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CBC in Rural Schools: Preliminary Results of a Randomized Trial¹

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Introduction

- Children who exhibit disruptive behavior often do so across multiple settings (e.g., home, school; Achenbach, McConaughy, & Howell, 1987) and are vulnerable to many negative outcomes, including low achievement scores and academic grades (Bub, McCartney, & Willett, 2007; Lopes, 2007), high school dropout (Vitaro, Brendgen, Larose, & Tremblay, 2005), and increased school suspensions (Reinke, Herman, Petras, & Ialongo, 2008).
- Family-school partnership interventions, which are grounded in ecological theory (Bronfenbrenner, 1986), are highly correlated with many positive outcomes for students, families, and teachers (Grolnick & Slowiaczek, 1994; Masten & Coatsworth, 1998). Experimental studies with families as collaborators have been found to improve students' behavioral functioning and decrease disruptive behaviors (Charlop-Christy, 2000; Israel, Solotar & Zimand, 1990).
- There is a lack of empirical research on family-school connections in rural settings (Prater et al., 1997), hindering our ability to understand the impact of family-school partnerships on rural schools, families, and students (Semke & Sheridan, 2012).
- Proportionally, a greater number of children living in rural communities experience mental health problems compared to children living in urban settings (Lenardson, Ziller, Lambert, Race & Yousefian, 2010).
- Families in rural communities are often poorly connected to school services due to challenges associated with geographic remoteness, poverty, inexperienced school staff and inadequate resources, scheduling, and parental education level (Brody, Stoneman, & Flor, 2005; Kushman & Barnhardt, 2001; Weiss & Correa, 1996).
- Rural parents interact with their children and teachers regarding school less often than parents in other geographic areas (Prater, Bermudez, & Owens, 1997).
- Teachers in rural schools are often required to extend their roles to meet students' behavioral needs (Roeser & Midgley, 1997), and report feeling ill-equipped to provide focused services to students with learning and behavior concerns (Monk, 2007).
- Parents and teachers are essential for meeting the needs of students in rural schools. Given this, cross-system interventions may be particularly beneficial for children, parents, and teachers in these communities (Semke & Sheridan, 2012).
- *Conjoint behavioral consultation* (CBC; Sheridan & Kratochwill, 2008) may address barriers and create meaningful partnerships between rural parents and teachers.
- Decades of CBC research has documented its positive effects for improving student behavioral, academic, and social-emotional functioning across demographically diverse samples (Sheridan et al., 2012; Sheridan, Clarke & Burt, 2008; Sheridan, Eagle & Doll, 2006).
- The efficacy of CBC in settings where specialized consultation services are sparse (i.e., rural schools), and where students, families and schools are characteristically distinctive, has not been explored.

Research Questions

1. What are the *preliminary* effects of CBC in rural communities on behavioral and social-emotional outcomes of students with or at risk of developing behavioral disorders?
2. What are the *preliminary* effects of CBC in rural communities on parent and teacher practices, relationships, engagement, and beliefs about family-school partnerships?

Method

Participants

- The present subsample is derived from the first two years of implementation of a four-year RCT.
- Ninety kindergarten through 3rd grade students and their parents ($n=90$) and teachers ($n=54$) from 20 schools in Midwestern rural areas participated (see Tables 1, 2, and 3).
 - Participating students were identified by teachers as having disruptive behavior concerns (e.g., aggression, non-compliance).
 - Screening for inclusion in the study was assessed using a two-gate procedure:
 - Teachers rank ordered their students from most disruptive to least disruptive and
 - Completed a researcher-developed scale of problem behavior severity, frequency and need for intervention (Glover, Sheridan, Garbacz, & Witte, 2005) for the top three ranked students in their class.
 - Students with Autism Spectrum Disorder were excluded from this study.
 - Teachers were randomly assigned to treatment and control groups and all students within a classroom were assigned accordingly.

Procedure

- CBC is a structured indirect form of support in which teachers and parents work together to promote adaptive behaviors and decrease disruptive behaviors.
- Within each CBC-assigned classroom, a consultant met with a teacher and parents of 1 to 3 students for CBC meetings via a 4-stage process operationalized by semi-structured *conjoint* interviews:
 - Needs Identification
 - Needs Analysis/Plan Development
 - Plan Implementation

- Plan Evaluation
- Control group participants received treatment as usual.

Measures

- Student measures include the Behavior Assessment Scale for Children, 2nd Edition (BASC-2; Reynolds & Kamphaus, 2004), and the Parent Daily Report (PDR; Chamberlain & Reid, 1987).
- Teacher measures include the Teacher Strategies Questionnaire (TSQ; Webster-Stratton, 2005), Parent Teacher Relationship Scale-Teacher Version (PTRS; Vickers & Minke, 1995), Teacher Participation in Problem Solving (TPPS; Sheridan, 2004), and Teacher Beliefs About Parent Involvement (TBAPI; Epstein, Salinas & Horsey, 1994).
- Parent Measures include the Alabama Parenting Questionnaire (APQ; Dadds, Maujean & Fraser, 2003), Parent Teacher Relationship Scale-Parent Version (PTRS; Vickers & Minke, 1995), Parent Participation in Problem Solving (PPPS; Sheridan, 2004), Parent Engagement in Consultation Scale (PECS; Sheridan et al., 2005), and Parent Efficacy for Helping the Child Succeed in School (PEHCSS; Hoover-Dempsey & Sandler, 2005; Walker, Wilkins, Dallaire, Sandler & Hoover-Dempsey, 2005).

Analysis Plan

- To analyze the effects of CBC:
 - Independent group *t*-tests assessed differences between treatment and control groups.
 - Repeated measures *t*-tests evaluated change in scores from pre- to post-test.
 - Effect sizes are reported as *d* and r^2 , respectively.

Results

- Results from these *very preliminary* analyses suggest promising effects of CBC for teachers, parents, and students in rural settings (see Tables 4 and 5).
- Significant group differences in favor of the CBC group and improvements over time for treatment group only are evident for teacher-reported BASC-2 scores on the behavioral symptoms index, parent and teacher communication, and parent engagement in consultation and participation in the problem solving process.
- For students, significant changes over time are evident for treatment but not control students with teachers' reporting decreases on BASC-2 scores of externalizing problems and school problems and improvements on scores of adaptive skills, as well as parents' reporting significant decreases in arguing, noncompliant, and tantrum behaviors at home.
- For parents, significant group differences are shown in favor of the treatment group, with the CBC parents reporting more positive involvement with their child, less use of corporal

punishment, and greater feelings of interpersonal connection with the teacher at post-test. Likewise, significant changes over time are evident for the CBC group only with the parents in the treatment group reporting decreased use of inconsistent discipline strategies and improvements in their self-efficacy for helping their children succeed in school.

- For teachers, significant group differences are apparent in favor of the treatment group, with the CBC teachers reporting more effective strategy use, greater participation in the problem-solving process, and stronger beliefs about the importance of parental involvement at post-test.

Discussion

- CBC appears promising in producing positive effects for students with behavioral challenges in rural schools. Consistent with ecological theory, the preliminary effects appear to extend beyond student outcomes to promote positive changes in beliefs and practices of the adults responsible for children's well-being.
- Preliminary findings add to the growing evidence base that CBC is an effective intervention for children, families and schools across different settings (e.g., rural, urban) and are consistent with previous research (Sheridan et al., 2012) that CBC has a positive effect on children's social skills and externalizing problems.
- Preliminary results highlight CBC's potential as an effective intervention for addressing the needs of parents and teachers in rural communities:
 - Teachers in the CBC condition reported greater use of effective strategies for addressing challenging student behavior.
 - Parents receiving CBC reported having a stronger connection with their children's teacher and also reported greater involvement in their children's education and greater self-efficacy for helping their child succeed in school.
- The unique challenges associated with service delivery in rural communities may be addressed through the partnership-building strategies used by CBC consultants:
 - Frequent contact, constructive problem solving, mutual input toward solutions, individual roles and responsibilities, and home-school communication may be important to increase trust and alter negative attitudes.
- Limitations of the current study require caution in interpreting results:
 - Data represent two years of a four-year randomized clinical trial. Full interpretation of results is not possible until data collection is complete and appropriate analytic methods employed.
 - Only significant findings are presented in the current study.
 - Results are limited to one rural region. This does not capture the variation in rural settings (e.g., agricultural rural).

- Intervention integrity was not included in these analyses.
- Future research is necessary to:
 - Continue to discern unique and specific characteristics of rural settings that impact the implementation of CBC and the mechanisms of CBC that address these characteristics.
 - Establish the factors in rural communities that influence the intervention integrity of CBC and intervention plan implementation.
 - Investigate moderation to determine the conditions under which CBC has its greatest effects.
 - Determine the application and efficacy of CBC in “authentic” practice contexts.

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Table 1
Student Demographics

		Total (n=90)	Experimental (n=58)	Control (n=32)
Mean (SD) Age		6.9 (1.19)	6.9 (1.2)	6.69 (1.18)
Disability Status		64%	66%	63%
<u>Grade Level</u>	K	28%	28%	28%
	1	21%	19%	25%
	2	30%	31%	28%
	3	21%	22%	19%
<u>Gender</u>	Male	82%	83%	81%
	Female	18%	17%	19%
<u>Ethnicity</u>	White non-Hispanic	91%	89%	94%
	African American	2%	2%	3%
	Hispanic/Latino	6%	7%	3%
	Other	1%	2%	0%
<u>Risk Factors</u>	0	43%	47%	38%
	1	37%	36%	38%
	2	17%	14%	22%
	3	3%	3%	3%

Table 2
Parent Demographics

		Total (n=90)	Experimental (n=58)	Control (n=32)
Mean (SD) Age		33.86 (6.79)	33.89 (7.04)	33.81 (6.44)
Household income less than 150% of poverty		46%	41%	53%
<u>Gender</u>	Male	11%	9%	16%
	Female	89%	91%	84%
<u>Education</u>	Less than HS diploma	10%	9%	13%
	HS diploma or GED	19%	16%	25%
	Some college	40%	46%	28%
	College degree	23%	21%	25%
	Graduate coursework/Degree	8%	8%	9%

Table 3
Teacher Demographics

		Overall (n=54)
<u>Gender</u>	Male	0%
	Female	100%
<u>Ethnicity</u>	White non-Hispanic	100%
<u>Education</u>	College degree	17%
	Some graduate coursework	39%
	Graduate degree	44%
<u>Certification</u>	General education	82%
	General & Special education	18%

Table 4
Significant Group Differences at Post-Test

Measures	<i>n</i>	<u>Treatment</u>		<u>Control</u>		<i>t</i>	<i>d</i>	
		<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>			<i>SD</i>
Student								
BASC-Teacher Report								
Anxiety	35	45.89	6.30	22	53.86	13.69	2.99**	0.75
Depression	35	53.97	9.97	21	62.33	16.23	2.39*	0.62
Atypicality	35	57.06	11.37	22	64.82	17.84	2.01*	0.52
Behavioral Symptoms Index	35	60.43	9.14	22	69.95	15.86	2.88**	0.74
Teacher								
PTRS-Teacher Version								
Communication to Other (Adaptability)	56	4.03	0.66	37	3.61	0.66	2.98**	0.62
TSQ	56	2.91	0.39	38	2.60	0.42	3.69**	0.77
TPPS	56	5.47	1.22	38	4.59	0.61	4.13**	0.86
TBAPI	34	5.07	0.44	24	4.78	0.43	2.51*	0.67
Parent								
PTRS-Parent Version								
Adaptability	51	4.44	0.58	24	4.07	0.68	2.42*	0.57
Joining (Cohesion)	51	4.70	0.42	24	4.45	0.54	2.15*	0.50
APQ								
Parental Involvement	51	4.13	0.48	24	3.86	0.43	2.34*	0.55
Corporal Punishment	50	1.37	0.34	24	1.63	0.52	2.56**	0.60
PPPS	51	5.06	0.41	24	4.52	0.65	4.40**	1.03
PECS	51	4.60	0.47	23	4.27	0.41	2.94**	0.69

* $p < .05$ ** $p < .01$

Table 5
Significant Gains for Treatment Group Only from Pre-Test to Post-Test

Measure	<i>n</i>	<i>M</i>	Pre		Post		<i>t</i>	<i>r</i> ²
			<i>SD</i>	<i>M</i>	<i>SD</i>			
Student								
PDR-Parent Report								
Arguing	60	0.72	0.29	0.55	0.34	3.97**	0.21	
Noncompliance	60	0.55	0.37	0.38	0.36	3.49**	0.17	
Tantrums	60	0.27	0.34	0.14	0.23	3.35**	0.16	
BASC-Teacher Report								
Hyperactivity	34	68.53	8.05	62.18	7.62	5.07**	0.44	
Anxiety	34	48.94	8.66	45.97	6.38	2.86**	0.30	
Depression	34	57.91	9.67	54.00	10.14	3.75**	0.46	
Attention Problems	34	64.44	5.32	59.15	6.16	5.32**	0.16	
Learning Problems	29	57.17	9.94	55.10	9.66	2.30*	0.17	
Withdrawal	34	59.85	11.98	56.03	9.74	2.59*	0.12	
Adaptability	34	40.88	7.80	43.29	8.62	2.06*	0.34	
Social Skills	34	39.91	6.23	44.53	6.77	4.14**	0.26	
Externalizing Problems	34	65.91	7.46	62.03	8.99	3.38**	0.26	
Internalizing Problems	34	53.86	9.36	50.82	9.45	3.23**	0.24	
School Problems	29	61.52	7.38	57.83	7.10	4.43**	0.41	
Behavioral Symptoms Index	34	65.56	8.15	60.35	9.26	4.51**	0.38	
Adaptive Skills	33	38.91	6.52	41.88	6.37	2.73*	0.19	
Teacher								
PTRS								
Communication to Other (Adaptability)	54	3.46	0.67	4.03	0.67	6.87**	0.47	
Parent								
PTRS								
Communication to Other (Adaptability)	49	4.05	0.92	4.43	0.58	3.79**	0.23	
APQ								
Inconsistent Discipline	49	2.06	0.50	1.85	0.47	3.20**	0.18	
PPPS								
	48	4.30	0.84	5.07	0.42	6.08**	0.44	
PECS								
	49	4.30	0.57	4.59	0.48	3.47**	0.20	
PEHCSS								
	49	4.57	0.58	4.79	0.58	3.13**	0.17	

* $p < .05$ ** $p < .01$