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Introduction

Problem behaviors beginning in early childhood may lead to poor outcomes later in life if left untreated (Bradshaw, Schaeffer, Petras, & Jalongo, 2010). Teachers play an important role in altering this trajectory, but receive limited training in addressing problem behaviors (Markow, Moessner, & Horowitz, 2006; McIntosh, Brown, & Borgmeier, 2008).

Early childhood consultation may provide teachers with problem-solving skills to address the needs of both current and future students with problem behavior.

Rural educators may particularly benefit from consultation; behavioral health resources are limited in rural schools (DeLeon et al., 2003) and rural students display higher levels of problem behavior than urban students (Sheridan et al., 2015).

Conjoint Behavioral Consultation (CBC) is a family-school partnership intervention that provides teachers with the skills to address student behavior. CBC is a structured problem-solving process wherein a consultant leads teachers and parents through collaborative meetings with the goal of addressing student needs (Sheridan & Kratochwill, 2008).

Previous studies have demonstrated that CBC is successful at ameliorating child problem behaviors (Sheridan et al., 2012; 2017a), but the impact of CBC on teacher practices is unknown.

Purpose

The purpose of the current study is to determine the effects of CBC on rural teachers' problem-solving skills, interaction quality with parents, and behavior management strategies. A secondary purpose of the study is to determine whether teachers' process skills (problem-solving and interaction quality with parents) mediate the effect of CBC on their use of strategies.

Research Questions

1. What are the effects of CBC on rural teachers' classroom practices and strategy use, competence in problem-solving, and interaction quality with parents?
2. Through what mechanisms does CBC impact rural teachers' strategy use and classroom practices?

Methods

Participants

- Teachers represented 45 schools in three Midwestern states (Table 1).
- 14 CBC consultants held Masters' degrees in educational administration, school psychology, and related fields. 13 were female, average age = 29.63

Methods

Table 1. Teacher Demographic Information

Characteristic	Total (SD)	CBC	Control
Number of Participants	152	84	68
Average Age	41.22 (12.6)	41.84 (12.96)	40.67 (12.35)
Gender: Female	97%	97%	95%
Ethnicity			
White/non-Hispanic	100%	100%	100%
Degree:			
Bachelor's	26%	21%	32%
Some Graduate	42%	49%	32%
Graduate Degree	32%	30%	35%
Average Years Experience	15.30 (11.31)	16.58 (11.53)	14.04 (11.05)

Measures

- Teacher Strategies Questionnaire (TSQ; Webster-Stratton, 2005)
 - Appropriate and inappropriate strategy use
 - 30 items, 1 to 5 Likert scale
- Direct Observations
 - 8 per teacher, 30 minutes each
 - Positive attention, positive tangible consequences, effective commands, negative attention, and reductive techniques
- Teacher Competence in Problem Solving (TCPS; Sheridan, 2004)
 - Teacher's belief they can solve problems regarding a student's behavior
 - 8 items, 1 to 6 Likert scale
- Communication Quality with Parent Scale (CQPS; Sheridan et al., 2005)
 - Teacher's perception of quality of communication with parents
 - 9 items, 1 to 5 Likert scale

Procedures

- CBC intervention
- Control group: business as usual
- Data collection
 - TSQ, TCPS, and CQPS collected before and after CBC (and at similar times for teachers in the control group)
 - Observations collected weekly for both control and CBC teachers, with 3 during baseline and 5 during the intervention phases

Table 2. CBC Stages

Stage	Objectives
Needs Identification/Analysis	<ul style="list-style-type: none"> • Jointly identify and define the student's needs • Determine primary behavior to address for initial intervention • Develop appropriate goals for target behavior across home and school • Discuss patterns that influence the primary behavior • Jointly establish a procedure to collect baseline data
Plan Development	<ul style="list-style-type: none"> • Collaboratively develop a plan built upon strengths to address the target behavior across home and school • Learn plan implementation skills as necessary
Plan Implementation	<ul style="list-style-type: none"> • Implement agreed-upon intervention across settings • Make immediate modifications to plan as necessary • Assess immediate changes in the student's behavior
Plan Evaluation	<ul style="list-style-type: none"> • Determine if goals for the priority behavior were met • Discuss effective elements of the intervention plan • Discuss continuation/termination of plan • Schedule additional interview if necessary

Methods

Data analytic plan

- 3-cohort longitudinal cluster-randomized experimental design; teachers randomized to treatment or control
- Path analysis in Mplus
- Multilevel models were used to account for nesting
- Mediation was tested using multilevel, multiple-mediator path analysis
 - Adequate model fit: RMSEA < .08, CFI > .90, SRMR < .08

Results

Table 3. Teacher-Reported Strategy Use

Outcome	B	S.E.	Est./S.E	P	β	R ²
Teacher Strategies Questionnaire – Appropriate Strategies (T2)						
CBC Effect	.254	.048	5.282	<.05	.47	.57
Teacher Strategies Questionnaire – Inappropriate Strategies (T2)						
CBC Effect	.01	.05	.24	.81	.01	.46

Table 4. Teacher Observed Strategy Use

Outcome	B	S.E.	Est./S.E	P	β	R ²
Effective Commands						
CBC Effect	.002	.001	1.729	.084	.166	.44
Negative Attention						
CBC Effect	-.001	.002	-.258	.797	-.029	.25
Positive Attention						
CBC Effect	.014	.003	4.561	<.05	.48	.33
Positive Tangible Consequences						
CBC Effect	.007	.001	5.901	<.01	.7	.15
Use of Reductive Techniques						
CBC Effect	-.008	.01	-.829	.407	-.105	.04

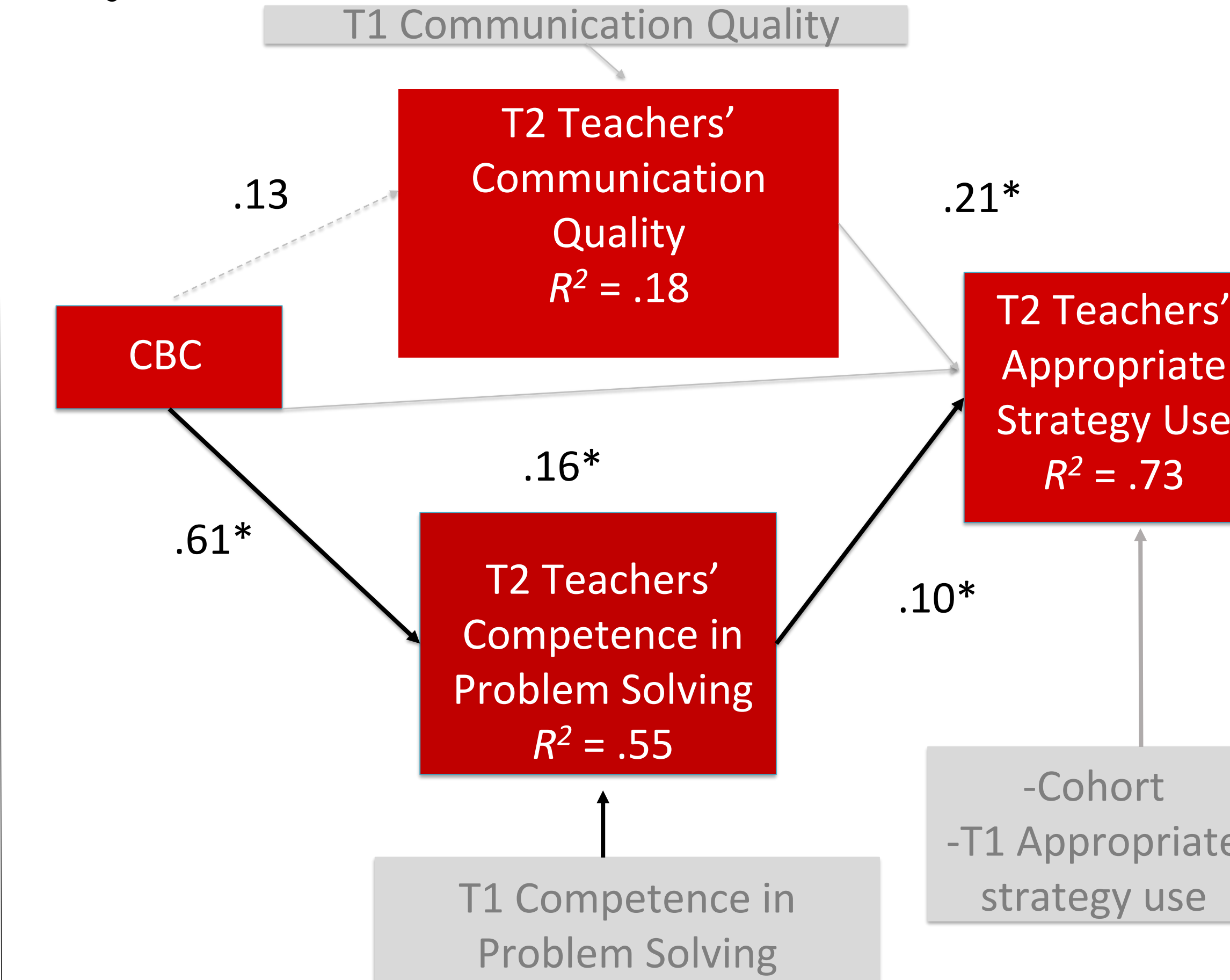
Table 5. Teacher Process Skills

Outcome	B	S.E.	Est./S.E	P	β	R ²
Teacher Communication Quality (T2)						
CBC Effect	.11	.06	1.84	.07	.23	.16
Teacher Competence in Problem Solving (T2)						
CBC Effect	.60	.07	8.30	<.05	.96	.30

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Results

Figure 1. Mediation Model



Discussion

This was the first large scale randomized trial to investigate the efficacy of CBC for improving teacher practices.

Strengthening teachers' skills for partnering with parents and problem-solving through CBC (as indicated by the mediation model) may improve teachers' ability to addressing students' behavior concerns.

CBC teachers' increased use of appropriate behavior management strategies may also help prevent behavior problems from occurring, or from exacerbating, in early childhood classrooms. This is significant given the negative trajectory for students who display problem behaviors in early childhood.

Rural schools, where access to teacher professional development and early childhood behavior specialists is limited, may especially benefit from CBC.

Limitations and Future Directions

No reductions in negative strategies were noted

- Future CBC implementation studies might include efforts to reduce negative teaching strategies in addition to increasing positive strategies

The study may have been underpowered to detect multiple mediation effects

- Future studies with larger samples are necessary to fully discern pathways by which CBC exerts its effects