Evidence-Based Practice for Young Children with Challenging Behavior

Glen Dunlap, U. of South Florida
Phil Strain, U. of Colorado at Denver
Lee Kern, Lehigh University

www.challengingbehavior.org
Agenda

- Overview of National Center and Introduction to Syntheses of Evidence-based Practices – Glen
  - Brief overview of syntheses on service systems and service utilization
- Syntheses on Intervention Practices – Phil
- ABA for Prosocial Behavior – Phil
- Comprehensive Social-emotional Learning Programs – Phil
- Stimulant Medications - Lee
- Positive Behavior Support - Glen
- Questions/Discussion
Center for Evidence-Based Practice: Young Children with Challenging Behavior

* One National Center funded through a cooperative agreement by OSEP
GOALS

- Raise awareness of positive, evidence-based practices
- Increase implementation of positive, evidence-based practices
- Build enhanced data base of practical, positive, evidence-based practices
Management Team

- University of South Florida
  - Glen Dunlap, Principal Investigator
  - Lise Fox, co-Principal Investigator
- University of Colorado at Denver
  - Barbara Smith, co-Principal Investigator
  - Phillip Strain, co-Principal Investigator
Research, Training, and Dissemination Team

- **University of Kansas**
  - Judith Carta, Wayne Sailor, Ann Turnbull, Barbara Thompson, Eva Horn, Jean Ann Summers, Charles Greenwood

- **University of Illinois**
  - Mary Louise Hemmeter, Micki Ostrosky, Amy Santos

- **Tennessee Voices for Children**
  - Matt Timm, Diane Dixon

- **Lehigh University**
  - Lee Kern, George DuPaul

- **University of Florida**
  - Maureen Conroy

- **Pyramid Parent Training**
  - Ursula and DJ Markey

- **University of Colorado - Denver**
  - Phil Srain, Barbara Smith, Gail Joseph

- **University of South Florida**
  - Lise Fox, Glen Dunlap
Primary Dissemination Partners

- National Association for the Education of Young Children
- Division for Early Childhood, Council for Exceptional Children
- National Association of Child Care Resource and Referral Agencies
- National Head Start Association
- National Black Child Development Institute
- National Association on Bilingual Education
Advisory Group

- George Askew
- Donna Bryant
- Kathy Dennis
- Carl Dunst
- Mario Hernandez
- Roxane Kaufman
- Jane Knitzer
- Bruce Ramirez
- George Sugai
- Maria Synodi
- Mark Wolery
- Terry Harrison
Center Activities (Year 1)

- Identify evidence-based practices
  - Prepare major syntheses in three areas:
    - Systems of Service Delivery
    - Effective Practices for Young Children and Families
    - Service Utilization
- Develop materials and implement strategies to impact personnel preparation
Center Activities (Year 1) - 2

- Develop partnerships with national organizations and other dissemination networks to conduct widespread campaign of awareness
- Develop and finalize research agenda based on syntheses and input from stakeholders
- Establish national Advisory Group
Center Activities (Years 2-5)

- Disseminate information to enhance awareness and implementation of evidence-based practices for young children and families affected by challenging behavior

- Agreements with state and national organizations for training and dissemination
- Web site
- Press releases
- Articles in multiple formats
- Materials for pre- and in-service training
Center Activities (Years 2-5)

Implement a national program of research to address critical issues for young children and families affected by challenging behavior, including:

- Longitudinal, multi-site study to investigate relative and interactive effects of ecological and intervention variables
- Studies on direct services and interventions
- Studies on administrative operations and systems variables
- Studies on personnel preparation and utilization
Overall Purpose of the Center

To improve the lives and futures of young children and their families by:

1. Building a more unified and widespread awareness of positive, evidence-based practices,
2. Enhancing the capacity of families, educators, and other professionals to implement evidence-based practices, and
3. Adding to the data base of evidence-based practices that are incorporated in the comprehensive service delivery system.
Center for Evidence-Based Practice: Young Children with Challenging Behavior

Syntheses of Existing Knowledge
Center for Evidence-Based Practice: Young Children with Challenging Behavior

- Syntheses of Evidence Conducted in the Following Areas:
  - Service Utilization (Pathways to Service Utilization)
  - Systems of Service Delivery
  - Intervention Practices
Definition of Challenging Behavior

Any repeated pattern of behavior that interferes with or is at risk of interfering with optimal learning or engagement in pro-social interactions with peers and adults.
General Procedures

- Literature reviews of primary and secondary sources using data bases in medicine, psychology, child development, education, etc.
- Interviews with authorities in these fields
- Development of draft document with summary statements
- Review of document by authorities in relevant disciplines
- Revise and submit for formal peer review
- (Syntheses are dynamic projects)
Center for Evidence-Based Practice: Young Children with Challenging Behavior

Synthesis of Effective Interventions
Level of Confidence
Indicators

- Evidence of treatment fidelity
- Evidence for treatment generalization
- Evidence for treatment maintenance
- Evidence for social validity of outcomes
- Evidence for acceptability of intervention
- Evidence for replication across investigators
Level of Confidence Indicators

- Evidence of replication across clinical groups
- Evidence of replication across ethnic/racially diverse groups
- Evidence of replication across settings
- High Confidence – meets 7 or more indicators
- Medium Confidence – meets 4-6 indicators
- Low Confidence – meets less than 4 indicators
Applied Behavior Analysis Interventions to Increase Prosocial Behavior –

1. Five general categories of intervention were identified

   a) Teacher Prompting and Praise
   b) Peer-mediated Intervention (highest confidence)
   c) Group Contingencies
   d) Correspondence Training
   e) Affection Training Procedures
Applied Behavior Analysis Interventions to Increase Prosocial Behavior –

2. Individualization for each child is critical to success (reinforcers used, language level, preferences for certain materials or toys)

3. Except for peer-mediated strategies, the long-term efficacy is unknown

4. No reported negative side-effects and some free effects (spillover of reinforcement, increased social skillfulness and better attitudes by typical children)

5. Effects not dependent on beginning skill level or disability status
Comprehensive Social Emotional Learning Programs: Criteria for Inclusion

- Focused on fostering social emotional skills and/or decreasing problem behavior
- Targeted children under age 6
- Children were intervention foci
- Manualized curriculum
Methods

- Searched data bases (PsychInfo, ERIC, Medline)
- Reviewed previous comprehensive review papers and government reports
- Reviewed early childhood education websites for recommended curricula
Methods

- Reviewed all published curriculum efficacy studies
- Contacted all program developers
- Evaluated studies utilizing established “level of confidence” criteria
- Assigned each curriculum a confidence rating
Results

- Identified 8 comprehensive social emotional curricula
- Identified 2 promising programs
<table>
<thead>
<tr>
<th>Program Name</th>
<th>First Author</th>
<th>Treatment Fidelity</th>
<th>Treatment Generalization</th>
<th>Treatment Maintenance</th>
<th>Social Validity of Outcomes</th>
<th>Acceptability of Interventions</th>
<th>Replication across Investigators</th>
<th>Replication across Clinical Groups</th>
<th>Evidence across Ethnically Diverse Groups</th>
<th>Replication across Settings</th>
<th>Level of Evidence</th>
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</thead>
<tbody>
<tr>
<td>Social-emotional intervention for at-risk 4 year olds</td>
<td>Denham</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Self-Determination Curriculum</td>
<td>Serna</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>✓</td>
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<tr>
<td>PALS: Developing Social Skills Through Language</td>
<td>Vaughn</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
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<tr>
<td>DARE to be You</td>
<td>Miller-Heyl</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>ICPS</td>
<td>Shure</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
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<tr>
<td>Al’s Pals: Kids Making Healthy Choices</td>
<td>Geller</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>Medium</td>
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<tr>
<td>The Incredible Years: Dinosaur School</td>
<td>Webster-Stratton</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>High</td>
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<tr>
<td>First Steps</td>
<td>Walker</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>In progress</td>
<td></td>
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</table>
Highest Rated

- First Steps to Success
- Incredible Years: Dinosaur School
Promising Programs

- PATHS: Promoting Alternative Thinking Strategies
- Second Step Violence Prevention Program
Coming of Age: Stimulant Medication Use with Preschool-Aged Children

Lee Kern, George DuPaul
Lehigh University
John VanBrakle
Lehigh Valley Hospital
Presence of Behavioral Characteristics of ADHD in Preschool-Aged Children

- 2-5.7% of preschool aged children receive diagnoses of ADHD
  - (Lavigne et al., 1996; Keenan et al., 1997)

- Symptoms continue in elementary school for approximately 50%
  - (Campbell & Ewing,
Use of Stimulant Medication in Preschool Aged Children

- 94% of prescriptions for children are off-label
- MHP among three most commonly prescribed medications for children under age 6 (Zito et al., 2000)
- National Disease and Therapeutic Index reported 400,000 prescriptions of MHP for children under 6 (IMS America, 1995)
Use of Stimulant Medication in Preschool Aged Children

- Michigan Medicaid found 60% of children 3 years or younger diagnosed with ADHD receive stimulants (Coyle, 2000)
  - 50% receive 2 or more medications
  - Only 25% receive psychological services
- White House listed MHP as highest priority medication needing further safety and efficacy research for use in pediatric population
Issues with Use of Stimulant Among Preschool-Age Children

Dopamine transmitter system involved in MPH response in adults is in state of development in preschool-aged children (Volkow et al., 1998)

- MPH studies did not include preschoolers, therefore nothing known about safety or dose range
- Lack of support for biochemical or physical basis for ADHD
- Diagnostic difficulties in preschool-age children
Purpose of Review

To determine the level of evidence supporting the effectiveness of stimulant medications with preschool age children
Literature Review: Inclusion Criteria

- Computer searches (Medline, Psychlit, ERIC), ancestral searches
- Descriptors: medication related, child related, behavior related, disability related
- Articles published between 1975-2001
- Peer reviewed publications
- Preschool age children
Criteria Used to Determine Level of Evidence

1. Evidence for treatment fidelity
2. Evidence for treatment generalization
3. Evidence for maintenance
4. Evidence for social validity
5. Evidence for acceptability
Criteria Used to Determine Level of Evidence

6. Evidence for replication across investigative teams
7. Evidence for replication across gender and ethnically/racially diverse groups
8. Evidence for replication across settings
9. Evidence for naïve evaluation
10. Evidence for evaluation of side effects
Findings

- 16 studies identified meeting inclusion criteria
- 247 participants (range, 1-59)
- 20 additional participants served as controls
- Age range of participant: 2.5 to 6 years
Overall Findings

- Approximately 50% of participants showed a positive response to stimulant medication
- Behaviors showing improvement included decreases in off-task and motor activity and increases in compliance; Lab studies indicated increases in sustained attention and impulse control
- In general, significant improvements more likely with higher dosage
- Of the studies that measured side effects, they were noted in approximately 45% of participants (10% experienced severe side effects)
Level of Evidence

1. Treatment fidelity: assessed in 3 of 16 studies
2. Treatment generalization:
<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Studies (Total=16)</th>
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<tbody>
<tr>
<td>1. Treatment Fidelity</td>
<td>3</td>
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<tr>
<td>2. Treatment Generalization</td>
<td>13</td>
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<tr>
<td>3. Maintenance</td>
<td>4</td>
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<tr>
<td>4. Social validity</td>
<td>2</td>
</tr>
<tr>
<td>5. Acceptability</td>
<td>1</td>
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# Level of Evidence

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Studies (Total=16)</th>
</tr>
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<tbody>
<tr>
<td>6. Replication: investigative teams</td>
<td>14</td>
</tr>
<tr>
<td>7. Replication: gender, ethnic/racial groups</td>
<td>14</td>
</tr>
<tr>
<td>8. Replication: settings</td>
<td>16</td>
</tr>
<tr>
<td>9. Naïve evaluation</td>
<td>13</td>
</tr>
<tr>
<td>10. Side effects</td>
<td>13</td>
</tr>
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# Overall Level of Evidence

<table>
<thead>
<tr>
<th>OVERALL RATING</th>
<th>NUMBER OF STUDIES</th>
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<tbody>
<tr>
<td>High</td>
<td>0</td>
</tr>
<tr>
<td>(criteria met in 7-10 categories)</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>5</td>
</tr>
<tr>
<td>(criteria met in 4-6 categories)</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>11</td>
</tr>
<tr>
<td>(criteria met in less than 5 categories)</td>
<td></td>
</tr>
</tbody>
</table>
Research Limitations/Concerns

1. No direct observations have been conducted in home or typical preschool settings
2. Few behaviors evaluated
3. Most participants Caucasian, middle-class, males
4. Failure to assess treatment fidelity
5. Limited duration of evaluation
6. High rates of side effects
7. Lack of social validity/consumer satisfaction data
Center for Evidence-Based Practice:
Young Children with Challenging Behavior

Synthesis of Knowledge on:
Positive Behavior Support for
Young Children with Challenging Behaviors

Glen Dunlap & Maureen Conroy
PBS Categories

- Functional (Behavioral) Assessment and Assessment-based Interventions
- Functional Communication Training
- Self-Management
- Choice Making
Functional Assessment and Assessment-based Interventions

- High Confidence Rating
- A great deal of data exist, across settings and investigators
- Very clear and consistent effects for preventing and resolving challenging behaviors
- Almost all of the data are with children above 3 years of age
Medium Confidence Rating

While the data are strong and the effects have been replicated across many participants, there are relatively few studies with children under the age of 6.

Few studies with measures of fidelity or generality.
Self-Management

*Medium Confidence Rating*

- All of the data are with children above 3 years of age (self-management is not likely to be relevant for younger children)

- Data that exist are strong, but little evidence of replicability or application across many different population groups
Choice Making

- *Low confidence rating*

  Though the existing data are strong, and the rationale is clear, there have been few studies conducted with children under the age of 6

- Little evidence of social validity, acceptability, fidelity, and use with diverse populations
There is very good support for PBS as an intervention approach for young children with challenging behaviors.

However, for some particular categories of PBS interventions, the existing data are still few.

It is expected that additional data will increase the confidence ratings, however some procedures may still have limited relevance for very young children.
The Ending

Questions?
Discussion?
Thanks very much.....