

The Right Words
Help your child talk and understand more by doing these 4 things:

1. Use language at your child’s level
   - “Cup”
   - “Pour”
   - If your child talks with one word, use one word
   - If your child talks with two words, use two words

2. Use simple labels
   - Use simple words to mark steps in a routine (“In”, “Go”, “Wake up”)
   - Name the object your child is looking at

3. Talk about what your child is doing
   - “We make a castle!”
   - Talk about objects you two are using together
   - Talk about what your child is looking at
   - Stay away from “third-person” language (“Mommy and Sally make a Castle”)

4. Imitate and add to your child’s speech
   - “Car”
   - “Fix Car”
   - Repeat what your child says and add extra words
   - Imitate your child’s actions and add a word

Kasari Lab 2010
Note: Part 8 just consists of the video.
• For additional training please contact Dr. Kasari at:

The Center for Autism Research & Treatment
http://www.semel.ucla.edu/autism
For more information, please go to the main website and browse for workshops on this topic or check out our additional resources.

**Additional Resources**

**Online resources:**
1. Center for Autism Research and Treatment: http://www.semel.ucla.edu/autism/resources

**Selected Peer-reviewed Journal Articles:**