

### INTRODUCTION

Children who engage in antisocial, aggressive behavior in early childhood account for much of adolescent criminal behavior, and the stability of problems with antisocial and aggressive behavior is remarkable (Coe & Dodge, 1998). It is thus not surprising that the issues of antisocial and other disruptive behavior in schools have been identified as a primary area of concern among researchers and policymakers (USDHHS, 1999).

Social competency interventions have demonstrated difficulties with magnitude of effects, generalizability, and long-term effectiveness of results (Pfliffer et al., 2000). These limitations have led some to propose significant modifications to social skills interventions, suggesting the integration of comprehensive behavioral management strategies to motivate and maintain behavior change.

In a national survey of school-based practices for of disruptive behavior (Gottfredson & Gottfredson, 2001), regular education teachers reported common use of behavioral interventions. Furthermore, programs that address the needs of several or all students are more desirable as first line intervention than programs targeted for single students, as they are more efficient (Horner et al. 2001) and targeted programs are useful adjuncts to first-line programs (Walker, Ramsey & Gresham, 2003). Regarding teachers' typical use of behavioral interventions (Fabiano et al. in preparation), 94% reported using low-intensity behavioral procedures such as praise and reprimands, and 58% reported using higher-intensity procedures (e.g., token economies) at least some of the time. These reports indicate that behavioral programs are frequently used in classroom settings.

Despite their widespread use, however, there are relatively few large-scale randomized trials of universal and targeted behavioral programs in school settings. The present study is a randomized trial of a school-wide intervention (Pelham et al., 2005; Waschbusch, Pelham, & Massetti, 2005) as part of a multisite study funded through the Social and Character Development (SACD) program by the Institute of Education Sciences and the Centers for Disease Control. The intervention covers a 3-year period. This poster presents partial data from the first year of intervention.

### THE ACADEMIC AND BEHAVIORAL COMPETENCIES (ABC) PROGRAM

- School-wide program with multiple components: basic intervention for universal level
- Additional intervention for identified children
- Standard framework adapted at each school
- Training for all teachers on classroom management
- Behavioral consultants assigned to each school to facilitate implementation and coordinate behavioral programming

#### Universal Components

- School-wide behavior management
  - Teacher training in classroom management strategies
    - Initial inservice training
    - Monthly observations with consultant, feedback and problem-solving
  - School-wide rules
  - Tracking of rule-following behavior
    - Point systems, color charts
  - Consequences for rule following
    - Daily Good News notes, Fun Friday, Honor Roll
  - Homework components
- School-wide teacher-led social skills training
  - Reinforced through classroom lottery system
- Peer Tutoring for reading: Peer Assisted Learning Strategies (Fuchs & Fuchs, 2005)
- Peer Mediation program for conflict resolution (Cunningham et al., 1998)

#### Targeted/Identified Components

- Individual consultation with behavioral consultants
- Individualized programming, Daily Report Cards (download at [ccf.buffalo.edu](http://ccf.buffalo.edu) on the WWW)
- After-school program for disruptive children in schools
- Parenting workshops

#### Fidelity Assessment and Analysis

Comprehensive model for assessing fidelity, implementation of intervention program, evaluating relationship between fidelity, school and teacher characteristics, and outcomes at school and student level

### METHODOLOGY

- 14 Schools (7 Intervention, 7 Comparison)
- 12 Urban, high-risk schools (Pre-Kindergarten to grade 8) and two suburban schools
- Matched and randomly assigned to Intervention (ABC Program) or Comparison (no intervention, school-as usual) conditions
- 1039 children across first and third grades and 235 teachers from K to 5 in the 14 schools

Poster and additional information available at

[ccf.buffalo.edu](http://ccf.buffalo.edu)

Or for reprints, references, or more information, please contact:  
[pelham@buffalo.edu](mailto:pelham@buffalo.edu), [gmm23@buffalo.edu](mailto:gmm23@buffalo.edu), or [dw35@buffalo.edu](mailto:dw35@buffalo.edu)

### DATA COLLECTION

- Primary participants: all teachers in k-5; students in grades 1 and 3 during Year 1, their teachers, and their parents (parent ratings not reported herein).
- First and third grade students in Year 1 assessed every year for 3 years
- Schools followed for 3 years. Intervention schools participate in ABC Program for 3 years.
- Year 1 Report (this poster): Spring assessments only for Child outcomes (post only); baseline (previous year's practices) and Spring for Teacher outcomes
- Measures:
  - **Teacher Report on Classroom and School**
    - Collected from all teachers (grades K-5)
    - Measures of teacher report of classroom management: use (e.g., see Baseline Characteristics, aggregated over techniques of management); effectiveness (rated for each management technique and aggregated across); impact (on the classroom, ease of use); school climate; and time expended.
  - **Teacher Report on Student**
    - Collected from teachers of children in grades 1 and 3 in year 1
    - Measures of child disruptive behavior on the IOWA Conners Rating Scale (Loney & Milich, 1982), peer interactions on the Dishon Teacher Rating Scale (Dishon, 1990), the Impairment Rating Scale (Fabiano et al. 2006), and improvement in multiple domains of functioning (Pelham et al., 2000).
    - Multisite Battery Measures (Teacher and Parent Ratings) not reported herein

### RESEARCH QUESTIONS

- **Research Question #1:** Examine teacher-reported use, effectiveness, and impact of classroom management procedures, as well as effort involved.
- **Research Question #2:** Evaluate the impact of the ABC Program on children:
  - Improvement in adaptive and maladaptive functioning (teacher ratings of improvement in rule following, adult interactions, peer interactions, homework)
  - Inattentive/impulsive behavior and Oppositional/aggressive behavior (teacher IOWA Conners I/O and O/D scales)
  - Peer status (liking, disliking--Dishon teacher rating)
  - Impairment and need for services (teacher IRS)
- **Research Question #3:** Examine whether intervention interacts with age (grade 1 vs grade 3) and individual differences (level of I/O and O/D behaviors).

### ANALYSES and RESULTS

- Teacher-rated use, effectiveness, impact, and effort of the ABC Program:
  - Analyses were mixed model analyses with Pair\*Intervention, Time\*Pair\*Intervention and Teacher treated as random effects. Pair was initially included as a random effect but deleted because it was estimated to be close to zero. Fixed effects were Intervention, Time, Grade, and all possible interactions among these variables. For school climate and time/effort--both measured only at endpoint--Time was not included in the analyses.
  - Use of behavioral strategies: Intervention X Time (.025)--more improvement in use of behavioral strategies in intervention compared to comparison (effect size: .47 for Int and -.04 for comparison)
  - Effectiveness of behavioral strategies: Intervention X Time (.05)--greater improvement in effectiveness ratings in intervention compared to comparison (effect sizes: .47 for Int and -.07 for comparison)
  - Impact of the intervention package on the Classroom, Teaching, and Problem Behaviors: No effects of intervention
  - Impact on School Environment: No effects of intervention
  - Impact on Time spent in preparation and management: No Differences between intervention and Comparison Schools
- Impact of ABC Program on individual children:
  - Analyses were mixed model analyses with Pair, Pair\*Intervention, Teacher, and Child treated as random effects. For analyses of IOWA I/O and O/D, fixed effects were Intervention, Grade, and Gender and all possible interactions amongst them. For all other outcomes, I/O and O/D were added to the model (to investigate individual differences in level of I/O and O/D), as were all possible interactions.
  - Improvement Ratings: Intervention X Gender X Grade (.025)--except for first grade girls, children rated as more improved with intervention compared to comparison (effect sizes: gd 1 boys-.30; gd 3 boys-.20; gd 1 girls-.02; gd 3 girls-.37); Intervention X Grade X O/D (.05)--intervention-related improvement was far greater at low levels of O/D than at higher levels, especially in first grade.
  - Inattentive/impulsive, oppositional and aggressive behavior: No intervention effects.
  - Peer status: No effects of intervention
  - Impairment and need for services on IRS: Intervention X Gender X I/O (.05); Intervention X O/D (.00025); Intervention X I/O X O/D (.005)--all interactions suggest that children (especially boys) with relatively higher levels of O/D or I/O are rated by teachers in intervention schools as more impaired and more in need of services

### Baseline Characteristics of Students and Caregivers

	All Students and Caregivers	Intervention Group	Control Group	p-value
Gender (% male)	50.1	46.4	53.9	0.10
Race/ethnicity				0.01**
% White	32.5	26.2	38.7	
% Black	41.4	48.6	34.1	
% Hispanic	17.3	16.9	17.6	
Age (in years)	8.0	8.0	8.0	0.74
Caregiver's age (in years)	35.3	35.9	34.7	0.13
Caregiver's race/ethnicity				0.02**
% White	38.2	31.3	45.0	
% Black	41.3	46.7	35.9	
% Hispanic	14.9	15.4	14.3	
Caregiver's education				0.41
Did not complete high school	12.5	11.0	14.0	
High school graduate (or GED)	26.6	24.9	28.2	
Vocation, trade, or business school	5.1	5.3	4.9	
Some college	32.4	34.2	30.7	
Associate's degree	11.6	12.7	10.6	
Bachelor's degree	7.1	8.7	5.6	
Graduate education	4.4	2.7	6.1	
Caregiver's employment				0.29
Full-time	45.1	43.0	47.1	
Part-time	23.9	27.0	20.6	
Not employed	30.1	29.6	30.5	
Caregiver's marital status				0.23
Single	31.0	35.2	26.8	
Married	47.3	43.5	51.2	
Separated/divorced	14.1	12.7	15.5	
Living with someone	7.1	7.9	6.2	

### Baseline Characteristics of Teachers

	All Teachers	Intervention Group	Control Group	p-value
Gender (% male)	9.7	9.4	10.1	0.90
Race/ethnicity				0.33
White	80.1	73.2	86.9	
Black	10.6	13.0	8.1	
Hispanic	6.9	8.9	5.0	
Mean years teaching experience	12.3	12.7	11.9	0.63
Education				0.60
Bachelor's degree	23.0	24.0	22.0	
Master's degree	73.7	76.0	71.3	
<b>Sample Size</b>	<b>357</b>	<b>168</b>	<b>189</b>	

#### Percentage of Teachers who Report Using the Following Strategies at Baseline:

	All Teachers	Intervention Group	Control Group	p-value
Behavior management	93.4	98.6	88.2	0.03**
Good behavior notes sent home daily/weekly	78.2	92.6	63.9	0.00**
Peer mediation	36.0	36.9	35.1	0.84
Honor roll for positive behavior	60.0	75.5	44.6	0.00**
Time out	83.6	94.0	73.2	0.00**
Daily/weekly rewards for positive behavior	93.7	98.1	89.2	0.06*

### DISCUSSION

- The intervention produced an increase in the use of behavior management from baseline (previous school year) to end of first year (moderate effect size) vs no change in the comparison schools.
- The teachers in the intervention schools rated the behavior management program as more effective at endpoint compared to baseline (moderate effect size), compared to no change in the comparison school.
- The intervention took no more teacher time than did usual practice, despite the requirement to record daily rule violations for all students and to implement the other components.
- However, teachers did not rate the program as impacting students at the classroom level nor school climate.
- At the individual child level, teachers rated most children as improved in rule following, social behaviors, and interactions with adults/peers, but children with higher IOWA Conners scores show considerably less improvement; similarly, teachers did not rate children more positively on the IOWA Conners Scales or peer status (liking, disliking).
- There was no main effect of intervention on impairment and need for services. However, consistent with above, there were significant interactions such that children with higher I/O or O/D scores were rated by teachers in intervention schools as more impaired. Our post hoc interpretation of this paradoxical pattern is that the rule violation tracking procedures in the ABC program increased teacher awareness of the most problematic children. Apparently neither the school-wide program, which appeared to help the majority of children, nor the targeted interventions directed at problematic children, were sufficient to overcome this effect. The targeted component of the ABC program may need to become more intensive and systematic.
- Full impact of the ABC program is not expected until the third year of implementation, so year 2 and year 3 analyses, not yet conducted, may alter these results. Other measures (observations, achievement, school discipline) will be reported elsewhere.