Workshop: School-Based Behavioral and Academic Strategies for Students with ADHD

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Agenda

- Overview of school-based interventions
- Key concepts for developing school-based intervention plan
- Examples of school-based interventions using multiple mediators
- Small group discussion of case examples
- Large group discussion of small group activities
- Progress monitoring & data-based decision making
- Need for special education and/or educational accommodations
- Wrap-up and Q&A
Most Common Interventions for Children with ADHD

- Psychotropic Medication (e.g., CNS stimulants such as methylphenidate)
- Home-based contingency management (behavioral parent training)
- School-based contingency management interventions (e.g., token reinforcement)
- Academic intervention/tutoring
- Daily report card or school-home notes
Problems with Currently Available Research Literature

- Limited data on school-based interventions in gen. ed. settings
- “One size fits all” approach is typical
- Emphasis on reduction of disruptive behavior rather than improvement in social behavior or academic skills
- Few studies of adolescents
- Focus on short-term outcomes & limited data on generalization of effects
School-based Interventions: Key Concepts

- Balanced “game plan”
- Use multiple mediators (not just reliance on classroom teacher)
- Individualize intervention plan based on assessment data (e.g., functional assessment)
Balanced Game Plan for Intervention

- Proactive (antecedent-based) strategies to prevent challenging behavior
- Instructive strategies to directly address skill deficits in academic and/or social functioning
- Motivational (consequence-based) strategies to encourage appropriate behavior
School-Based Interventions for ADHD

- Manipulating Antecedents (Proactive)
  - Post Rules
  - Workload Adjustment
  - Providing Choices
School-Based Interventions for ADHD

- Instructive Strategies
  - Direct instruction
  - Peer tutoring
  - Organizational/study skills training
School-Based Interventions for ADHD (cont.)

- Manipulating Consequences (Reactive)
  - Token Reinforcement
  - Verbal Reprimands
  - Response Cost
  - Time Out from Positive Reinforcement
  - Self-Management
Possible Mediators for School-Based Interventions (DuPaul & Power, 2000)

- Teacher-mediated
  - Instructional strategies; Token reinforcement
- Parent-mediated
  - Parent tutoring; Home-based reinforcement
- Peer-mediated
  - Classwide peer tutoring
- Computer-assisted
  - Drill-and-practice
- Self-mediated
  - Self-monitoring; Self-management
Design Interventions Based on Functional Assessment

- **Descriptive analysis**
  - Identify antecedents, consequences, sequential conditions
  - Direct observation, teacher interview, parent interview, student interview

- **Experimental Analysis**
  - Develop hypotheses related to function of behavior
  - Test hypotheses using direct observation

- Develop intervention plan based on results of experimental analyses
Possible Functions of ADHD Behavior

- Avoid/escape effortful tasks
- Obtain peer attention
- Obtain teacher attention
- Obtain tangible object
- Sensory stimulation
Link Interventions to Behavioral Function

- Avoid/escape effortful tasks
  - Increase stimulation value of task and/or provide brief “attention breaks”
- Obtain peer attention
  - Provide peer attention following appropriate behavior (e.g., peer tutoring)
- Obtain teacher attention
  - Provide attention following appropriate behavior while ignoring inappropriate behavior (or time out from positive reinforcement)
Part 2 of 4
Examples of School-Based Strategies Using Multiple Mediators
Teachers/School Personnel as Mediators
TEACHING TECHNIQUES TO PREVENT BEHAVIOR PROBLEMS

- Remind students of rules
- Maintain eye contact with students
- Remind students about expected behaviors
- Circulate thru classroom to monitor/provide feedback
- Use nonverbal cues to redirect
- Maintain brisk pace of instruction
- Insure understanding of activities
- Manage transitions in well-organized manner
- Communicate expectations about use of class time

See Paine et al. (1983)
TOKEN REINFORCEMENT

- Establish behavioral or academic goals
- Choose several target situations
- Break situation (task) into smaller units
- Tokens (points, stickers) provided immediately
- Tokens turned in for privileges later in day or week
- Factors to consider:
  - Practicality for teachers
  - What to use for rewards
  - “Satiation” effect
  - Expansion to additional situations
  - Gradual “weaning” process
  - Reactions of other students
“DEAD PERSON’S RULE”
(Lindsley, 1991)

- If a dead person can do it, it’s not a good target behavior for intervention
- Examples: sit still, stay on-task, don’t call out, don’t fight
- Appropriate target behaviors involve active responding
- Examples: completion of tasks, accuracy on work, participating in class discussions, getting along with others
RESPONSE COST

- Removal of token reinforcement following inappropriate behavior and/or rule violation
- Effective in reducing disruptive behavior & may result in better maintained behavior when intervention is faded
- Attention training system video

Pfiffner & O'Leary, 1987; Rapport et al., 1982
Teachers and Parents as Mediators
Organizational and Study Skills Training

- Challenging Horizons Program (Evans et al., 2004) [http://www.oucirs.org](http://www.oucirs.org)
- Homework, Organization, and Planning Skills (HOPS) Interventions (Langberg, 2011)
School based treatment program for middle school youth with ADHD
  – After-school model
  – 3 days per week throughout school year

Work with parents, teachers, community providers
  – Social skills
  – Study skills
  – Homework management
CHP: Academic Interventions
http://www.oucirs.org

- Homework Management Plan
- Organization skills
- Taking Notes
- Study Skills
- Written language
CHP: Organizational Skills

Assignment notebook checking

- Methods
  - Check assignment notebook and compare to “gold standard”
  - Record percentage
  - Provide contingencies
  - Report to parents
  - Teacher initials
  - Don’t facilitate - If we only make task of tracking assignments easier (e.g., teacher writes them down for a child) then we remove incentives for independence
CHP: Organizational Skills

- Notebooks (binders), Book bags, & Lockers
  - Develop a checklist
  - Dump, clean, & sort
  - Provide contingencies
    - Begin with daily checks
    - Taper towards weekly random checks
    - Always accompany a check with fixing errors
CHP: Organizational Skills

- Example checklist for Binder
  - Section for each class student is taking
  - HW folder in front of binder with HW to be completed on left side & HW to be turned in on right side
  - All folders & papers secured by three-rings & no loose papers or folders
Note-taking process
- Format
- Present information, think aloud, and coach notes
- Begin to ask class to help with think aloud and discuss main ideas & details
- Fade prompts

Notes
- Check quality of notes
- Main ideas harder than details
CHP: Note-Taking

- Generalization
  - This is the hardest part
  - Obstacles to independently taking notes in class
    - Feeling different
    - Recognizing opportunities
    - Don’t feel like it
  - Teacher facilitation
Parents require:
- Amount of time doing academic work
- Quality products at end of time

Details
- Amount of time is negotiated based on grades
- If no school work brought home, parents assign work
- Home privileges contingent on completion of time
CHP: Homework Management

- **After-school program (8 weeks)**
  - Counselors check accuracy of HW assignment recording & teacher initialing
  - Weekly check with teachers to prevent forging
  - 55-min group intervention time including HW completion, math worksheets, outlining chapters in texts or recreation time
  - HW completed first before activities
  - Recreation time based on earned points

- **Two 1-hr parent sessions in evening**
  - Description of after-school program
  - Transfer of forms and tracking to parents
CHP Outcomes

- Some initial promising group outcome data
  - Improvements in meeting organizational skills criteria, HW accuracy, & academic performance (e.g., Langberg et al., 2007)

- Individuals vary greatly in response
  - Some students show mastery within days
  - Others display “honeymoon” followed by decline and then gradual improvement
  - Still others show gradual improvement across months
  - Some show no improvement

- Important to persist past the low points that characterize the great variability in behavior and performance associated with ADHD particularly in adolescence
Other Homework Programs

- Homework Success for Children with ADHD (Power, Karustis, & Habboushe, 2001)
- Meyer & Kelley, 2007
Homework & Study Skills Intervention (Meyer & Kelley, 2007)

- $N = 42$ students (36 boys, 6 girls) in 6th to 8th grade all of whom had ADHD & homework problems
- Intervention included self-monitoring of HW completion and training in SQ4R method (for social studies reading comprehension & test preparation)
  - Survey titles & headings prior to reading
  - Formulate Questions
  - Read to find answers to questions
  - Recite answers to questions in own words
  - Write answers to questions
  - Review text & question answers
- Training held over 1-2 sessions
Homework & Study Skills Intervention (Meyer & Kelley, 2007)

- Parents prompted teen to begin HW, organize materials, & complete monitoring checklists daily.
- Parents did not participate in completing checklist or critiquing accuracy; provided contingencies for completion of HW and monitoring checklists (80%).
- Results indicated significant reduction in HW problems and improvements in classroom preparedness as reported by teachers relative to a wait-list control group.
- Improvements maintained at 4-wk follow-up.
- Parents and students reported high levels of satisfaction.
<table>
<thead>
<tr>
<th>CHECKLIST BEHAVIORS</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I turned in my homework today</td>
<td></td>
<td></td>
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<tr>
<td>2. I wrote down my HW assignments &amp; obtained teacher initials</td>
<td></td>
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<tr>
<td>3. I brought home materials needed to do HW</td>
<td></td>
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<tr>
<td>4. I completed all homework</td>
<td></td>
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<tr>
<td>5. I checked my work</td>
<td></td>
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<tr>
<td>6. I began my HW within 30 min of arriving home</td>
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<tr>
<td>7. I completed my HW in my quiet area</td>
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<tr>
<td>8. I completed the steps in my SQ4R study strategy</td>
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<tr>
<td>9. I organized my book bag &amp; notebook so that I can find and turn in assignments tomorrow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. I needed parent reminders to complete HW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. I needed parent reminders complete checklist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. I needed parent reminders to organize</td>
<td></td>
<td></td>
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<tr>
<td>13. I received my reward for completing form</td>
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</tr>
</tbody>
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From Meyer & Kelley (2007)
COMPONENTS OF EFFECTIVE HOME-SCHOOL COMMUNICATION PROGRAM

- Daily/weekly goals specified in a positive manner
- Both academic and behavioral goals included
- Small number of goals at a time
- Quantitative feedback about performance
- Feedback provided by subject or class period
- Communication is made on a regular basis (either daily or weekly)
- Home-based contingencies tied to performance (both short-term and long-term)
### Daily Report Card Example

#### Behaviors to be rated:

<table>
<thead>
<tr>
<th>Class participation</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classwork performance</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Follows class rules</td>
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<tr>
<td>Gets along well w/others</td>
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<td>Quality of HW</td>
<td></td>
<td></td>
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<tr>
<td>Teacher’s initials</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Comments on back</td>
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<td></td>
</tr>
</tbody>
</table>

Class Periods/Subjects

Barkley & Murphy (2006)
Examples of Daily Report Card Targets

- **Academic**
  - Returns completed homework
  - Stays on task with X or fewer reminders
  - Completes assignments in specified amount of time
  - Completes assignments with X% accuracy
  - Begins work with X or fewer reminders
  - Organized/prepared/on time for class
  - Answers/responds to teacher questions
Examples of Daily Report Card Targets

■ Social behavior
  – Follows directions with X or fewer reminders
  – Respectful to teacher/accepts feedback appropriately
  – Raises hand with X or fewer reminders
  – When upset, will display appropriate coping behaviors
  – Has X or fewer rule violations
  – Appropriate behavior in specials/cafeteria
Parental cooperation solicited prior to implementation
- Student input into goals and contingencies

Goals/procedures modified as necessary

DRC associated with reduction in rule violations and greater academic productivity (Vannest et al., 2010)

More information:
http://casgroup.fiu.edu/pages/docs/1401/1321381613_How_To_Establish_a_School_DRC.pdf
http://www.directbehaviorratings.com
Peers as Mediators
CLASSWIDE PEER TUTORING

- Divide classroom into pairs
- Provide academic scripts
- Take turns tutoring
- Immediate feedback & error correction
- Teacher monitors progress & provides bonus points
- Points tallied & progress charted
- Pairs change weekly
- See video example

Greenwood et al. (2010)
CWPT Effects on ADHD (DuPaul et al., 1998)

- 18 children w/ADHD & 10 comparison students (1st to 5th grade gen. ed.)
- CWPT increased active engagement w/reduction of off-task behavior
- 50% of ADHD improved academically
- Positive effects for comparison peers
- High rates of student and teacher satisfaction
Computer Technology as Mediator
Computer-Assisted Instruction

1. Delivery of instruction (e.g., aid to acquisition of new material)
2. Drill-and-practice (e.g., fluency and retention of already-instructed material)

May be effective for both purposes with more evidence for drill-and-practice

Effects due to higher stimulation value of material, self-paced, & provision of frequent, immediate feedback?
CAI: Controlled Case Study
(Ota & DuPaul, 2002)

- 3 students with ADHD in 4th-6th grade at a private school for children with LD
- All with math skill acquisition difficulty
- All three students receiving medication
- Math Blaster software introduced sequentially across students while assessing on-task and math skills (CBA)
- Gains in on-task behavior and slope of math skill acquisition (for 2 out of 3)
CAI: Replication in Public School Setting (Mautone, DuPaul, & Jitendra, 2005)

- 3 2nd through 4th grade children in general education or special education classrooms
- All met research criteria for ADHD & none being treated with psychostimulants
- Baseline = typical math instruction & work
- CAI = Math Blaster software 15 min X 3 days per week
- Multiple baseline across participants design
- Math fluency, direct observations of behavior, & consumer satisfaction ratings were measures
Part 3 of 4
Target Student as Mediator
Self-monitoring of organizational skills

- Adolescents with ADHD typically have difficulties in class prep. and HW
- For some students, problems related to poor attention to detail and low motivation to complete mundane tasks
- Possible students can be trained to monitor own behaviors (e.g., being ready for class)
Self-monitoring of org. skills: Controlled case study (Gureasko, DuPaul, & White, 2006)

- Three 7th grade students with ADHD
- All had significant problems being prepared for class
- Checklist of preparatory behaviors developed with teachers (% steps)
- Training in self-monitoring (4 days)
- Self-monitoring followed by fading
- Gains in organizational skills maintained without treatment
- Replicated with additional 6 middle school students and extended effects to homework performance (Gureasko-Moore et al., 2007)
SELF-MANAGEMENT PROGRAM

- Initially incorporates external and internal evaluation but works toward complete self-monitoring and evaluation
- Teacher and student independently “grade” student performance regarding behavior and academics for specified work period
  - Established performance criteria
  - Points earned for performance
  - Bonus points for “matching” ratings
  - Penalties for “inflated” ratings
  - Points turned in for school based or home based privileges

Rhode, Morgan, & Young, 1983
Sample Self-Management Criteria

★ 5 = Excellent
   - Followed all rules for entire interval; Work 100% correct

★ 4 = Very Good
   - Minor infraction of rules; Work at least 90% correct

★ 3 = Average
   - No serious rule offenses; Work at least 80% correct

★ 2 = Below Average
   - Broke rules to some degree: Work 60 to 80% correct

★ 1 = Poor
   - Broke rules almost entire period; Work 0 to 60% correct

★ 0 = Unacceptable
   - Broke rules entire period; No work completed

Rhode, Morgan, & Young (1983)
SELF-MANAGEMENT (cont.)

- Gradual weaning from external ratings
  - Longer work periods to be rated
  - Periodic, random “matching” challenges
  - Eventual reliance on self-ratings only

Factors to consider:
- Practical constraints
- “Drift” of student ratings
- Prepare student using external system
Group Discussion Exercise: Case Examples

For each case:

- Identify 3 goals for school-based intervention
- Design balanced intervention plan with multiple mediators
- Develop plan for tx evaluation
Part 4 of 4
INTERVENTION EVALUATION

- Periodic collection of assessment data (e.g., teacher ratings, observations, academic performance measures)
- Consumer satisfaction ratings
- Comparison with normal peers
- Revision of treatment plan based on assessment data
Data-Based Decision Making--
Problem Identification
(Kratochwill & Bergan, 1990; Witt, Daly, & Noell, 2000)

- Teacher Education on ADHD
- Academic area(s) of concern
- Identify antecedent conditions
- Child’s typical response to antecedents
- Identify consequent conditions
- Patterns to academic behavior problems?
- Goal-setting and prioritizing
- Specifics of lesson to be observed for academic assessment
- Agree on additional observational procedures based on data-driven hypotheses
Data-based Decision Making - Academic Assessment

- Classroom observation
  - Information about teacher routine that occurs
  - Student, teacher, and peer behaviors
- Review student work products in comparison to peers
- Basic skills assessment (CBA data)
Data-Based Decision Making: Problem Analysis

- Determine specifics of intervention plan based on deficits & hypotheses
- Consultant may train the teacher and/or the student(s) on intervention implementation
- Progress monitoring every week; data collected by teacher and/or consultant
- Treatment integrity and feedback biweekly
Data-Based Decision Making: Treatment Evaluation

- Approximately 4 weeks into intervention
- Use visual analysis to determine if:
  - mastery
  - no progress
  - adequate progress
  - inadequate progress
  - motivation problem
- Determine next steps (i.e., leave plan in place, simplify, redefine goals, improve antecedents, retrain)
School Services for Students with ADHD

- Qualifies for special education on basis of having another disability (e.g., LD)
- Qualifies for special education on basis of “other health impairment”
- Qualifies for accommodations on basis of Section 504
ADHD as “Other Health Impaired”

- Chronic or acute health problem that results in limited alertness?
- Adversely affects educational performance?
- Are special education and/or related services necessary?
Accommodations for ADHD based on Section 504

- Physical or mental impairment which substantially limits one or more major life activities
- Learning, speaking, walking, seeing, hearing, or caring for one’s self
- Is the degree of impairment substantial?
Relation of IDEA & Section 504
Interventions for Students with ADHD: Guiding Principles

- Stimulant medication is effective treatment for reducing ADHD symptoms
- Psychosocial (behavioral) treatments at home & school address impairments in functioning in addition to symptomatic behaviors
- Intervention design linked directly to assessment data (e.g., functional assessment)
- Consultative problem-solving process integral to intervention design
- Intervene at “point of performance”
- Go beyond “train and hope”
- Intervention evolves based on ongoing assessment
Guiding Principles for Intervention (cont.)

- All behavior serves a purpose; intervention should lead to functionally equivalent behavior.
- Aim for balance among proactive, instructive, and reactive strategies.
- Use multiple mediators to deliver intervention.
- Typically no single intervention is sufficient; multi-component and multi-setting intervention is presumed more effective.
For more information, please go to the main website and browse for related videos on this topic or check out our additional resources.

**Additional Resources**

**Online resources:**
1. Center for Children and Families website: http://ccf.fiu.edu
2. Challenging Horizons Program : http://www.oucirs.org

**Books:**

**Peer-reviewed Journal Articles:**

**Manuals:**