Evidence-Based Interventions to Support Social Communication

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DISCLOSURE

Patricia A. Prelock

- I have written books on autism and receive royalties from the sale of those publications. I sometimes receive an honoraria for presenting on autism.

- I am also a member of the ASHA Board of Directors and receive no compensation for my volunteer service in my role as ASHA President.

Categories of Strategies & Interventions

<table>
<thead>
<tr>
<th>Physiologically-oriented</th>
<th>Skill-based</th>
<th>Relationship-based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change how information is received and processed by the brain. e.g., Sensory integration, pharmacology, nutrition</td>
<td>Support the development of specific skills e.g., DTL, PECS, video modeling</td>
<td>Attempts to facilitate a child’s attachment, affect or relatedness. e.g., Floor Time, RDI</td>
</tr>
</tbody>
</table>

Comprehensive Programs
Reduces impairment across ability areas and improve long-term outcomes e.g., TEACCH

Heflin & Simpson, 2005; Simpson, 2010
Traditional Behavioral End | Social Pragmatic Developmental End
---|---
Use highly prescribed teaching structure | Emphasize initiation & spontaneity
Follow adult’s lead | Follow child’s lead
Teach skills one on one | Teach within the natural environment
Predetermine correct response | Consider related responses
EXAMPLE: Discreet Trial | EXAMPLE: Floor Time

**Continuum of Interventions**

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**Contemporary Behavioral Approaches**

- Offer a ‘middle ground’
  - Give children choices
  - Share control of teaching opportunities
  - Use preferred activities & materials

*EXAMPLE: Pivotal Response Training*

*(Prizant & Wetherby, 1998)*

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**Effective Early Intervention**

*(National Research Council, 2001)*

- Start as early as possible
- Ensure active ENGAGEMENT in intensive instruction
  - Developmentally appropriate activities
  - GOAL-based and systematically planned
  - Full day, 5 days/week, 12 months/year

*What might active engagement look like?*
Effective Early Intervention
(National Research Council, 2001)

- Use planned teaching opportunities (15-20 minute intervals for young children)
- Include families and other contexts (e.g., typical peers) to maintain and generalize learning

Effective Early Intervention
(NATIONAL RESEARCH COUNCIL, 2001)

Adult Support

Functional Spontaneous Communication

Social Instruction

Cognition & Play

Behavior

What are effective educational practices for school age children?

- Six core components for comprehensive instructional programs for children with ASD & their families (Iovannone et al., 2003)
- Individualized supports & services matched to child’s profile through the IEP process
WHAT ARE EFFECTIVE EDUCATIONAL PRACTICES for School Age Children?

- **Systematic instruction**=>careful planning, valid goals, defined instructional procedures, evaluation & adjustment
- **Structured learning environment**=>curriculum is clear to student & staff

WHAT ARE EFFECTIVE EDUCATIONAL PRACTICES for School Age Children?

- **Specialized curriculum content**=>focus on social engagement, initiation & responding to social bids, recreational & leisure skills
- **Functional approach to problem behavior**=>focus on replacing problem behavior with appropriate 'replacement' behavior
- **Family involvement**=>parent professional collaboration

COMPLEMENTARY & ALTERNATIVE MEDICAL (CAM)

- At least 52% have had CAM therapies
- 70% of the CAM therapies are related to diet & supplements
- 75% felt the CAMs were effective

(Wong & Smith, 2006)
Evidence Base Decision Making for Intervention Planning
(National Standards Project, 2009)
www.nationalautismcenter.org

- Created a scientific merit rating scale based on:
  - Experimental rigor of the research design
  - Quality of the dependent variable
  - Evidence of treatment fidelity
  - Demonstration of participant ascertainment
  - Generalization data collected

- Examined treatment effects
  - Across ages (birth to 21 years)
  - Verbal & Intellectual ability
  - Autism, Asperger’s Disorder and PDD-NOS

Establishing an Intervention Evidence Base
(National Standards Project, 2009)

Classification
- Established
- Emerging
- Unestablished
- Ineffective/Harmful

Behavioral treatments had strongest support
Non-behavioral approaches make an important contribution & require further research
### Selected Established TXs with Favorable Outcomes (NSP, 2009)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Skills Increased</th>
<th>Behaviors Decreased</th>
<th>Ages</th>
<th>DX Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral Package</td>
<td>Academic, Communication, Interpersonal, Learning readiness, Personal responsibility, Play, Self-regulation</td>
<td>Problem behaviors, Sensory/emotion regulation, Restricted, repetitive behaviors</td>
<td>0-21</td>
<td>Autistic Disorder</td>
</tr>
<tr>
<td>Story-based Intervention Package</td>
<td>Interpersonal, Self-Regulation</td>
<td>—</td>
<td>6-14</td>
<td>Autistic Disorder, Asperger Syndrome</td>
</tr>
<tr>
<td>Self Management</td>
<td>Interpersonal, Self-Regulation</td>
<td>Problem Behaviors</td>
<td>3-18</td>
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<tr>
<td>Pivotal Response Training</td>
<td>Communication, Interpersonal, Play</td>
<td>—</td>
<td>3-9</td>
<td>Autistic Disorder</td>
</tr>
<tr>
<td>Modeling</td>
<td>Communication, Cognition, Social, Play, Personal responsibility</td>
<td>Problem behaviors, Sensory/emotion regulation</td>
<td>3-18</td>
<td>Autistic Dis., Asperger Syndrome, PDD-NOS</td>
</tr>
<tr>
<td>Peer Training Package</td>
<td>Communication, Social, Play</td>
<td>Restricted, repetitive behaviors</td>
<td>3-14</td>
<td>Autistic Disorder, PDD-NOS</td>
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<td>Communication, Interpersonal</td>
<td>—</td>
<td>3-9</td>
<td>Autistic Disorder, PDD-NOS</td>
</tr>
<tr>
<td>Peer-mediated Instructional Arrangement</td>
<td>Interpersonal</td>
<td>—</td>
<td>6-9</td>
<td>Autistic Disorder</td>
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National Professional Development Center (2014)

- Identified 27 EBPs
- Factsheets (http://autismpdc.fpg.unc.edu/node/727)
- Briefs (http://autismpdc.fpg.unc.edu/content/briefs)
- Training modules
  http://autismpdc.fpg.unc.edu/content/autism-internet-modules-aim

Why are NPDC and NSP results different?

- Difference in the unit of analysis: intervention practices vs. treatments
- Differences in how practices were clustered
- Some differences in evaluation process and criteria
Overlap Between Evidence-Based Practices Identified by the National Professional Development Center (NPDC) on ASD and the National Standards Project (NSP)

Established Treatments Identified by the National Standards Project (NSP)

- Antecedent Package
- Behavioral Package
- Story-based Intervention Package
- Modeling
- Naturalistic Teaching Strategies
- Peer Training Package
- Pivotal Response Treatment
- Schedules
- Self-management
- Comprehensive Behavioral Treatment for Young Children
- Joint Attention Intervention

The NPDC on ASD did not review comprehensive treatment models. Components of the Comprehensive Behavioral Treatment of Young Children overlap with many NPDC-identified practices.

The NPDC on ASD considers joint attention to be an outcome rather than an intervention. Components of joint attention interventions overlap with many NPDC-identified practices.

Antecedent-Based Intervention
- Time delay
- Reinforcement
- Task analysis
- Discrete Trial Training
- Functional Behavior Analysis
- Functional Communication Training
- Response Interruption/Redirection
- Differential Reinforcement
- Social Narratives
- Video Modeling
- Naturalistic Interventions
- Peer Mediated Intervention
- Pivotal Response Training
- Visual Supports
- Structured Work Systems
- Self-management
- Parent Implemented Intervention

The NSP did not consider parent-implemented interventions as a category of evidence-based practice. However, 24 of the studies reviewed by the NSP under other intervention categories involve parents implementing the intervention.

Social Skills Training Groups
- Social Skills Package was identified as an emerging practice by the NSP.

Speech Generating Devices
- Speech Generating Devices (Augmentative and Alternative Communication Device) was identified as an emerging practice by the NSP.

Computer Aided Instruction
- Computer Aided Instruction (Technology-based Treatment) was identified as an emerging practice by the NSP.

Picture Exchange Communication
- Picture Exchange Communication System was identified as an emerging practice by the NSP.

Extinction
- Extinction (Reductive Package) was identified as an emerging practice by the NSP.

Other Considerations in Treatment Decisions

- Parents choose interventions with & without evidence (Miller et al., 2012)
- Parent are most concerned about (Macintosh et al., 2012):
  - Treatment effectiveness
  - Provider relationship
  - Access to desired treatments
  - Costs, medication concerns & stress
- Families' SES relates to their access to services (Irvin et al., 2012)
- Influences on families' TX choices (Patten et al., 2013):
  - Severity of child's sensory issues—leads to earlier intervention
  - Higher education associated with diet/vitamin TX & greater number of services

Knowing the influences on TX decisions . . .

What is our responsibility as providers?
How do we support children?
Consider the ICF
(World Health Organization, 2001)

Health Condition (disorder/disease)

Body function & structure → Activities → Participation

Strategies → Interventions → Programs

Environmental Factors

Personal Factors

EXAMPLE:
Ethan has ASD

Body function & structure
• Difficulty concentrating in busy environments
• Difficulty understanding emotions and busy social situations

Activities
• Limited conversations with peers

Participation
• Not involved in afterschool activities
• Eats lunch alone

Environmental Factors
• 1st year in middle school
• 2 peers were trained with peer-mediated intervention technique

Personal Factors
• 13 year old
• 2 younger siblings
• Loves mathematics and music
• Dislikes changes in routine

SELECTED REFERENCES

Intervention Reviews & Quality of Life Considerations
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**Intervention Reviews & Quality of Life Considerations**


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