

Abstract Title Page

Title: Conjoint Behavioral Consultation: Preliminary Findings of Child Outcomes and the Mediating Effect of Parent-Teacher Relationships

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Abstract Body

Background/context:

Conjoint Behavioral Consultation (CBC; Sheridan et al., 1996; Sheridan & Kratochwill, 2008) is an indirect intervention that engages parents, teachers, and a behavioral consultant in collaborative, structured problem solving to address shared academic, behavioral, or social-emotional concerns for a student. The goals of CBC are to (a) enhance academic, social-emotional, and behavioral outcomes for children; and (b) develop collaborative family-school partnerships. Specifically, CBC provides a structure through which evidence-based intervention strategies are implemented by parents and teachers to address behavioral challenges consistently and collaboratively across home and school. An important indicator of family-school partnerships is the degree to which parents and teachers develop positive, constructive relationships. Specifically, positive parent-teacher relationships are often characterized by trust, support, and information sharing (Vickers & Minke, 1995).

CBC has demonstrated favorable student outcomes across home and school settings (see Sheridan, Clarke, & Burt, 2008) as well as among children from diverse backgrounds (Sheridan et al., 2006). Thus far, the efficacy of CBC has been examined primarily via experimental single subject or quasi-experimental studies. Heretofore, there have been no studies using large scale randomized trials to investigate the efficacy of CBC. Furthermore, the mechanisms or pathways by which CBC exerts its effects (e.g., through the establishment of family-school partnerships, healthy parent-teacher relationships, or continuity among home and school) have not been explored. The current study employs a large-scale randomized trial to investigate the efficacy of CBC as well as the pathways by which CBC produces positive effects.

Purpose/objective/research question/focus of study:

This study reports the preliminary effects of a study funded by the Institute of Education Sciences to test the effects of CBC on child behavioral outcomes. The specific goals of this study are three-fold. First, we present preliminary findings of a randomized trial evaluating the efficacy of CBC on children's externalizing behaviors and social skills assessed by teacher report on standardized measures. Second, we describe the results of an analysis testing the effects of CBC on parent-teacher relationships. Third, to understand the mechanism by which CBC intervention leads to positive child outcomes, we examine the parent-teacher relationship as a mediator between the CBC intervention and child outcomes. Specific research questions are:

1. What is the effect of CBC on children's externalizing, adaptive, and social behaviors?
2. What is the effect of CBC on teachers' reports of the parent-teacher relationship?
3. Does the parent-teacher relationship mediate the effects of CBC on child outcomes?

Setting:

Participants for this research were recruited from 26 schools in a moderately sized Midwestern city and surrounding communities. CBC consultants worked directly with parents and teachers, and parents and teachers implemented interventions tailored to each child's problem behaviors in home and school settings.

Population/Participants/Subjects:

Participants for the current study were 203 Kindergarten through 3rd grade children and their parents and teachers. Children included in this study met criteria for disruptive behaviors (e.g., non-compliance, aggression) based on teacher nomination, ratings on a short behavioral inventory, and the *Systematic Screening for Behavior Disorders (SSBD)*; Walker & Seversen, 1990).

Intervention/Program/Practice:

CBC involved the provision of structured, indirect services to parents and teachers, who were responsible for implementing evidence-based interventions directly to students within natural home and school settings. The CBC intervention was implemented within small classroom groups comprised of a teacher and the parents of 2-3 students. CBC was procedurally operationalized via 3 stages, implemented in four to five conjoint consultation sessions over 8-12 weeks:

- *Stage 1: Needs Identification and Needs Analysis (Building on Strengths)* – involved discussing objectives; reviewing student, family, and school strengths; identifying and defining student needs; prioritizing 1-2 target behaviors per student; conducting functional behavior assessments; setting student goals; discussing data collection procedures for home and school; and selecting intervention strategies to address disruptive behaviors at home and school.
- *Stage 2: Plan Development (Planning for Success)* – involved examining behavioral data; developing a specific plan to address student needs; training parents and teachers in plan execution; discussing ways to support the plan at home and school; and gathering information.
- *Stage 3: Plan Evaluation (Checking and Reconnecting)* – involved evaluating the efficacy of the plan at addressing student needs across home and school; discussing progress made toward goals; and determining a plan for continuation and/or changes.

A *CBC Behavioral Strategies Toolkit* was developed for CBC consultants to use in their casework. The Toolkit is organized by behavioral functions, including positive strategies and reductive techniques, and was used as the basis for individual behavior plan development. The Toolkit strategies were selected based on their empirical support (Stage & Quiroz, 1997). Strategies used in CBC cases to address disruptive behaviors were those that: (a) *promote positive behaviors* through providing attention, rewards, and praise for compliance (Moore et al.,

1994; Van Houten & Nau, 1980; Wolfe et al., 1983); (b) *reduce inappropriate behaviors* by setting limits and establishing consequences (McMahon & Forehand, 2003; White & Bailey, 1990; Witt & Elliott, 1982); (c) *provide proactive support* to guide student's behaviors (precision commands; skill training); and (d) *promote home-school communication* through home-notes or other consistent means (McCain & Kelley, 1994; Taylor et al., 1984).

Specific behavior plans were developed to allow for the individualization of evidence-based strategies. Every student receiving a "like" intervention (e.g., token economy) received a standard behavior plan. Individuation occurred at the level of specific reinforcers, schedules of reinforcement, and other idiosyncratic elements of individualized plans. Standardization across students was ensured further by including, for each individualized behavior plan, a motivation component (e.g., token economy, reward menu) and a home-school communication system to support continuity, cooperation, and support between parents and teachers outside of CBC meetings. The consultant scheduled additional contacts with parent(s) and the teacher as needed to further specify details of behavior plans (e.g., specific items for the reward menu). Consultants provided additional training related to behavior plan implementation in the home and classroom settings as needed.

Research Design:

A randomized field trial was used. Because the intervention was delivered in small groups (one teacher and 2-3 parents participated), randomization occurred at the classroom level. Fifty-two classrooms were assigned to the CBC condition, and 42 classrooms were assigned to the control condition, resulting in 112 children and parents in the CBC condition and 91 children and parents in the control condition.

Data Collection and Analysis:

Data collection for this large scale efficacy study is ongoing. Child outcome measures included the teacher report of the Behavioral Assessment System for Children, Second Edition – Teacher Report, Child (BASC-2; Reynolds & Kamphaus, 2004) and the Social Skills Rating System (SSRS; Gresham & Elliott, 1990). BASC-II and SSRS are norm-referenced behavior rating scales and reliability and validity of the scales are well established. The parent-teacher relationship was measured by teacher report on the Parent-Teacher Relationship Scale –II (PTRS-II; Vickers & Minke, 1995). The response categories for the PTRS-II range from almost never (1) to almost always (5), and good internal consistency was suggested for the scale ($\alpha = .85$ to $.98$). The severity of children's overall behavioral problems was assessed by a teacher rating, ranging from very mild (1) to very severe (9), during the screening process and was used as a control variable.

For the first and second research questions, CBC effects on outcomes from pretest to posttest were estimated with a three-level multilevel modeling technique that takes into account the nesting of time points within individuals and nesting of individuals within teachers. The fixed effect of interest is a time by treatment group interaction (γ). Significance of this coefficient indicates that the change over time is significantly different between the CBC and control conditions. For the third research question, a bootstrap method (Shrout & Bolger, 2002) was

used within the context of path analysis to test the hypothesis that parent-teacher relationships mediate the relationship between CBC and child outcomes.

Findings/Results:

The estimation of fixed effects and descriptive statistics of child and parent-teacher outcome variables are presented in Table 1.

CBC Effects on Child Outcomes

After controlling for the severity of a child's overall behavior problems at baseline, statistically significant differences in the change from pretest to posttest were found between the CBC and control groups for *BASC-2 Externalizing Problems* [$\gamma=-2.60$; $t(162)=-1.98$; $p<.05$], *BASC-2 Adaptive Skills* [$\gamma=1.99$; $t(158)=1.99$; $p<.05$], and *SSRS Total Score* [$\gamma=3.66$; $t(164)=2.40$; $p<.05$]. That is, as compared to children in the control group, children in the CBC group demonstrated greater decreases in externalizing problems and more increases in adaptive skills and social skills as a function of CBC.

CBC Effects on Parent-Teacher Relationship

The effect of CBC on teacher perception of parent-teacher relationship was estimated in a manner to that used for testing the effects on child outcomes. As compared to teachers in the control group, teachers in the CBC group reported greater increases in their relationships with parents [$\gamma=.16$; $t(174)=2.53$; $p<.05$].

(please insert table 1 here)

Parent-Teacher Relationship as a Mediator of CBC on Child Outcomes

The mediation effect was tested for the three child outcomes where CBC showed positive intervention effects (i.e., externalizing behaviors, adaptive skills, social skills). In each case, pretest scores were entered as covariates. Among the three child outcomes examined, the mediation effect was found for *BASC-2 Adaptive Skills* only (Figure 1). The parameter estimate (and standard error) of the indirect effect was .27(.15) with a 95% confidence interval of .06 -.75. The mediation model is depicted in Figure 1.

(please insert figure 1 here)

Conclusions:

Students with externalizing behaviors are at increased risk for developing intractable learning and social/adaptive problems, and their behaviors often create significant disruption to structured learning environments within classrooms. Furthermore, positive relationships among families and schools and shared responsibility for problem solving are related to improvements in academic achievement, social-behavioral skills, and teacher/school quality. This study is the first large scale randomized trial testing the efficacy of CBC at reducing child externalizing behaviors and at increasing positive relationships between parents and teachers. Furthermore, it

is the first to investigate processes that may mediate CBC's effects. Preliminary findings showed that, as compared to children in the control group, those who participated in CBC not only experienced reduced externalizing problem behaviors but also demonstrated increased social/adaptive skills at school. Also, as compared to teachers in the control group, those who participated in CBC reported greater improvements in their relationships with parents of children involved in CBC. The mediating effect of parent-teacher relationships was partially supported: Improvement in parent-teacher relationships accounted for the positive CBC effect on children's increased adaptive skills. Investigation continues regarding the pathways by which home-school partnerships contribute to positive CBC outcomes, and results will be presented. Discussion will focus on the contribution of home-school partnerships, including parent-teacher relationships, to children's educational success. Implications for future research will also be discussed.

Appendixes
Appendix A. References

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Appendix B. Tables and Figures

Table 1. CBC Effects on Child Outcomes and Parent-Teacher Relationship

Effect	Fixed Effect Estimation					Descriptive Statistics			
	Estimate	SE	DF	t			Pre	Post	
<u>BASC-II Externalizing Problems</u>									
Intercept (C)	61.35	2.28	283	26.86	**	CBC	M	67.14	63.13
Slope (C)	-1.41	1.01	164	-1.40			(SD)	(11.23)	(10.83)
Δ Intercept (T - C)	2.15	2.44	236	0.88		Control	M	68.32	66.48
Δ Slope (T - C)	-2.60	1.32	162	-1.98	*		(SD)	(10.64)	(10.16)
Severity	2.76	.52	171	5.33	**				
<u>BASC-II Adaptive Skills</u>									
Intercept (C)	45.35	1.67	290	27.22	**	CBC	M	40.82	43.25
Slope (C)	.30	.76	160	.39			(SD)	(6.69)	(7.17)
Δ Intercept (T - C)	-3.23	1.83	236	-1.77		Control	M	41.95	42.64
Δ Slope (T - C)	1.99	1.00	158	1.99	*		(SD)	(6.98)	(6.61)
Severity	-1.25	.36	167	-3.45	**				
<u>SSRS Total Score</u>									
Intercept (C)	91.86	2.56	299	35.84	**	CBC	M	83.42	89.14
Slope (C)	1.35	1.16	165	1.17			(SD)	(12.18)	(13.59)
Δ Intercept (T - C)	-5.21	2.86	240	-1.82		Control	M	85.26	87.49
Δ Slope (T - C)	3.66	1.53	164	2.40	*		(SD)	(9.16)	(8.97)
Severity	-2.83	.54	171	5.27*	**				
<u>Parent-Teacher Relationship Scale II (Teacher) - Total</u>									
Intercept (C)	3.83	.13	167	29.70	**	CBC	M	3.66	3.78
Slope (C)	-.05	.05	174	-.11			(SD)	(.70)	(.75)
Δ Intercept (T - C)	-.30	.17	183	-1.75		Control	M	3.78	3.72
Δ Slope (T - C)	.16	.06	174	2.53	**		(SD)	(.80)	(.81)

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

T: Treatment (CBC), C: Control

Δ Slope (T - C) represents differences in change over time between the CBC and Control conditions that are of practical interest

Figure 1. Mediation of parent-teacher relationship on adaptive skills

