

Evidence-Based Joint-Attention Interventions for Children with Autism

How are they being implemented in Connecticut?

What is Joint Attention?

- Can be tentatively defined as: An early social-communicative behavior in which two people share attentional focus on an object or event
- Some debate surrounding exact definition (more on that soon)
- Example: Young child in mother's arms points toward airplane flying overhead and they watch it go by together
- Scaife & Bruner, 1975- Infants can follow adult eye gazes, and their ability to do so plays a crucial role in the development of language
- This ability is most often described along two dimensions

Joint Attention Continued (Two Dimensions)

- 1) Described in terms of initiation- Child either responds to another's bid for joint attention, or initiates a bid for joint attention.
- Initiating is considered more advanced
- 2) Developmental Level
- Shared Gaze (Lowest)- Looking at same the thing
- Dyadic Joint Attention- "Conversations" with facial expressions, noises. Typically develops at 2 age months.
- Triadic Joint Attention- Both look at object with an understanding of their shared focus. Typically develops around 9 months of age.

A Note on Terminology

- Examples of terminology similar to Joint Attention:
- Shared Attention: Same thing as Joint Attention
- Visual Triadic Engagement: Same as Triadic Joint Attention
- Joint Engagement: Involved in the same object or event as another person. Can overlap with JA, but not necessarily
- Proto-declarative: Gesture such as pointing. Can be thought of as either an act that's potentially part of joint attention, or a bid for child-initiated Triadic JA
- It should also be noted that some researchers only consider instances where both parties are aware of sharing attention (Triadic Joint Attention) to be JA

Why is Joint Attention important?

- Joint Attention is a “pivotal skill,” or one that has cascade effects on development because it allows for the development of other skills
- Joint attentional abilities at young ages have been linked to numerous outcomes, deficits in this area are one of the earliest and most consistently detectable signs of Autism Spectrum Disorder.
- Overall outcomes for people with ASD in general tend to be poor- low rates of employment, marriage, life satisfaction, and independence.
- Yet, data from laboratory studies suggest that fostering the development of JA is possible, and that it can lead to greatly improved outcomes

Documented Effects of a JA Intervention in a Controlled Lab Study

- Gulsrud, Hellemann, Freeman, Kasari (2008)
- Examined Developmental trajectories of children who participated in a symbolic play or Joint Attention
- Found that children assigned to Joint Attention condition had significantly higher levels of joint attentional abilities than symbolic play condition or control at both 1 and 5 year follow ups.
- Also found that children in JA condition were “re-set” to a different developmental trajectory comprised of accelerated growth in deficit areas
- 36% of Children JA condition “lost” their diagnosis of ASD
- Researchers hypothesize that the significant treatments effects were due to increased social motivation from training in “Gestural social communication” that later enhanced social cognition

Evidence-based intervention strategies for Joint Attention

- DTT Among first to be proven effective
- Naturalistic/Developmental- Became popular after partly as a response to rigid structure of DTT
- Interventions that combine elements of both of these
- Pivotal Response Training (PRT)
- Picture Exchange Communication System (PECS)
- Technology Based Interventions

Implementation/Fidelity of JA Interventions

IRL

- Dr. Strain “If you want results, have to be obsessed with fidelity.”
- Most published interventions for joint attention have been conducted under lab conditions using highly trained clinicians
- Wong and Kasari (2012) found that few pre-school special-education curricula offered instruction on teaching joint attention
- McIntyre and Barton (2010) note that “pivotal behaviors” as described by Koegel and Koegel (2006), including joint attention, are often not the focus of early intervention programs in favor of more general approaches, despite research showing the former to be more successful.
- Dunst and Trivedi (2009): Evidence-to-practice gaps for evidence-based interventions for autism, in general, are wide

What this Study Aims to Find Out

- Gaining an understanding of where, how, and how much interventions for Joint Attention are currently being implemented is the first step toward assessing treatment fidelity
- To that end, a survey seeks to find out what evidence-based intervention strategies for Joint Attention are being practiced by birth to three and preschool special-education programs
- One area of interest/possible research question: What is the correlation between knowledge of JA and interventions for it and their implementation by practitioners who design/choose interventions (Most likely BCBA's for most programs)?

Why this Study Aims to Find this Out

- Now that the effectiveness of JA interventions has been established, it appears that research on fidelity would now be a more effective way to help more people than more laboratory experiments on exactly which are the most effective and in what dimensions etc.
- Overall outcomes for people with disabilities are likely to be improved if interventions are implemented with fidelity
- Optimistically, this research could stimulate conversations or further research on the effectiveness, rather than just the efficacy, of different early intervention strategies for joint attention.

Limitations/Difficulties

- Tangle of Terminologies
- What constitutes a JA intervention?
- Some interventions are considered evidence-based for JA, but are designed principally for other reasons (PECS) (Collateral outcomes) (See White et al. 2011 for an excellent review that separates JA interventions by primary and collateral effects)
- Some target JA specifically but also target other things (JASPER)
- Some are just for JA (JAML, some basic DTT interventions)
- So, what does one mean when they say “Intervention for Ja?”

Limitations/Difficulties Continued

- Many interventions in the literature don't have names- they are often simply described in articles as "A JA intervention with x components," or they are just described only very briefly. For example, many are described as having lessons x times a day for y amount of time on Z subject, but the lessons aren't really described.
- The survey is a self report-questionnaire

Current Iteration of Survey

Joint attention is an early social-communicative behavior in which two people share attentional focus on an object or event. A prototypical example is a young child or their caregiver pointing toward the sky as an airplane flew overhead, and then the two of them watching it go by together. There are two types, where the child initiates, and when the child responds to bids for joint attention. There are considered to be three developmental “levels” of joint attention with the most basic being simple shared gaze, the second being dyadic joint attention, where a child and adult look into each other’s faces and “converse” via facial expressions or noises (children usually begin doing this at two months), and triadic joint attention, where a child views an object with an adult with the understanding of their shared focus, as evidenced by checking back with the adult’s gaze to make sure both are seeing the same thing.

1. On a scale of 1-5, how important would you consider the development/mastery of joint attentional abilities to obtaining optimal outcomes in children with ASD?

Survey Continued

2. Do you use intervention strategies for joint attention based on Discrete Trial Training?

Discrete Trial Training, DTT, provides small rewards after brief task or "Trial."

Example: An example of a simple DTT intervention for joint attention would be a child looking at object on table in response to coach, teacher, etc. looking at it first and immediately receiving a small reinforcement such as an edible.

- a. On a scale of one to five, how familiar with joint attention interventions based on DTT intervention strategies?
- b. On a scale of one to five, how comfortable are you with implementing or designing for your program interventions for joint attention based on DTT?
- c. If applicable, what proportion of children with ASD in your program are involved in such interventions?
- d. If applicable, how many hours per week on average do the children participate in such interventions?

Survey Continued

3. Do you use intervention strategies for joint attention based on naturalistic (developmental) principles?

“Naturalistic (developmental)” principals include the idea of letting children explore and engaging them in a natural environment

Example: Milieu Training

- a. On a scale of one to five, how familiar are you with joint attention interventions based on naturalistic principals?
- b. On a scale of one to five, how comfortable are you with implementing or designing for your program interventions for joint attention based on naturalistic intervention strategies?
- c. If applicable, what proportion of children with ASD in your program are involved in such interventions?
- d. If applicable, how many hours per week on average do these children participate in such interventions?

Survey Continued

4. Do you use intervention strategies for joint attention that combine the above two methods (DTT and Naturalistic)?

Combine methods attempt to employ the “best of both worlds” of DTT and Naturalistic principals.

Example: JASPER, or a DTT JA trials taking place in naturally occurring, spontaneous play environments

- a. On a scale of one to five, how familiar are you with joint attention interventions based on combined intervention strategies?
- b. On a scale of one to five, how comfortable are you with implementing or designing for your program interventions for joint attention based on combined intervention strategies?
- c. If applicable, what proportion of children with ASD in your program are involved in such interventions?
- d. If applicable, how many hours per week on average do these children participate in such interventions?

Survey Continued

5. Do you use peer-mediated interventions?
6. Do you use technologically-based interventions?
7. Do you use Picture Exchange Communication Systems (PECS)?
8. Do you use Pivotal Response Therapy (PRT)?

Directions for future Research

- Areas to allocate resources to (types of interventions and geographically)
- Now that know what is being attempted (this is in the future), how well is it being attempted (efficacy)?
- Are education initiatives for interventionists warranted? If so, for what?
- If different areas or types of schools or birth to three programs attempt different things- Why? How effectively?
- What is the relation between SES of a school, program, or participant and type of intervention employed?