Family-Based Coaching with Young Children with Autism Spectrum Disorder

Val Postal
Donna Miller
Early Intervention Technical Assistance (EITA)

Outcomes
1. Increase understanding of what Family-based coaching is and the evidence elements supporting the use of this practice
2. Identify strategies to support parent use of Applied Behavior Analysis strategies within their everyday routines.
3. Increase awareness of the Autism Navigator as a resource to support coaching for families with children on the autism spectrum
Child Social and Cognitive Competence
Organizational Processes
Developmental Resources
Family Patterns of Interaction
Family Resources

What research has brought us here?

Credit: Autism Navigator Knowledge and Skills Course, slide 12

Individuals with Disabilities Act

Credit: Autism Navigator Knowledge and Skills Course, slide 16

Learning in Natural Environments

- Children learn by doing
- Everyday activities offer many opportunities
- IDEA Part C regulations
- Using what the family needs and wants to do is a natural outcome for child
  - Goal is to support their participation, interaction and independence
Early Brain Development
What does the science tell us?

Brain Connectivity

The Neuron
Experience-Expectant Neuroplasticity

- Connections form based on exposure to experiences that most people would have in their environment.
- Connections made ONLY if the person is exposed to the experience.
- The brain is expecting these types of experiences (National Research Council & Institute of Medicine, 2000).
- For example, the ability to develop the part of our brain that processes vision depends on taking in light through our eyes.

Experience-Dependent Neuroplasticity

- Changes happen only if the child has the environmental stimuli to build those connections (Singorenko, in press).
- New experiences make new connections.
- For example, children living in an agricultural, farm community develop awareness of weather patterns and the responses of animals in ways that children growing up in urban environments do not.

Timing—Sensitive and Critical Periods

- The timing of experiences can affect brain development.
- Animal studies have shown that there are certain windows of time during which the young are especially sensitive to their environment (Fox, 1992; Hubel et al., 1997).
Sensitive Periods

- Sensitive periods—time in development when a brain region is most open to learning or refining a particular skill or brain function.
- Different parts of the brain have different sensitive periods.

![Window of Opportunity](image)

---

Pruning

- Circuits that “fire” more often are kept, whereas those that are not used are removed.
- Pruning allows the brain to adapt to its environment.

![Pruning](image)
What is a routine??

- Predictable, Repetitive, Functional, Logical
- Adaptable
- Occur in a common place
- Are typical or everyday activities
- Are regular, unvarying habitual and rote procedures
- Are NOT a schedule

Connectivity: Bedtime Routines

In each round, please describe activities associated with bedtime:
1. Routines that happen
2. Feelings a child may have
3. Things going on in the house/environment

Bedtime Routines Debrief

What part of the brain is stimulated during bedtime routines?
- What physical and sensory experiences did the child have?
- What did he hear and see?
- What feelings does he connect with bedtime?
- What cues in the environment does he associate with bedtime?
What Providers Can Do

- Set realistic expectations based on brain development.
- Be aware that the experiences we provide are building brain architecture.
- Provide positive relationships and supportive, enriching environments.

Additional Key Messages

- The forebrain is shaped by experiences in early childhood and is responsible for higher order functions such as thinking, planning, problem solving, sensory processing, emotional regulation, and language development.
- We play a key role in providing children developmentally appropriate stimulation and responsive care to foster healthy brain growth in early childhood, when it is most plastic.
How does this look in action:

Autism Navigator: Knowledge and Skills  Module 2 Slide 36

Supporting Families Through Coaching

Keep the parent–child relationship at the center of everything we do.

Support competence, confidence, and positive relationships.

Video
Competence and confidence

The experiences afforded a parent to strengthen existing and build new parenting capacity must also influence or change a parent's sense of confidence and competence if the parent is to sustain engagement in parenting behavior.

- A sense of competence refers to the (self-efficacy) belief that one's behavior will have the expected effect or outcome.
- A sense of confidence refers to the (self-efficacy) belief that one has the capacity to perform a task competently.

Carol Trivette's training in PA, 2014

Continuum of Collaborative Coaching

From Autism Navigator

Move ahead:
- Child is well-regulated and actively engaged.
- Parent is confident with balance of supports and demands.

Figure out what works, explain and model.

Back out for caregiver independence

Guided Practice with Feedback

Build Consensus

Caregiver Practice with Feedback

New strategy

Back up:
- Child is dysregulated or not actively engaged.
- Parent is uncomfortable or unsure of role.
Why Focus on the Dyad?
• Family engagement is critical to a high quality early childhood program. Research in early intervention tells us parents are a young child’s best teacher.

• The Autism Navigator is a resource demonstrating coaching practices which can increase caregiver’s competence and confidence to support their child’s development now and in the child’s future.

• Embedded in family-based coaching are ABA practices. Family-coaching supports parent’s ability to implement ABA strategies, thus increasing time engaged in learning. Family-based coaching is recognized by the CEC’s Division for Early Childhood as an evidence based practice.

• BCBA credits

Coaching

• Coaching over time
  – Brandon from 32 months to 38 months

What is “evidence based?”
**Evidence-Based Practices**

- Best Available Research Evidence
- Active Decision Making Process
- Values and perspectives of families
- Knowledge and clinical expertise

**Defining Evidence Based Practice**

- Early Childhood Intervention for young children with ASD
  - National Research Council, NPDCI/FPD, Research Institutions
  - Early childhood special education
    - Early childhood education & mental health
      - Zero to Three, NAEYC, etc.
    - General child growth & development
      - American Academy of Pediatrics, National Institute of Health

**Early Childhood Intervention for young children w ASD**

- E.g., Earlier the better, focus on socio-communication, behavioral principles

**Recommended Practices from Research Reviews or Synthesis**

- National Research Council, NCDEC/CPG, Research Institutions
  - E.g., Earlier the better, focus on socio-communication, behavioral principles
  - Early childhood special education
    - DEC recommended practices
      - E.g., family-centered, explicit instruction, individualized plans
  - Early childhood education & mental health
    - Zero to Three, NAEYC, etc.
      - E.g., secure attachments, routines, literacy exposure
  - General child growth & development
    - American Academy of Pediatrics, National Institute of Health
      - E.g., screen time, sleep, nutrition, movement
Process Used to Identify EBP

- Identified outcomes related to the core features of autism
- Reviewed literature related to these outcomes as well as the key words autism, ASD, and autism spectrum, limited by age (birth – 21)
- Identified and grouped teaching interventions that addressed these outcomes/domains
- Determined criteria and whether an evidence base supported the practices

Meta Analysis

- Statistical technique for combining the findings from independent studies
- Used to assess the clinical effectiveness of interventions by combining data from research trials
- Provides a precise estimate of treatment effect—weighing the size of study results
- Validity of MA depends on the quality of the systematic review on which it is based

Implementation Science

The study of methods that influence the integration of evidence-based interventions into practice settings.

(a) what kinds of interventions are most efficacious (and for whom)
(b) what variables moderate and mediate treatment gains and improved outcomes
(c) the degree of both short-term and long-term improvements that can reasonably be expected.
Fidelity

• An Evidence Based Practice is implemented

• Treatment Integrity- degree to which you are correctly implementing the practice
  – How long should you continue the baseline and treatment phases?
  – Is the team including parents able to accurately implement the treatment?
  – What environmental variables influence the effectiveness?
  – Determination of whether the treatment is effective?

First: Do No Harm

Unsubstantiated Practices

- Antifungal treatment
- Aquatic therapy
- Auditory Integration Therapy
- *Chelation Removal of Toxic Metals
- Cranio-sacral and chiropractic therapy
- Dietary interventions
- Transcranial Direct Current Stimulation

*Chelation Removal of Toxic Metals

(Seri & Lyons, 2011)
ASD Evidence Based Practices

- Tested in high quality research designs and found to be efficacious
- **Comprehensive Treatment Models** - conceptually organized packages of practices and components, designed to address a broad array of skills and abilities of C w/ASD & F
- **Focused Interventions** - individual instructive practices or strategies that teachers or practitioners use to teach specific educational targets-skills and concepts to C w/ASD.

Comprehensive Treatment Models

- **LEAP** Learning Experiences ad Alternative Programs (preschool)
- **TEACCH** Treatment and Education of Autistic and Communication related handicapped Children (preschool)
- **ESDM** Early Start Denver Model (Toddlers)
- **PRT** Pivotal Response Training (Toddlers/preschool)
- **ESI** Early Social Interaction *(Autism Navigator)*
- **Other**
Considerations

- Not possible to determine which elements of the package are responsible for progress
- Branding—need a well-written manual specifying the content (curricula) and teaching process to be used
- Branding—increase expense
- Geography—usually done in lab settings limiting availability to specific communities
- Culture—majority of studies do not include diverse participant groups

Implementation in EI

| Evidence | Each IFSP/IEP is a research study |
| Subject  | Unit of study/child and family    |
| Methods  | Evidence based Practical strategies |
| Results  | Measurement of outcomes/goals  Progress monitoring |
| Discussion | Limitations and generalizations |

ASD Established Treatments

0-2
- Behavioral
- Comprehensive Behavioral Treatment for Young Children (CBTYC)
- Joint Attention
- Naturalistic Teaching Strategies (NTS)

3-5
- Antecedent
- Behavioral
- CBTYC
- Joint Attention
- Modeling
- NTS
- Peer Training
- Pivotal Response Training (PRT)
- Schedules
- Self-management

National Standards Project, 2009
**Behavior Based Interventions**

In early intervention, the emphasis is on **Behavioral Practices** in natural environments – not on packages of interventions. We build in **reinforcement, prompting, modeling**, etc. while coaching families to support their child’s engagement and development.

Remember, Evidence Based Practices are not something that only BCBAs or specialists in ABA do. When identifying strategies, it is critical to know **why** we apply a specific strategy for a particular child when working on an outcome.

---

**Focused Interventions**
- Antecedent-based Interventions
- Functional Behavioral Analysis
- Modeling
- Naturalistic intervention
- Parent-mediated Implemented Intervention
- Pivotal Response Training
- Prompting
- Reinforcement
- Social Skills Training
- Video Modeling

*(Odom, Cox, Shaw, Kucharczyk, 2014, Evidence-Based Early Identification and Intervention for Infants and Toddlers with ASD and Their Families, CEC Conference presentation)*

---

**Common Program Elements Model Programs for Young Children with**
- Earlier is better
- Curriculum emphasizes skill development in ASD core deficit areas
- Planned, repeated teaching opportunities w/ Generalization Strategies.
  - Individualized goals and outcomes
  - Ongoing monitoring and program improvement
- Predictability and Routines
- Functional Approach to Problem Behaviors
- Planning for Transitions
- Family Involvement
  - Sufficient support for adults
- Intensive Intervention/Active Engagement time @ 25 hours/week

*(National Research Council, et al)*
Antecedent-Based Strategies

- Arranging the environment
- Changing the schedule/routine
- Structuring time
- Using highly preferred activities/activities to increase interest level
- Offering choices
- Altering the manner in which instruction is provided
- Enriching the environment so that learners with ASD have access to sensory stimuli that serve the same purpose as the interfering behavior (e.g., object to hold)
- Implementing proactivity interventions (cue the next activity or schedule change)

Video

Key Consideration Of EBP

- Behavior based practices - implemented in a variety of ways
- Fidelity of implementation
- Intentional teaching is required
- Learning activities must be motivating
- Learning in the natural environment is important

Bottom line: EIs need to have the knowledge and ability to implement the critical ingredients of effective intervention for each child and family.
Fidelity

• An EBP is implemented

• Treatment Integrity - degree to which you are correctly implementing the practice
  – How long should you continue the baseline and treatment phases?
  – Is the team including parents able to accurately implement the treatment?
  – What environmental variables influence the effectiveness?
  – Determination of whether the treatment is effective?