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Strengths and Difficulties Questionnaire Evaluation Results

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Ensuring the well-being and healthy development of students are primary goals for educational institutions. Behavioral and emotional challenges are common, hindering a child's progress in the classroom and at home; 1 in 5 students experience some form of behavioral or emotional difficulty at some point in their childhood (Kessler et al., 2005). Despite the critical need to address behavioral and emotional issues in elementary school-age students, less than half of affected youth receive mental health treatment (Merikangas et al., 2010). Further, it is well documented that the occurrence of mental health problems can undermine a student's ability to focus, learn, and succeed in educational settings (Riglin et al., 2014). School-based mental health supports have not only been shown to be beneficial for student development but also are an effective means to address barriers to care, such as cost, transportation, and stigma, which are frequently experienced by children and their families (Committee on School Health, 2004; Powers et al., 2016).

One of the most effective models for improving student school experiences and outcomes is the social-emotional learning (SEL) model. SEL models for early childhood focus primarily on promoting positive interactions with peers and strengthening emotional and behavioral control (Denham & Brown, 2010). The benefits of implementing an SEL model are generally borne out in the social development of students in conjunction with their academic development, which is ultimately associated with improved child outcomes in both academic and personal growth (Denham & Brown, 2010).

Equally important to student development is the way in which an intervention is implemented. Positive behavior interventions and supports (PBIS) is a commonly-used framework for designing behavioral interventions in schools because it has been associated with a variety of positive outcomes including decreases in problem behavior, increases in academic achievement, and according to Bradshaw and colleagues, increases in teachers' feelings of efficacy (as cited in Kelm, McIntosh, & Cooley, 2014). The PBIS model uses a tiered classification system to ensure that support is appropriately distributed, with tier 1 students (80% of students) being served by the general implementation of an intervention, tier 2 students (15% of students) being served by group or program specific services, and tier 3 students (5% of students) being served by individual services, and while there is a relatively large body of research on students in tiers 1 and 3, little is known about educational outcomes for students classified as tier 2 (Stormont & Reinke, 2013).

The Child Connection Center (CCC) has created an SEL-based intervention in a PBIS structure for three local schools in southern New Jersey. In this unique model the CCC works collaboratively with students, caregivers, and teachers to improve students' and families' lives. The CCC develops students' social, emotional, behavioral, and mental health through comprehensive, individualized support designed to enable and empower students to learn both in and out of school. One of the most significant ways in which the CCC model is unique from other SEL and PBIS structures is its emphasis on the involvement of parents and teachers in the support process in order to more completely meet the behavioral and emotional support needs of students. Interventions which place parents in a passive role can hinder a child's progress as a result of inconsistent and ineffectual parental involvement and action (Pears et al., 2015).

This study aimed to address the gaps in the existing literature by evaluating the outcomes of children receiving supports from the CCC. This study measured students' social,

emotional, and behavioral functioning over time using the Strengths and Difficulties Questionnaire (SDQ: Goodman, 1997; Goodman, 1999), which is a widely used measure that utilizes teacher and parent report. This data provides clarity on the effectiveness of the CCC and furthers our understanding of the impact of school-based behavioral and emotional support services.

Methods

Research Question

What are the ways in which teacher and caregiver perceptions of student emotional and behavioral states change over time for students enrolled in the Child Connection Center's program?

Research Tool

Caregivers and teachers were asked to rate their students' social, emotional, and behavioral changes to determine the efficacy of CCC's SEL model. Caregivers and teachers rated their students using the Strengths and Difficulties Questionnaire (SDQ), a short-form survey instrument developed in 1997 by Goodman. Caregivers were asked to fill out the Parent SDQ and teachers were asked to fill out the Teacher SDQ. The SDQ consists of 25 items asking five questions about each of the following areas: emotional symptoms, behavioral problems, hyperactivity and inattentiveness, peer relationship problems, and prosocial behavior. An impact supplement for the SDQ (Goodman, 1999) was also given to students' caregivers and teachers. The impact supplement asks questions about the duration, frequency, severity, and overall impact of the difficulties a child experiences in their everyday life. Responses to the SDQ were used to generate 7 composite variables which represent a child's difficulties in a variety of areas. Those composite variables were (for both Parent and Teacher SDQs):

- **Emotional difficulties:** A measure of the emotional difficulties of the child, such as whether the child is unhappy, worries, or is clingy.
- **Behavioral problems:** A measure of the conduct problems of the child, such as whether the child lies, steals, or fights or bullies other children.
- **Hyperactivity:** A measure of the child's hyperactivity and inattentiveness, such as whether the child is restless, easily distracted, or fidgety.
- **Peer difficulties:** A measure of the child's peer relationship problems, such as whether the child is generally liked, is bullied, or gets along better with adults.
- **Prosociality:** A measure of prosocial behaviors from the child, such as being considerate, sharing, or volunteering for responsibilities.
- **Total difficulties:** A measure of the total emotional and behavioral difficulties of the child across all previously listed variables.
- **Impact:** A measure of the impact of these difficulties on the child's life, in areas such as home life, friendships, or learning settings.

The SDQ has been used in variety of previous studies on the efficacy of behavioral interventions. It has been used as a screening tool for eligibility (Burke et al., 2016; Hutchings, Martin-Forbes, Daley, & Williams, 2013), a measure of mental health (Biel et al., 2015), and as a method for capturing improvements in a child's emotional-behavioral well-being (Mathai, Anderson, & Bourne, 2003; McDaniel et al., 2018; McGilloway et al., 2012; McDaniel, Bruhn, & Troughton, 2017).

The SDQ was administered to the caregivers and teachers of students in three schools: Herma Simmons Elementary and Saint Michael's Regional School in Clayton, NJ and Central Early Childhood Center in Deptford, NJ. Teachers enrolled in this study in a mass-recruitment

effort, and most teachers who participated did so for more than one student. Caregivers were given the option to participate in the study when their child began working with the CCC.

Teachers and caregivers filled out a baseline SDQ upon enrollment in the study before the child began to receive support or services from CCC. Students' caregivers and teachers were given a follow-up SDQ three months after the child had been receiving support through the CCC. By administering both a baseline SDQ and a follow-up SDQ, we were able to compare students' emotional and behavioral difficulties through caregiver and teacher scores on the SDQ and determine whether CCC's social-emotional-behavioral support model significantly improved children's emotional and behavioral well-being.

Sample

Our sample (n=47) consisted of 2.2% pre-kindergarten students, 22.2% kindergarten students, 31.1% first grade students, 13.3% second grade students, 8.9% third grade students, 13.3% fifth grade students, and 8.9% sixth grade students. Herma Simmons Public School accounted for 53.2% of the students, Central Early Childhood Center accounted for 27.7% of the students, and St. Michael's accounted for 19.2% of the students. The average age of children in the sample was 7.74 years old. Students entered the program at the referral of a teacher (40.5%), parent (35.7%), administrator (7.1%), parent and teacher (9.5%), via self-referral (2.4%), or from other sources (4.8%). Most students did not have a discipline recommendation (89.4%). Students in this sample were 42.6% female; 64.4% of students were white, 28.9% were black, and 6.7% were Hispanic. 57.4% of students lived in Clayton, 14.9% lived in Deptford, 8.5% lived in Glassboro, 4.3% lived in Westville and Sewell, and 2.1% lived in Swedesboro, Franklinville, Williamstown, Monroeville, and Woodbury.

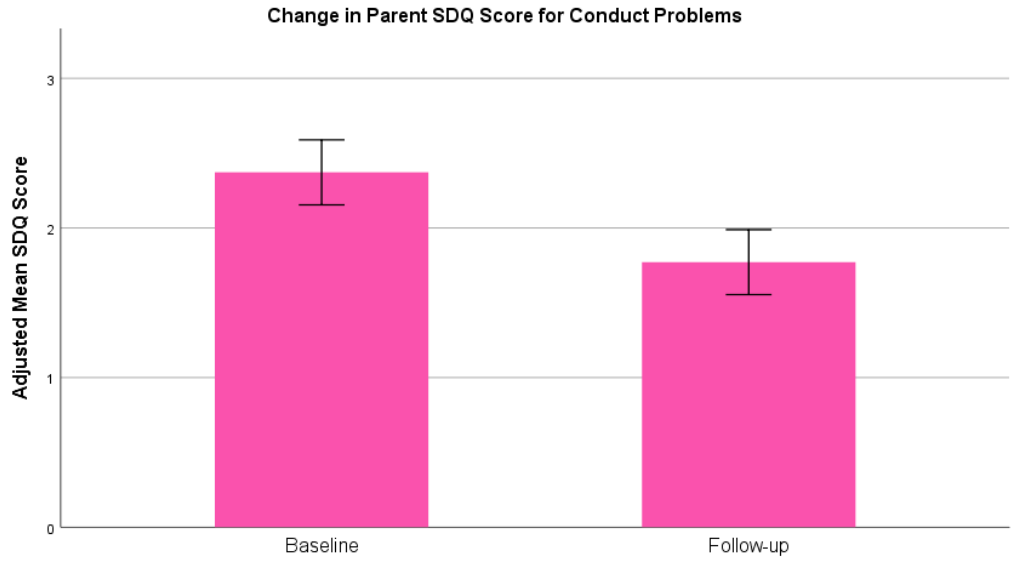
Analysis

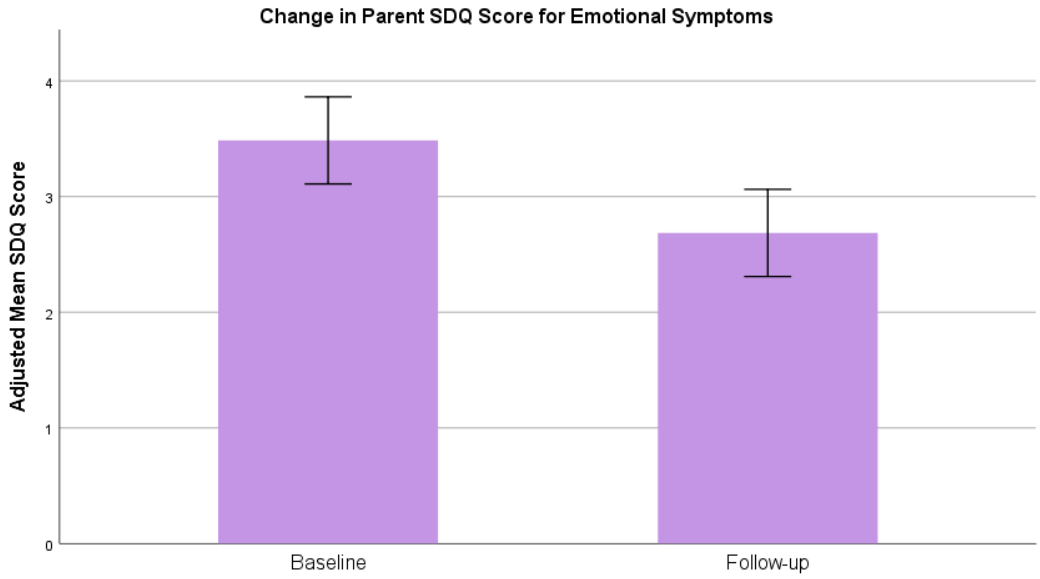
Because data for the SDQ was collected at two time points, a repeated measures (or paired samples) *t*-test was computed for each of the seven variables. The repeated measures *t*-test is most appropriate for this sample because data was collected longitudinally. With a repeated measures design, the individual variation on scores between participants is accounted for, because the same participants (and thus, the same individual variations) are sampled at both time points, which increases the power of the test to detect an effect. For each pair of data points, the mean of the baseline score was compared to the mean of the follow-up score to determine whether there was a significant change in score as a result of support from the CCC.

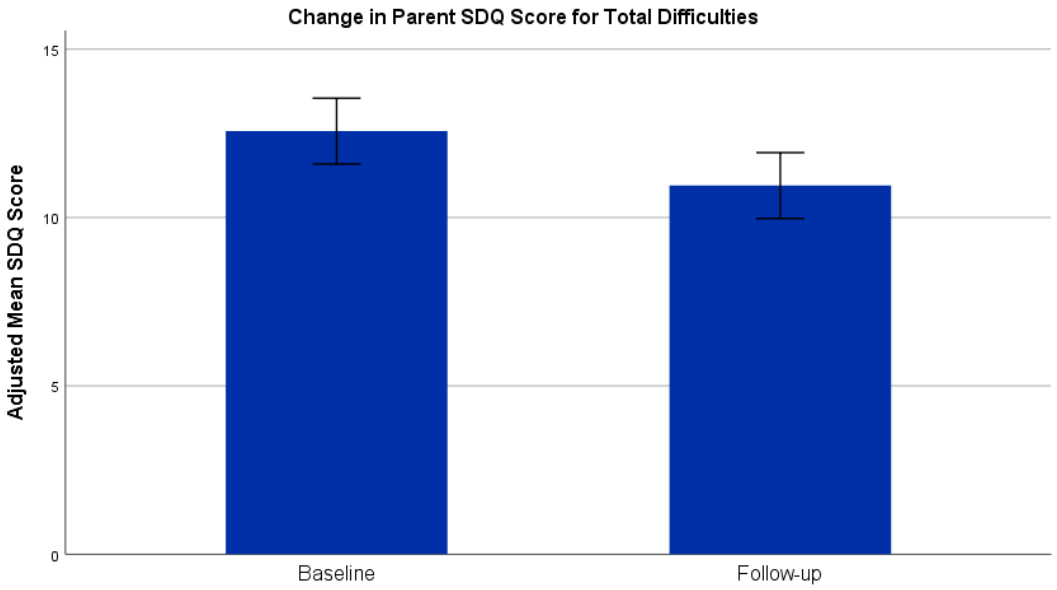
Results

Caregiver Results

There was a significant difference in SDQ score between emotional difficulties reported by parents at baseline (*M*=3.49, *SD*=2.57) and at follow-up (*M*=2.69, *SD*=1.97); *t*(34)=2.16, *p*=.038, between behavioral problems reported by parents at baseline (*M*=2.37, *SD*=1.90) and at follow-up (*M*=1.77, *SD*=1.44); *t*(34)=2.81, *p*=.008, and between impact of difficulties reported by parents at baseline (*M*=2.09, *SD*=2.45) and at follow-up (*M*=1.06, *SD*=1.71); t(34)=3.10, *p*=.004. There was a marginally significant difference in SDQ score between total difficulties reported by parents at baseline (*M*=12.41, *SD*=6.22) and at follow-up (*M*=10.79, *SD*=5.20); *t*(33)=1.68, *p*=.102.






Change in Parent SDQ Score for Total Difficulties
Adjusted Mean SDQ Score
15
10
5
0
Baseline
Follow-up

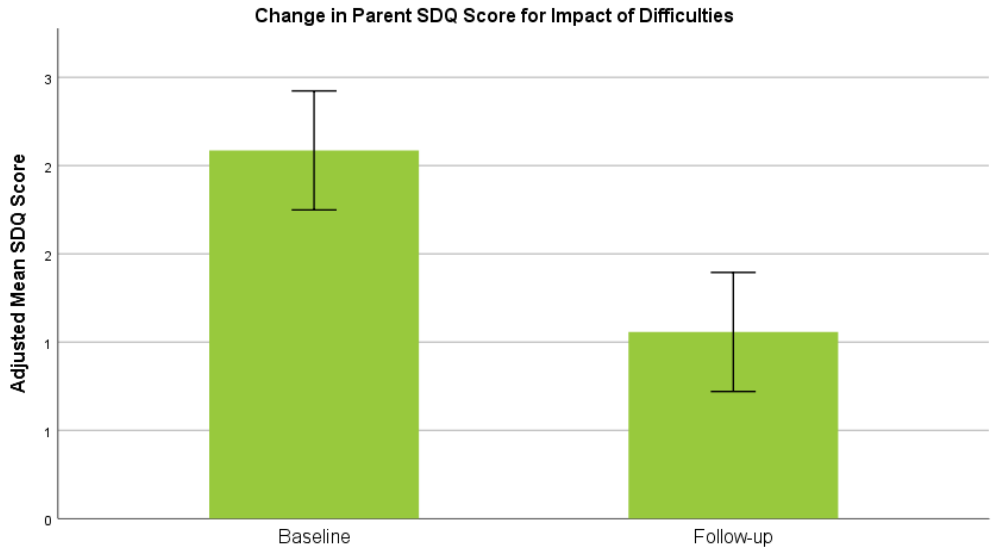
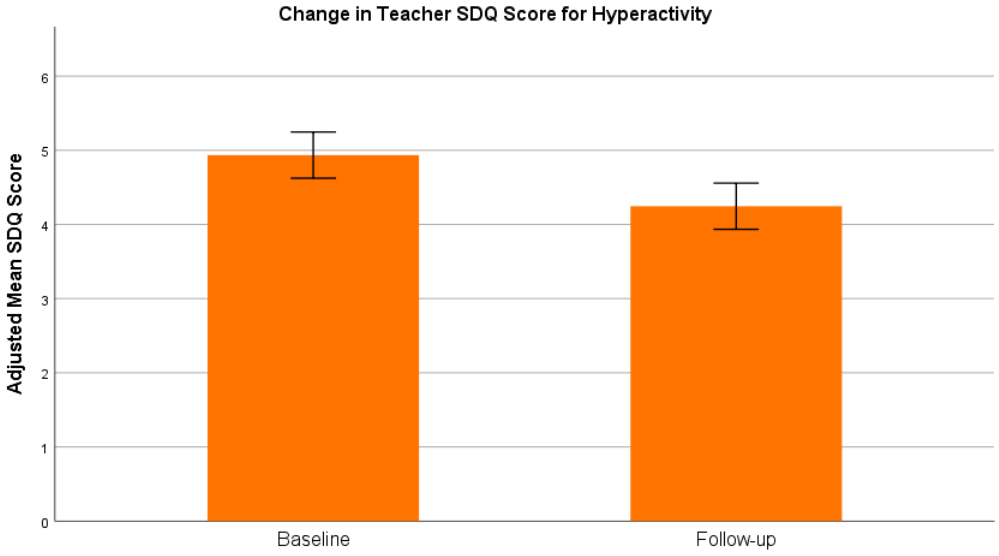

Change in Parent SDQ Score for Impact of Difficulties
Adjusted Mean SDQ Score
3
2
2
1
1
0
Baseline
Follow-up

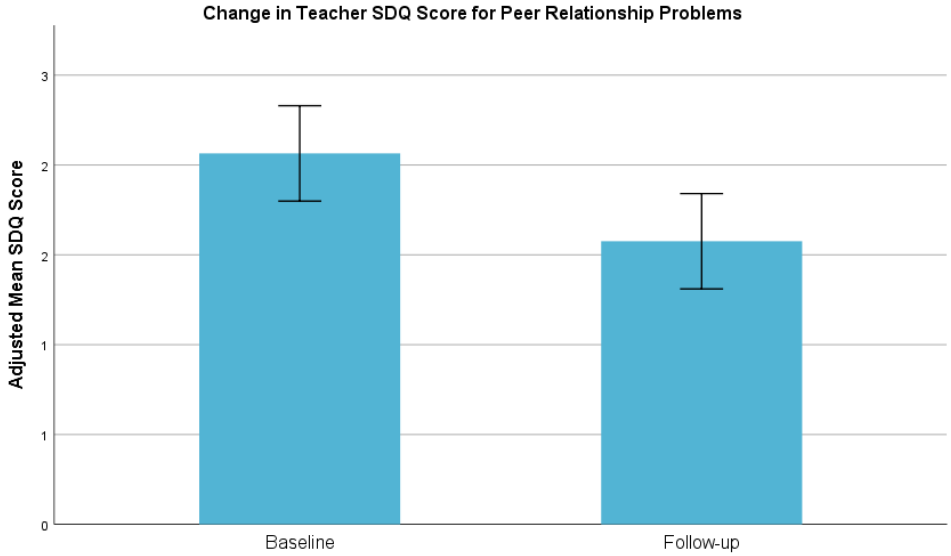
Table 1. Mean SDQ Scores and Significance for Parent SDQ Reports

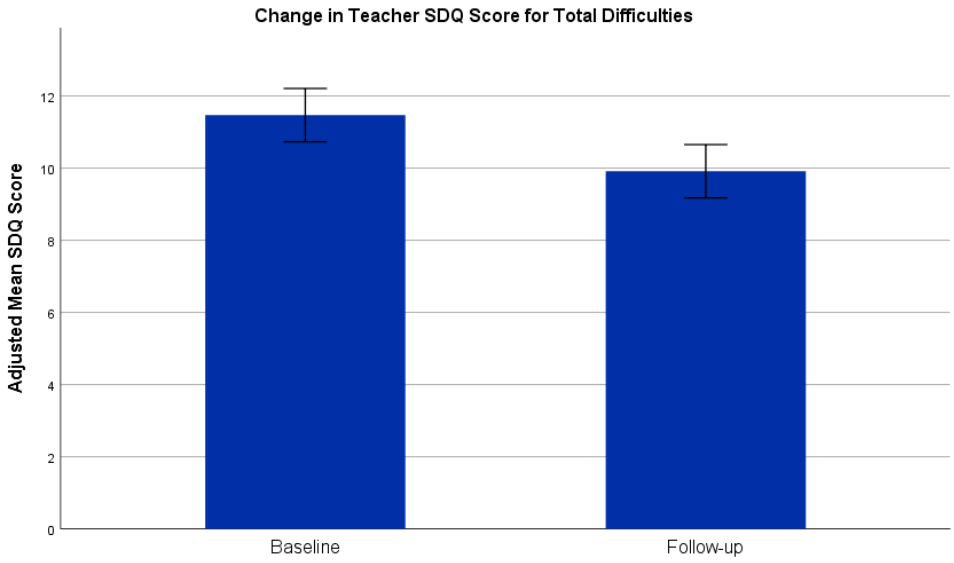
Outcomes	Baseline Mean	Follow-Up Mean	Mean Difference	*t*	df	Significance
Emotional Difficulties	3.49	2.69	.800	2.158	34	.038
Conduct Problems	2.37	1.77	.600	2.806	34	.008
Hyperactivity	4.76	4.68	.088	.242	33	.810
Peer Relationships	1.86	1.83	.029	.110	34	.913
Prosocial Behaviors	8.54	8.80	-.257	-1.222	34	.230
Total difficulties	12.41	10.79	1.618	1.682	33	.102
Impact of difficulties	2.09	1.06	1.029	3.100	34	.004

Teacher Results

There was a significant difference in SDQ score between hyperactivity reported by teachers at baseline (*M*=4.93, *SD*=3.01) and at follow-up (*M*=4.24, *SD*=3.13); *t*(44)=2.23, *p*=.031, between total difficulties reported by teachers at baseline (*M*=11.47, *SD*=7.25) and at follow-up (*M*=9.91, *SD*=6.20); *t*(44)=2.12, *p*=.040, and between impact of difficulties reported by teachers at baseline (*M*=2.13, *SD*=1.87) and at follow-up (*M*=1.47, *SD*=1.66); *t*(44)=2.91, *p*=.006. There was a marginally significant difference in SDQ score between peer difficulties reported by teachers at baseline (*M*=2.07, *SD*=1.92) and at follow-up (*M*=1.58, *SD*=1.59); *t*(44)=1.86, *p*=.070.






Change in Teacher SDQ Score for Total Difficulties
Adjusted Mean SDQ Score
0
2
4
6
8
10
12
Baseline
Follow-up

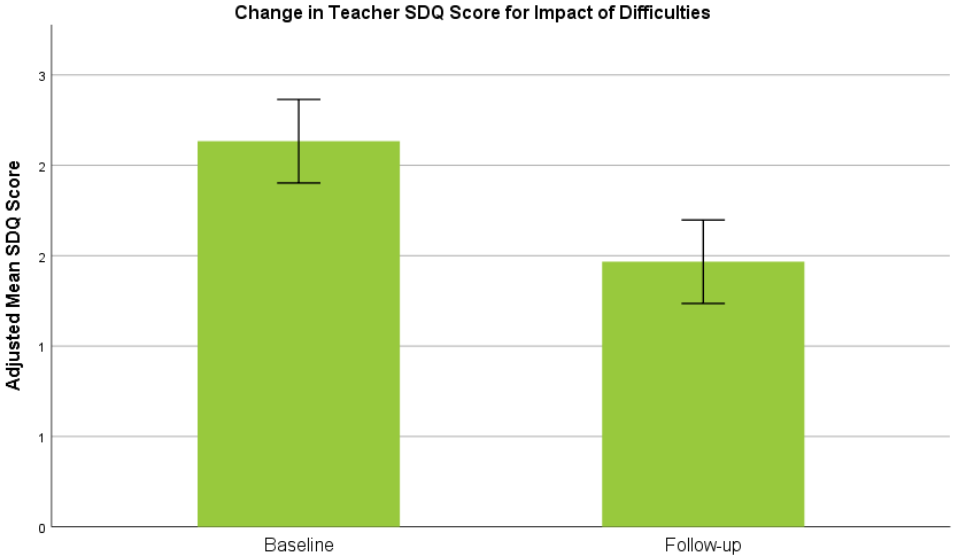

Change in Teacher SDQ Score for Impact of Difficulties
Adjusted Mean SDQ Score
0
1
1
2
2
3
Baseline
Follow-up

Table 2. Mean SDQ Scores and Significance for Teacher SDQ Reports

Outcomes	Baseline Mean	Follow-Up Mean	Mean Difference	*t*	df	Significance
Emotional Difficulties	2.56	2.24	.311	1.022	44	.313
Conduct Problems	1.91	1.84	.067	.282	44	.779
Hyperactivity	4.93	4.24	.689	2.226	44	.031
Peer Relationships	2.07	1.58	.489	1.857	44	.070
Prosocial Behaviors	6.64	7.04	-.400	-1.378	44	.175
Total difficulties	11.47	9.91	1.556	2.121	44	.040
Impact of difficulties	2.13	1.47	.667	2.909	44	.006

Implications

The changes in caregiver and teacher observations of student behaviors in this study cannot be understated. Both caregiver and teacher observational changes highlight the importance of the context of students' emotional and behavioral practices. Caregivers observed that their children were significantly better able to regulate their emotions and had improved behavior at home, while teachers report that students are significantly more attentive and focused, and have improved relationships with their peers. Caregivers' observations of improved emotional regulation and improved behavior make sense as caregivers may be paying closer attention to the ways their children positively and negatively affect their home environment. Additionally, teachers may be better positioned to observe and report on student attentiveness and peer relationships as the classroom is often a place where focus and social relationships are more common than in the home.

Importantly, both caregivers and teachers both reported a significant reduction in total social and emotional behavioral difficulties and report that the reduction in these difficulties positively impacted the child's life. While the context of caregivers' and teachers' observations may have affected the areas in which positive changes for children are observed, both caregivers and teachers reported significant positive changes in children's lives throughout their involvement with CCC.

The current study identifies the developmental benefits of the CCC model, which includes significant improvements in child emotional difficulties, conduct problems, hyperactivity, peer relationships, and the impact of difficulties in these areas on children, as well as decreases in the total emotional and behavioral difficulties children experienced. Anecdotal evidence collected in the form of parent and teacher comments on children's progress supplements the statistical findings and is indicative of a pattern of improvement, both at home and in the classroom, consistent with the goals established for their model.

The value of these results is evident in light of previous research which has identified reductions in problem behaviors, increases in academic success, and increases in prosocial attitudes, among numerous other potential benefits to student recipients of SEL and PBIS-based interventions (Denham & Brown, 2010; Stormont & Reinke, 2013). The CCC model combines these behavioral and emotional benefits of SEL-style models with a more holistic approach to the implementation of the supports provided to students. The incorporation of both parents and teachers in the support process has been shown to significantly improve child outcomes and adherence to social and emotional development programming (Pears et al., 2015). Evidence of the efficacy of the district-tailored SEL-PBIS amalgamation which the CCC has created and successfully implemented is especially valuable as it relates to improvements in outcomes for tier 2 students, a group that has been understudied in the PBIS literature.

While there are positive outcome results that highlight the significant, meaningful, positive changes in kids' social, emotional, and behavioral wellbeing there remain opportunities to evaluate the ways in which CCC's SEL model operate and how those policies and practices may influence the results we see from this study. In addition, there remains an opportunity to explore the ways that CCC's practice of intensive support and collaboration between caregivers, teachers, students, and school staff affect school outcomes and experiences for students enrolled in CCC's SEL model.

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