

Enhancing Outcomes: Culturally Adapted Social–Emotional and Behavioral Interventions for Rural Black Elementary Learners at Risk

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Educators are responsible for supporting positive school experiences for all students, including those with or at risk for emotional and behavioral disorders (EBD). Students with or at risk for EBD experience multiple negative outcomes impacting their school years, and these negative outcomes extend past graduation. Social and emotional learning programs are being used by schools to build students' competency in areas designed to help them successfully manage the school environment and life in general. However, studies have not provided evidence that universal social–emotional learning (SEL) programs are effective for Black students. This study provides data on the efficacy of an intervention package comprised of the Strong Kids SEL Program and a Tier 2 culturally adapted check-in/check-out (CICO) with Black students in a rural district in an underserved community. Cultural adaptations presented for the SEL curriculum were based on developers' recommendations and teacher feedback from prior studies and incorporated focus groups. Behavior management support in the form of a culturally adapted CICO was provided to participants exhibiting externalizing behaviors disruptive to the learning process. Results indicated a functional relation between the intervention package culturally adapted (SEL + CICO) and a decrease in student rate of externalizing behavior and strong social validity across teachers and students. Hierarchical linear modeling showed a statistically significant decrease in externalizing behavior from baseline to intervention phases, with data suggesting the moderator of grade-level explained variability in the effectiveness of the intervention.

Impact and Implications

The present study suggests that culturally adapted social–emotional and behavioral interventions may be helpful in promoting emotional competence, self-monitoring of prosocial behavioral management skills, and improving student–teacher relationships with teachers and Black students with and at risk for EBD. It also highlights the need for more culturally responsive social–emotional and behavioral interventions for students of color to enhance, build, and repair family–school partnerships.

Keywords: social–emotional competence, behavior, black students, single-case, evidence-based intervention

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In the most recent report to Congress, statistics show that Black students were 1.9 times more likely to be identified under the emotional disturbance category of the Individuals with Disabilities Education Act (IDEA) compared with all students with disabilities (U.S. Department of Education, 2004). The IDEA defines emotional disturbance as a condition where the student exhibits one or more of

the five qualifying characteristics over a long period of time and to a marked degree that results in an adverse effect on the student's educational performance. This definition includes an inclusion (schizophrenia) and an exclusion clause (social maladjustment). Emotional disturbance serves as the primary category in which students with emotional or behavioral disorders (EBD) qualify for special education services. However, that is not to say that all students with EBD will be served under the emotional disturbance category, as the condition must also adversely affect their educational performance to qualify for services under IDEA. Forness et al. (2012) defined the term EBD as including “all emotional, behavioral, or psychiatric disorders listed in the psychiatric diagnosis manual that can affect children or adolescents” (p. 4).

The elevated risk ratio for Black students being identified with an emotional disturbance is a longstanding issue. In 2001, Black students constituted 17% of the public school students, yet they

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accounted for 27% of those receiving special education services under the emotional disturbance category (U.S. Department of Education, 2002). Despite federal initiatives focused on racial and ethnic disproportionality (i.e., awareness campaigns and the monitoring requirements from the IDEA amendments), the numbers over 20 years later have not improved, with still about a 10% discrepancy between the representation of Black students in the national population and the emotional disturbance category (Office of Special Education Programs, 2020).

There are several factors to consider when discussing the disproportionate representation of Black students in the emotional disturbance category, one of which might be the definition itself. Unchanged since the passage of PL 94-142, experts describe the emotional disturbance definition language as vague and contradictory among a variety of other pejoratives (Sallese et al., 2024). Past research shows extremely poor reliability among school psychologists applying the definition for eligibility decisions (Scardamalia et al., 2019). Vague language within a disability category definition leads to subjective decision making, which is easily influenced by biases (Hanchon & Allen, 2018). A recent review of state administrative definitions and evaluation procedures for emotional disturbance found that only 42% of states include language with a directive to consider cultural or ethnic norms in the eligibility determination (Sallese et al., 2024). The federal provision of nondiscriminatory assessment within IDEA narrowly focuses on the selection and administration of assessments, leaving out guidance on the critical practice of cultural awareness when evaluating initial teacher referrals and interpreting the results—Section 300.304 (c) (1). Among other things, the application of the current emotional disturbance definition without federal guidance to take a culturally affirming approach may contribute to the high numbers of Black students identified within the category.

Federally reported discipline data illustrate a similarly concerning picture of public schools for Black students, especially for Black boys. In 2020–2021, school-age Black boys were twice as likely as White boys to be suspended or expelled from school, experiencing higher rates of exclusionary discipline than boys of other races (Office for Civil Rights [OCR], 2023). Additional data show disproportionately high rates of school-related arrests and corporal punishment for Black male students (OCR, 2023). These data appear to support past research showing teachers' differential reactions to challenging behavior based on race (Welsh & Little, 2018). As an example, Okonofua and Eberhardt (2015) conducted a study using hypothetical vignettes and found that teachers were more likely to view the same behavior of Black students compared with their White peers as being indicative of a long-term pattern of problem behavior and deserving of suspension. When speaking about the discipline data, the U.S. Government Accountability Office (2018) acknowledged that some level of disparity in the data related to Black students was likely due to implicit bias. Haight et al. (2014) examined the perspectives of students, their caregivers, and educators on specific incidences of out-of-school suspensions and discovered that all groups saw suspension as a racial issue and observed that suspensions had a negative impact on student achievement, student–teacher relationships, and peer relationships.

Black students who engage in challenging behavior are navigating school environments with a higher likelihood that their behavior will result in excessive exclusionary discipline and a special education referral than their White peers (OCR, 2023; U.S.

Department of Education, 2004). Addressing needs in the social–emotional and behavioral domains certainly should focus on the student (i.e., identifying positive and proactive supports unique to their needs). However, the special education and discipline statistics support that there *must* also be an intentional effort for systems change. This includes assessing the current protocols for empirically validated social–emotional and behavioral interventions through a culturally responsive lens and adapting as necessary. Unfortunately for schools, there is a disparity between experimentally informed scholarly advice on culturally adapting interventions and the practical implementation of those recommendations. Brown et al. (2018) found few studies integrating cultural adaptations in their review of school-based social–emotional and behavioral interventions for students of color, calling for additional research to expand the field's understanding of cultural adaptations.

The purpose of the present study was to address the need for additional research by evaluating the effectiveness of a culturally adapted social–emotional and behavioral intervention package for Black students with and at risk for EBD in a rural public school setting. Researchers aimed to decrease externalizing behavior and address student needs from a holistic approach by pairing explicit instruction on social–emotional competencies (i.e., social–emotional learning [SEL] curriculum) with a secondary targeted behavior monitoring intervention (check-in check-out [CICO]) to prompt and reinforce the application of the social–emotional competencies. The study included culturally responsive training for school-based implementors and cultural adaptations to the standard intervention protocols centered on school and community stakeholders' feedback to take a systems-level approach to student support.

Social and Emotional Learning

A current strategy employed by schools to support the emotional well-being of students involves implementing universal SEL programs. These programs aim to teach students competencies that help them manage their emotions and reduce challenging behavior. The Collaborative for Academic, Social, and Emotional Learning (CASEL) established an SEL framework with five core competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision making (Weissberg et al., 2015). CASEL found that effective approaches to SEL implementation involved four elements: (a) sequenced sets of activities to foster skill development, (b) active forms of learning, (c) focused components emphasizing the development of personal and social skills, and (d) explicit targeting of social and emotional skills (Durlak et al., 2011; Weissberg et al., 2015). CASEL does not recommend any particular SEL program. However, it does recommend that communal values and a positive ethnic–racial identity be included as key components of SEL, particularly for marginalized groups whose culture and ethnic/racial identity have been historically disparaged or are currently diminished within mainstream cultural institutions, such as schools (Jagers et al., 2018).

Research supports the effectiveness of SEL programs in schools. MacCann et al. (2020) put it in simple terms, “students must also be able to understand and manage emotions to succeed at school” (p. 174). In their 2011 meta-analysis, Durlak and colleagues found 213 studies evaluating the impact of universal SEL programs involving over 270,000 students from kindergarten to high school. Results indicated that the SEL programs not only improved behavior

outcomes but also led to an 11%-point increase in academic achievement. It is important to note that their analysis excluded SEL programs focused on students with preexisting behavioral, emotional, or academic problems. Cipriano et al. (2023) conducted a systematic review and meta-analysis spanning 2008–2020 to examine the evidence base for universal school-based SEL interventions. Results from 424 studies, including over 575,000 participants, showed significant improvements in skills, attitudes, behaviors, school climate, safety, peer relationships, school functioning, and academic achievement compared to control conditions. Cipriano et al. (2023) revealed that only half of the studies reported student race/ethnicity and asserted that “significant work remains to understand if and how universal school-based SEL intervention effects differed for subgroups based on ... race/ethnicity” (p. 1197).

Researchers have explored the effectiveness of SEL programs and interventions in schools; however, few research studies have been conducted that specifically focus on the effectiveness of these programs to support the needs of Black students. This lack of research on this population extends to those attending rural schools (Cipriano et al., 2023). Showalter et al. (2019) noted that roughly 20% of U.S. public school students attend rural schools, yet they only represented 4.5% of the studies identified by Cipriano et al. (2023). Many Black students attend rural schools, which are often located in high-poverty communities where state funding is not available to provide services needed for all students’ behavioral and academic well-being. It is crucial to find ways to help students understand and manage their emotions, as well as to assist teachers in building cultural competency and employing culturally responsive practices.

Strong Kids Social–Emotional Learning Program

The Strong Kids Program is a series of grade banded SEL curricula (Strong Start, Strong Kids, Strong Teens) designed to improve students’ cognitive, affective, and social functioning. Students practice skills and use strategies learned through semiscripted lessons to develop and increase the five social–emotional competencies outlined by CASEL. The program is versatile and suitable for various settings (e.g., small group or whole group) and populations (e.g., typically developing, students with disabilities, students at risk). Several studies have demonstrated the effectiveness of the Strong Kids SEL Program for the general student population (e.g., Caldarella et al., 2009; Merrell et al., 2008; Whitcomb & Merrell, 2012). A limited number of studies have evaluated the effectiveness of the Strong Kids Program with Black students using the standard protocol. Ryan et al. (2016) investigated the program’s impact on 39 fourth- and fifth-grade students at risk for placement in an emotional and behavioral support classroom and found that Black female student participants did not respond to the SEL program with any statistically significant or practical improvement on the Social Emotional Assets and Resilience Scale.

CASEL notes that SEL curriculums are not one size fits all and are most effective when they are implemented with a specific context or culture in mind. The developers of the Strong Kids Program suggest adjusting implementation procedures and/or adapting the curriculum to align with the characteristics of the student group and their respective communities. This modification aims to enhance the student’s comprehension and increase the relevance of the materials, activities, and discussions. In addition, the developers recommend (a)

adjusting the lesson plan script language to allow for the expression of various viewpoints, (b) actively seeking stakeholder feedback, and (c) continuously assessing the implemented changes based on new insights gained throughout the implementation process.

A limited number of research teams have culturally adapted the Strong Kids Program. Graves et al. (2017) explored the efficacy of a culturally adapted version of the Strong Start SEL Program, implemented as a Tier 2 pullout intervention for Black male students at an urban elementary school. The study revealed that the adapted program did not influence two aspects of social–emotional competencies—empathy and responsibility—and failed to reduce externalizing behavior. Teachers expressed concerns about the appropriateness of the adaptations made by the research team for Black male participants in the urban setting. A. R. Campbell, Sallese, Thompson, Burke, and Allen (2023) also examined the effects of a culturally adapted version of the Strong Kids Program on the rate of externalizing behavior of 18 elementary Black male students with or at risk for EBD in an urban setting. In contrast to Graves et al. (2017), the SEL curriculum was also paired with CICO. The study results show a consistent decrease in externalizing behavior and an increase in social–emotional competencies across all but two learners. Students who are not successful with universal level supports alone (Tier 1, universal SEL curriculum) require targeted support (Tier 2). Within the Positive Behavioral and Interventions Supports (PBIS) framework, Tier 2 support should involve core practices such as increased opportunities for positive reinforcement, precorrections, adult supervision, and instruction and practice with self-regulation and social skills (Center on Positive Behavioral Interventions & Supports, n.d.). CICO is a common Tier 2 intervention incorporating these practices, and it is possible that students with challenging behavior require secondary support to prompt and reinforce the concepts learned in the universal SEL curriculum.

Check-In/Check-Out

CICO is an evidence-based targeted behavioral intervention that provides students with structured and frequent access to positive consequences contingent on meeting the predetermined behavioral expectations (Maggin et al., 2015). Students check in each morning and check out at the end of the school day with an adult mentor (i.e., CICO coordinator). The check-in involves the coordinator first making sure that the student has their homework and supplies for the day and then providing the student with their daily progress report (DPR). The DPR lists the student’s behavioral expectations, which align with the school-wide or class-wide expectations. Teachers provide feedback on whether the student met the expectations throughout the day. During check-out, the CICO coordinator, having determined the student’s points earned for the day, provides praise and encouragement and gives the student a small reward if they meet their point goal. A copy of the DPR is given to the student to take home for a parent’s signature, to be returned the next day to the CICO coordinator (Hawken et al., 2014).

Many studies have investigated the effectiveness of CICO, with results demonstrating a decrease in problem behaviors and an increase in academic engagement across student populations (e.g., Maggin et al., 2015; Wolfe et al., 2016). This success has contributed to its widespread adoption, especially as a targeted intervention in tiered support frameworks such as PBIS. PBIS has been critiqued as being “race neutral,” and without proper guidance,

teachers may ignore the racial, ethnic, and/or cultural identity of their students, which can lead them to misinterpret their behavior (Levenson et al., 2021; Vincent & Tobin, 2011). Tiered support frameworks and the practices within them should be responsive to the cultures and communities the school serves. Yet, despite the popularity of the CICO intervention, there are very few experimental studies on a culturally adapted CICO protocol (A. R. Campbell, Sallese, Thompson, Burke, & Allen, 2023; A. R. Campbell, Sallese, Thompson, Fournier, & Allen, 2023) and a limited amount of guidance on cultural considerations for implementing CICO (National Technical Assistance Center for Positive Behavior Interventions and Supports & the University of Missouri Center for Schoolwide Positive Behavior Support, 2016).

Culturally Responsive Intervention Package Development and Framework

Culturally competent educational practices and experiences can offer children mirrors to ponder on their individual beliefs, culture, and individuality, as well as sliding glass doors (or windows) that allow students, through consideration, empathy, and or imagination, to better understand the cultures, identities, and uniqueness of others (Ladson-Billings, 1995). For instance, culturally responsive SEL compliments and admires children's individual, familial, and environmental identities and upbringing while forming children's self-awareness abilities (Jagers et al., 2018). Likewise, it encourages children to rethink how others see their individual identities and upbringings and how they, in turn, see others. Being responsive and valuing children's philosophies, cultures, and identities via culturally responsive SEL practices can influence school climate and safety in remarkable and substantive ways. Furthermore, it is imperative for schools, administrators, and teachers to take on the position of students and independently and jointly foster, urge, and attend to the voices of students and their individual family makeups regarding their lived experiences and goals for their student's education, what is needed to support goals and interests. These voices can strongly advise educators' reflection and methods to modify practices and interventions that enhance the development and support of culturally responsive, equitable learning spaces for children (Paris & Alim, 2017). In reviewing frameworks to guide school-based interventions and practices, there are currently none that are evidence based. However, there are a number of frameworks to help guide educators in policy creation, such as the Culturally Responsive-Sustaining Framework (New York State Education Department, 2019). The Culturally Responsive-Sustaining Framework is centered on four tenets: a welcoming and affirming environment, high expectations and rigorous instruction, inclusive curriculum and assessment, and ongoing professional learning. This framework, among others, centers well on psychology, mental health, and counseling environments. However, to guide learning spaces and classrooms, cultural adaptations and modifications to frameworks are necessary. For this intervention and targeted population of Black learners with or at risk of EBD in rural underserved spaces, this study employed the cultural adaptation framework of social interventions in mental health as a guide (Fendt-Newlin et al., 2020). This framework operates from the premise that acknowledges that individuals and their emotional well-being and competence are the results of their background, customs, traditions, and way of life to inform the advancement and change necessary to adapt and assess sociocultural interventions for individuals.

Purpose of the Study

The special education identification and exclusionary discipline rates are indicative of systemic issues in the way schools address the needs of Black learners, especially those with and at risk for EBD, and calls for an intentional review of the social-emotional and behavioral practice protocols for cultural fit. Promoting successful school experiences for students with EBD can be challenging. This is due to the necessity for multifaceted and cohesive programming to meet their complex and intensive needs (Gaylord-Harden et al., 2007). Studies have shown that universal SEL programming and CICO are individually effective with the general student population, but few studies have examined the effectiveness of culturally adapted implementation of these interventions. Students with EBD often need targeted or intensive supports in addition to the universal level supports to prompt and reinforce the concepts to see meaningful behavior change. Emerging research suggests that CICO is a beneficial secondary targeted intervention pair with a culturally adapted universal SEL program (A. R. Campbell, Sallese, Thompson, Burke, & Allen, 2023; A. R. Campbell, Sallese, Thompson, Fournier, & Allen, 2023). However, additional research is needed to explore the generalizability of this finding and further contribute to the limited cultural adaptation literature base. The purpose of the present study was to conduct a systematic replication of Campbell et al.'s studies (A. R. Campbell, Sallese, Thompson, Burke, & Allen, 2023; A. R. Campbell, Sallese, Thompson, Fournier, & Allen, 2023) by evaluating the impact of the intervention on a rural student population (v. urban) in a different geographic region of the country. In addition, this study extends the previous work by incorporating content on culturally responsive teaching into the prestudy training for the teacher implementors in addition to the information about study procedures. The research questions are as follows:

Research Question 1: Is there a functional relation between a culturally adapted intervention package, including a universal SEL program and CICO, and a reduction in the rate of externalizing behavior of Black students with or at risk for EBD in a rural public school setting?

Research Question 2: To what degree are the goals, procedures, and outcomes of the culturally adapted intervention package (SEL Program + CICO) socially valid to teacher and student participants?

Method

Setting and Participants

This study took place during the regular school year at a rural public elementary school in the northeast region of the United States. The Title 1 school serves approximately 700 students in kindergarten through fifth grade, with 100% of students eligible for free and reduced lunch. Publicly available school demographic data shows a population comprised of 54.9% Black or African American students, 28.4% White students, 13.1% students from two or more races, 2.7% Hispanic/Latino students, and .8% students selecting the Other category. Study procedures occurred in three general education classrooms.

After institutional review board approval, the research team collaborated with school leadership to identify teachers willing to participate as the interventionists for the study (i.e., implement the

intervention package with eligible and consenting students). Three teachers volunteered, representing first (female, White, 14 years of experience, master's degree), second (female, White, 18 years of experience, master's degree), and third grade (male, Black, 3 years of experience, bachelor's degree). All teachers attended a traditional teacher preparation program (TPP). The research team asked initial informational questions related to their TPP experiences, which revealed that the first- and second-grade teachers did not have a stand-alone behavior management class and did not believe their TPP adequately prepared them to work with students with and at risk for EBD. All three teachers shared that they did not believe their TPP appropriately prepared them to work with racially diverse students.

Participating teachers evaluated their class for potentially eligible participants meeting the following criteria: (a) identified as Black, (b) used English as their first language, and (c) regularly exhibited problem behavior in the classroom based on teacher report. After obtaining parent permission, teachers screened potentially eligible students meeting the initial eligibility criteria with the Social Skills Improvement System Rating Scales Social-Emotional Learning Edition (SSIS-SEL; F. M. Gresham & Elliott, 2017). The research team then asked teachers to invite the students scoring *below average* or *well below average* in the composite SEL score category on the SSIS-SEL to participate in the study. A total of 11 students participated in the study spread out across three classrooms, with four students in the first grade (one female, three male), four students in the second grade (one female, three male), and three students in the third grade (one female, two male). Student ages ranged from 6 to 9 years old, and five students received special education services under various disability categories (autism, emotional disturbance, intellectual disability, speech or language, specific learning disability). [Supplemental Table S1](#) outlines individual student demographic characteristics.

Measures

Screeners

Students needed to display externalizing behavior (teacher report) and score in the *below-average* or *well-below-average* range in the SEL composite category of the SSIS-SEL teacher form to be invited to participate in the study (i.e., ensuring the student displayed needs in the externalizing and internalizing behavior domains). The SSIS-SEL is a norm-referenced multitrait (e.g., teacher, parents, student) series of rating forms designed to assess the five major SEL competencies (i.e., self-awareness, self-management, social awareness, relationship skills, and responsible decision making; F. M. Gresham & Elliott, 2017). Each form takes 10–25 min to complete, and the teacher form contains 51 items relating to SEL and seven items concentrating on the student's academic competence. Assessment developers explain that the SSIS-SEL rating forms are a reconfiguration of the established SSIS (F. M. Gresham & Elliott, 2008) to align outcomes with the five competency domains identified by CASEL (F. Gresham et al., 2020). Prior research shows evidence of strong psychometric properties, with F. Gresham et al. (2020) reporting internal consistency ($\alpha = .97$; ages 5–12), test-retest ($r = .84$), and interrater reliability ($r = .69$) estimate scores that met or exceeded acceptable levels for the SEL composite scale on the teacher form. The confirmatory factor analysis analyzing the fit of the SSIS-SEL to the CASEL SEL model (five domain

competencies) revealed an adequate fit of the parent and student form and a mediocre fit of the teacher form (F. Gresham et al., 2020).

Outcome Variable

The primary and decision-making outcome variable was the student rate of externalizing behavior, which collectively represented behavior in the following four categories: noncompliance, disruption, negative verbal or physical interactions with a peer or adult, and leaving the assigned workspace. Study-specific categories of externalizing behaviors and corresponding definitions were informed by the research literature (A. Campbell & Anderson, 2008) and read as follows: (a) *noncompliance (off-task)*, that is, students' refusal (e.g., verbally or nonverbally) to follow the directions given by teaching staff within 10 s of the request; (b) *disruption*, that is, talking out loud without teacher permission during a whole or small group activity, speaking to peers when the expectation is to be quiet, or engaging in other behaviors that may interrupt instruction such as noises or making faces; (c) *negative verbal and physical interactions*, that is, any form of undesirable physical interaction or derogatory verbal statement toward an adult or peer; and (d) *leaving assigned area*, that is, the student leaves the assigned area without permission.

Members of the research team measured the primary outcome variable (i.e., externalizing behavior) by systematic direct observation, using pen and paper, across 20-min video-recorded sessions using a 1-min partial-interval recording system resulting in 20 intervals. Data were reported as a percentage of 1-min intervals with externalizing behavior by dividing the number of intervals with externalizing behavior (i.e., occurrence of at least one externalizing behavior in any of the four categories) by the total number of intervals. In this study, the primary outcome variable is the student rate of externalizing behavior as measured by observation (i.e., not CICO point card totals). The 20-min period served as a representative sample of overall behavior to evaluate if a positive change occurred with the introduction of the intervention.

Data collection occurred at the same time of day and subject matter for each teacher across all phases (i.e., baseline, intervention, maintenance). To accommodate scheduling preferences, teachers selected a consistent 20-min data collection period in the English language arts (first grade) or math block (second grade, third grade) at the beginning of the study and then independently turned on the video recording equipment at that same time each day. All videos were regularly uploaded to a secure cloud storage website for visual analysis procedures.

Interobserver Agreement

The first author and doctoral-level graduate students with experience in classroom settings served as the data collectors. Before the study onset, the data collectors met for training, which included explicit instruction on data collection procedures and the definitions for the four areas of externalizing behavior and practice with sample videos. To adhere to the current guidelines (What Works Clearinghouse, 2022), a second independent observer collected data for at least 20% of the sessions across each phase (33%, baseline; 20%, intervention; 29%, maintenance) for all participants. The total agreement was calculated by summing the intervals observers agreed, dividing the sum by the total number of

intervals, and multiplying by 100 to obtain a percentage of agreement score. Results show acceptable agreement (80% standard; [What Works Clearinghouse, 2022](#)) in baseline ($M = 90.3\%$), intervention ($M = 88.7\%$), and maintenance ($M = 88\%$).

Social Validity

Researchers solicited teacher and student feedback on the social validity of the intervention package's goals, procedures, and outcomes ([Wolf, 1978](#)). After the study procedures were complete, a research team member conducted individual semistructured interviews with participating teachers and students using researcher-created questions. The questions for the teacher interviews focused on their (a) perception of improvement in academics, behavior, and overall effectiveness in helping the student become more engaged and successful in the class, (b) the extent to which they would recommend the intervention package, (c) and the feasibility of the intervention procedures. Teachers first rated their answers to the question on a scale of 1–4 (scale description depending on the question) and then were invited to offer additional comments. Student questions related to their (a) comfortability with and usefulness of study procedures, (b) perceived impact on behavior, and (c) likes and dislikes of the intervention package. In this study, the choice for a researcher-created interview protocol with study-specific questions (i.e., rather than a validated social validity measure) stemmed from a desire to get targeted information on the unique elements of the intervention package to inform future applications of the intervention protocol. The primary author developed the questions based on prior related research ([A. R. Campbell, Sallèse, Thompson, Burke, & Allen, 2023](#); [A. R. Campbell, Sallèse, Thompson, Fournier, & Allen, 2023](#)) and piloted questions (i.e., feedback and revisions) with three educators before conducting the interviews.

Experimental Design

The research team employed a multiple baseline across classes and single-case experimental design ([Ledford & Gast, 2018](#)) to evaluate the effectiveness of a culturally adapted intervention package (SEL + CICO) on the frequency of student externalizing behavior. All three classes began baseline data collection simultaneously (i.e., concurrent baseline data collection), and the analysis team used a response-guided decision-making approach ([Ledford et al., 2023](#)) to establish the order in which each class entered the intervention phase. Intervention onset for the first class was determined by visually examining the graphed student baseline data from all three classes for stability, trend, and need, respectively. The analysis team selected the first-grade class to enter the intervention first based on high levels of externalizing behavior with the least trend and variability compared with the other classes. Subsequent classes entered the intervention phase based on the same decision rules (i.e., stability, trend, need) when the previous class demonstrated a minimum of three data points postbaseline with a decelerating trend or clear intercept gap showing a decrease in externalizing behavior. Classes entered a maintenance condition after 20 successful intervention sessions, as determined by overall mean level change. During the maintenance condition, teachers did not implement the CICO intervention with the student participants or the SEL curriculum.

General Procedures

Training and Baseline

All participating teachers attended a 3-hr training from the first author focused on study procedures (e.g., data collection, study design and phase changes, procedural fidelity), culturally responsive teaching, and the targeted interventions (SEL curriculum + CICO) with a specific emphasis on the cultural adaptations. Training activities included explicit instruction, discussion, and role-play with practice and feedback. The teachers received the following materials: (a) an audio recorder, (b) a camera, (c) the culturally adapted grade-specific SEL curriculum with corresponding storybooks, (d) copies of the CICO daily behavior report card, (e) CICO fidelity forms, (f) and small tangible rewards for the students. This study employed a business-as-usual baseline condition, where the teachers were free to provide any level of academic or behavioral support they would normally provide to the student. The school did not have a formal tiered support framework (i.e., multitiered system of supports, PBIS) or a school-wide adopted SEL curriculum, and none of the teachers were currently or had previously implemented CICO or an SEL curriculum.

Culturally Adapted Intervention Package: SEL + CICO

Social-Emotional Learning Curriculum. Merrell's Strong Kids program was used for the SEL curriculum portion of the intervention package. The SEL program provides grade-banded materials for students in early childhood through high school settings. First- and second-grade teachers used the Strong Start: Grades K–2 set of lessons ([Whitcomb & Parisi Damico, 2016](#)), and the third-grade teacher taught lessons from the Strong Kids: Grades 3–5 edition ([Carizales-Engelmann et al., 2016](#)). Teachers taught the entire class two 45-min lessons per week, with the option to spread out a lesson for 2 days. Strong Start (K–2) consisted of 10 sequenced lessons with two additional booster lessons, and Strong Kids (3–5) provided 12 sequenced lessons. At the end of the 10 lessons, if the first or second grade met the requirements for the maintenance phase, they ended the curriculum at that time, and if they did not meet the requirements, they proceeded with the two booster lessons. First grade completed 10 lessons, and the second-grade class received the two booster lessons. The Strong Kids SEL program lessons are partially scripted and involve instructional scaffolding, a review of past content, explicit instruction, examples and nonexamples, opportunities to practice and receive feedback, and focused activities to promote generalization and maintenance of skills. Age-appropriate lessons focus on teaching appropriate prosocial behaviors, SEL competencies, and topics such as understanding their feelings/emotions and the feelings/emotions of others, how to respond to common emotions/feelings, solving problems, relationship skills, and positive thinking. The lessons include children's literature to guide the discussion and provide further context to the concept covered in the lesson.

Researchers made cultural adaptations to the Strong Kids SEL Program based on the cultural adaptation framework of social interventions in mental health ([Fendt-Newlin et al., 2020](#)). To adapt the SEL curriculum, the lead researcher first hosted focus group discussions with members (see Phase 1 of [Figure 1](#)) from the feeder community center in the school neighborhood, teachers who were part of the leader coalition on campus, and school leaders and administrators involved with behavior at the research site

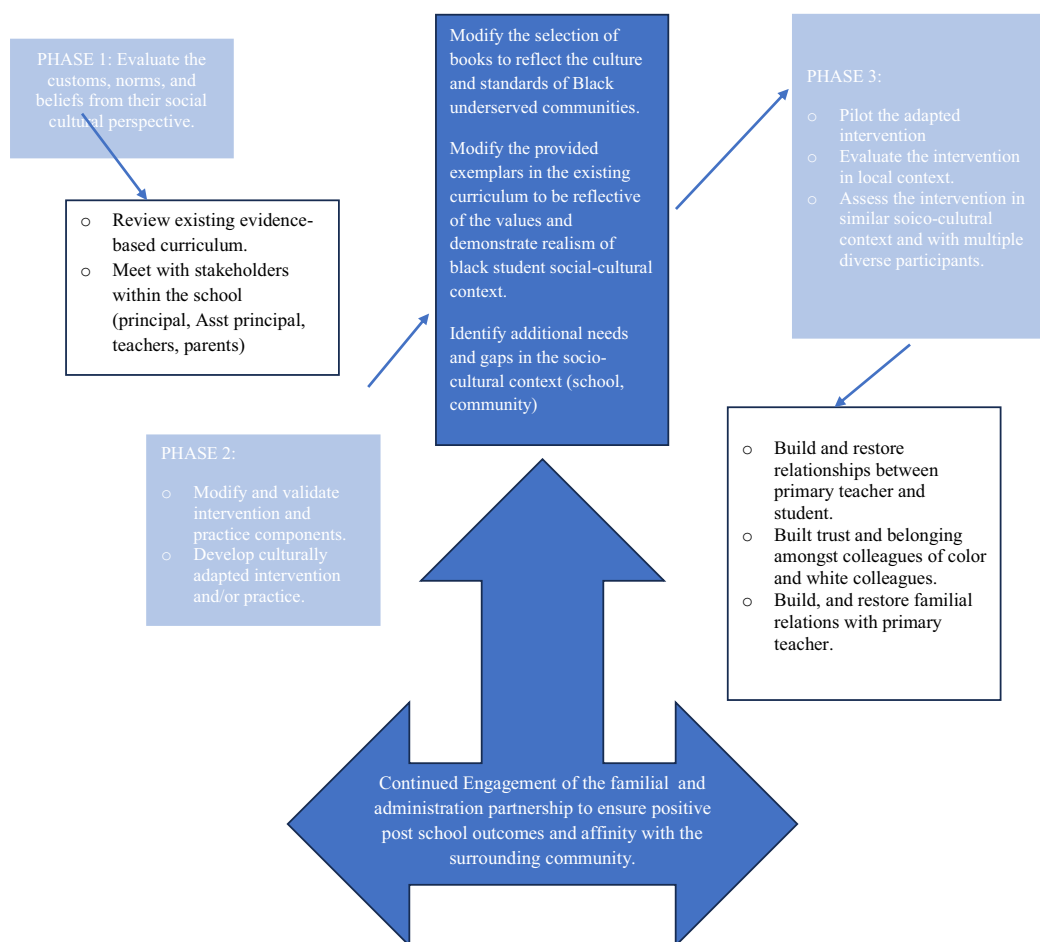
(e.g., behavior dean, vice principal, counselor). Based on this feedback, the existing curriculum was reviewed by the lead author and members of the research team for alignment with the community's standards and norms, and any necessary edits were made to the standard protocol. The suggested book list to support the SEL lessons was identified as one area in need of changes and was therefore adapted to reflect and best serve the student population in this study (i.e., Black learners). Books were selected to include characters that were reflective of Black students, current events that are plaguing underserved Black communities (police and neighborhood community partnerships), stories focused on goal achievement and building (what children can become when they grow up), and last, neutral characters (animals, colors, imaginary figures) when explaining the concept of emotion and feelings. See [Supplemental Table S2](#) for the updated booklist. The stakeholder feedback (see Phase 2 of [Figure 1](#)) also highlighted the need for adaptations to the practice worksheets included in the curriculum, specifically modifying the independent nature of the assignment to incorporate modeling and roleplaying to deepen understanding of the emotion and appropriate reactions when they experience big emotions (e.g., mad, angry, frustration). Finally, the research team developed

updated vocabulary lists to align with modifications to the suggested literature and practice worksheets.

Check-In Check-Out. Student participants also engaged in culturally adapted CICO protocol with their homeroom teacher daily (see Phase 3 of [Figure 1](#)). Before the study onset, the research team continued the cultural adaption process on the standard CICO protocol guided by the cultural adaptation framework of social interventions in mental health ([Fendt-Newlin et al., 2020](#)). Based on stakeholder feedback from the focus group, it was determined that rapport and relationships between students and their homeroom teachers needed restoration. As a result, the first cultural adaptation to the standard CICO protocol was to have the primary teacher serve as the facilitator. Second, the CICO protocol was adapted to incorporate semistructured check-in scripts focused on relationship-building practices such as listening, asking, sharing, and paraphrasing what was heard and any agreements made (behavioral goals). Part of restoring the teacher–student relationship involves building home–school connections. The final adaptation made to standard CICO protocol was to ask the teachers to always communicate at least one positive message home even if the student did not meet their behavioral goal that day.

Figure 1

Culturally Adaptive Framework for Social/Emotional and Behavioral School Interventions



Note. See the online article for the color version of this figure.

Each morning, the students ate breakfast in their classroom. During this time, the teacher met with each student and (a) collected the previous day's signed point card and asked the student about any feedback they received from the parent or guardian about the point card; (b) engaged in conversation related to assignments due, needed supplies or materials, activities from the previous night, and any events that took place at home that they would like to share or if anything is bothering them socially, emotionally, or mentally; (c) presented the point card for the current day as well as asked the student if they needed time or space with another mentor in the building (coach, teacher counselor, etc., so time could be scheduled at some point in the day); (d) provided brief reminders of the expectations and goals; (e) engaged in action planning with the student related to displaying appropriate behavior throughout the day; (f) reviewed the number of points necessary to earn a reward at the end of the day; and finally (g) awarded the appropriate amount of points for behavior during check-in time.

The teacher kept the student's point card throughout the day, which listed the student's name, student goals with corresponding expectations, sections for recording points based on the expectations at specific time points, and a place to record the point goal and daily total. Student goals focused on displaying positive prosocial behaviors across school settings and directly aligned with the core concepts the students learned in the SEL curriculum. In consultation with the teacher, the research team selected two time points spread out across the day for the teacher to meet briefly with the student. During these brief meetings, the teacher facilitated a discussion with the student about their behavior for that interval, where they praised instances of meeting expectations, provided any needed prompts for growth areas in the next interval, and awarded points based on behavior. At the end of the school day, the teacher met to "check-out" with each of the participating students. During the check-out, the teacher (a) discussed the student's progress toward their goal, (b) totaled the number of points earned, (c) provided a reward if the child met their daily point goal, (d) action planned for the following day, and (e) completed the home report detailing the relevant information for parents/guardians and gave it to the student to take home. Teachers were encouraged to keep the discussion positive and encouraging, reteaching the behavioral expectations and strategies as necessary.

Procedural Fidelity

The Strong Kids SEL Program includes procedural fidelity forms for each lesson, designed to capture that instructional plan's unique elements. Before the study, the research team modified the program fidelity forms, where needed, to represent the updated cultural adaptations. Teachers self-reported fidelity on the researcher-modified fidelity forms at the end of every lesson, resulting in self-reported scores of 99% fidelity to lesson plan elements in the first, second, and third grades. The first author observed 50% of the Strong Kids Lessons for each teacher in person using the procedural fidelity forms and came to the same scores as the teacher self-report, showing 100% agreement. The research team provided teachers paper copies of two different CICO fidelity checklists (morning, afternoon) outlining the culturally adapted intervention steps to use as a resource during the check-in times and to self-report procedural fidelity for each student. Each checklist contained seven steps for a total of 14 steps, including morning and afternoon check-in times.

Teachers reported 98% adherence in the second grade, 97% in the third grade, and 100% adherence in the first grade. All morning and afternoon check-in times were audio recorded. The primary author listened to all the audio recordings for each participating student, and they found 100% agreement with the teacher's self-report.

Analyses

Visual Analysis

This study employed visual analysis as the primary method for analyzing outcome data (i.e., student rate of externalizing behavior) in this response-guided single-case experimental design. The research team was separated into two groups: the intervention team and the analysis team. In the present study, the intervention team coordinated with the school on site, recruited participants, and collected data. In contrast, the analysis team had minimal direct contact with the school (i.e., copied on emails), and they were masked to the identity of the student participants to lessen the potential for experimental bias in the analysis process. The analysis team visually inspected the masked real-time time-series graphs throughout the study for each class to assess the stability, level, trend, and variability to determine the need for a phase change (i.e., treatment onset, maintenance) and then communicated the action to the intervention team. At the end of the study, the primary author and the analysis team separately visually inspected each grade level's combined time-series graph for a summative visual analysis to determine the presence or absence of a functional relation (i.e., three-fourths rule; [Maggin et al., 2013](#)). A demonstration of effect is established by inspecting the data patterns for a clear mean-level change, a noticeable intercept gap, therapeutic trend, minimal variability, and little overlap between baseline and intervention. Agreement between the primary author and the analysis team's visual analysis was examined.

Hierarchical Linear Modeling

Complementary to visual analysis, a hierarchical linear modeling (HLM) approach is used for the quantitative synthesis of the personalized trials ([Moeyaert & Fingerhut, 2022](#)). Using this flexible modeling approach, the nested single-case experimental data structure is considered ([Moeyaert, Ferron, et al., 2014](#)), namely, repeated measures are nested within individuals. HLM takes the hierarchical nature of the data into account by modeling the dependency between repeated measures (i.e., Level 1 or measurement level) within participants (Level 2 or participant level). This results in an estimate of an overall intervention effect across cases in addition to participant-specific intervention effects. This approach also provides an estimate of the within-participant and between-participant variance ([Moeyaert, Ferron, et al., 2014](#)). In addition, moderators such as grade level can easily be added to the participant level of the two-level HLM. Because of all these possibilities, HLM is used in this study to complement the results of the visual analysis.

The hierarchical linear model, modeling the baseline externalizing behavior level, the immediate change in externalizing behavior level at the start of the intervention phase, and the linear time trend during the intervention phase, is displayed in [Equation 1](#) (i.e., Level 1) and [Equation 2](#) (i.e., Level 2):

$$\text{Level 2 : } \begin{cases} \beta_{0j} = \theta_0 + u_{0j} \\ \beta_{1j} = \theta_1 + u_{1j} \\ \beta_{2j} = \theta_2 + u_{2j} \end{cases} \text{ with } \begin{pmatrix} u_{0j} \\ u_{1j} \\ u_{2j} \end{pmatrix} \sim MVN \left[\begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}, \begin{pmatrix} \sigma_{u_0}^2 & \sigma_{u_{01}}^2 & \sigma_{u_{02}}^2 \\ \sigma_{u_{01}}^2 & \sigma_{u_{11}}^2 & \sigma_{u_{12}}^2 \\ \sigma_{u_{02}}^2 & \sigma_{u_{12}}^2 & \sigma_{u_{22}}^2 \end{pmatrix} \right]. \quad (2)$$

$$\begin{aligned} \text{Level 1 : } EX_{ij} &= \beta_{0j} + \beta_{1j} \text{ SEL/CICO}_{ij} \\ &+ \beta_{2j} \text{ SEL/CICO}_{ij} \times \text{Time}_{ij} \\ &+ e_{ij} \text{ with } e_{ij} \sim N(0, \sigma_e^2). \end{aligned} \quad (1)$$

In Equation 1, EX_{ij} refers to the outcome score (externalizing behavior level) at measurement occasion i , for subject j . SEL/CICO_{ij} is a dummy variable, equaling 0 when measurement occasion i for subject j belongs to the baseline phase, and equaling 1 during the intervention. Time_{ij} is the session number, centered around the first session of the intervention phase. Consequently, β_{0j} indicates the average EX level during the baseline phase for subject j . β_{1j} indicates the immediate change in EX level at the first session of the intervention phase, and β_{2j} refers to the linear time trend during the intervention phase. Last, e_{ij} indicates the normally distributed within-participant residuals. The within-participant residuals, e_{ij} s, are homogeneous, independent, and normally distributed with a within-participant variance σ_e^2 . The Level 1 coefficients are allowed to vary between participants, which is reflected in Equation 2 (i.e., Level 2 of the two-level HLM):

(see Equation 2 above)

In Equation 2, θ_0 indicates the mean EX baseline across all subjects. θ_1 indicates the mean immediate intervention level across individuals, and θ_2 indicates the average linear time trend across participants during the intervention phase. Referring to the same equation, u_{0j} , u_{1j} , and u_{2j} indicate the deviations from across participants' parameters. The deviations are assumed to be multivariate normally distributed. The diagonals of the variance-covariance matrix represent the between-participant variance in the baseline level, $\sigma_{u_0}^2$; the between-subject variance in immediate intervention effect, $\sigma_{u_{01}}^2$; and the between-subject variance in linear time trend during the intervention phase, $\sigma_{u_{02}}^2$. For an in-depth discussion and application of the interpretation of the two-level HLM coefficients for the analysis of single case experimental design data, see Moeyaert, Ferron, et al. (2014) and Moeyaert, Ugille, et al. (2014).

Results

Visual Analysis

First-grade students demonstrated high levels of externalizing behavior in baseline with minimal trend and variability ($M = 74\%$, $SD = 3.99$). This first group's data revealed a moderate intercept gap at intervention onset, a consistent decelerating therapeutic trend, and no overlap between conditions ($M = 31\%$, $SD = 13.49$). First grade was the only class to enter the maintenance condition, and the students maintained low and stable levels of externalizing behavior for seven data points ($M = 8\%$, $SD = 1.22$). Second-grade students displayed moderate to high levels of externalizing behavior with high levels of variability and an accelerating trend in baseline ($M = 73\%$, $SD = 16.39$). After the intervention was introduced, data for second grade showed a delayed decelerating therapeutic trend, data overlap between conditions, and high levels of variability ($M = 41\%$, $SD = 22.6$). During baseline, the third-grade students

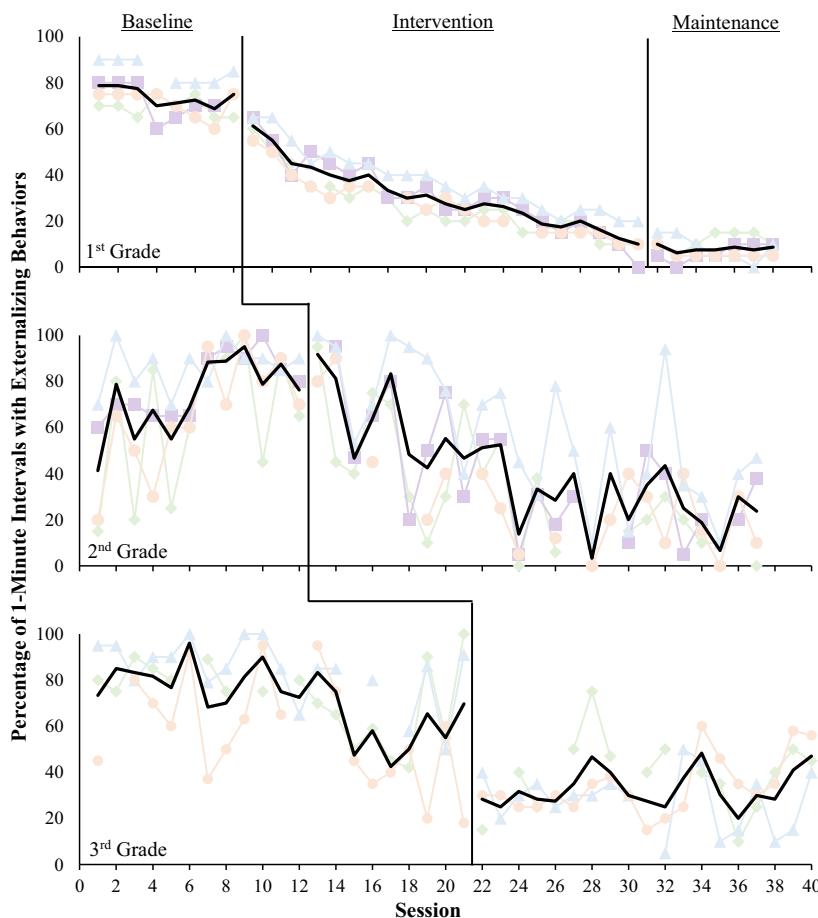
exhibited moderate to high levels of externalizing behavior with moderate variability and a slight decelerating trend ($M = 71\%$, $SD = 14.23$). Third-grade intervention data revealed an evident intercept gap and moderate variability ($M = 33\%$, $SD = 8.18$). All three tiers demonstrate a clear mean level change from baseline to the intervention phase and a consistent pattern of a decelerating trend after intervention onset. The primary author and analysis team independently agreed (100% agreement) that all tiers represent a demonstration of effect in a summative visual analysis evaluation, resulting in a functional relation between the intervention package and a decrease in student rate of externalizing behavior. See Figure 2 for a graphical display of externalizing behavior across grade levels.

Hierarchical Linear Modeling

The results of the two-level HLM across all participants from grade levels 1 to 3 are presented in Table 1. The estimated externalizing behavior level across all participants during the baseline phase is 73.01%, which is statistically significantly different from 0 [$\hat{\theta}_0 = 73.02\%$, $SE = 2.95$, 95% CI[66.54%, 75.51%], $t(11.2) = 24.74$, $p < .0001$]. There is a statistically significant decrease of 20.70% in externalizing behavior level when transitioning from the baseline to the intervention phase (i.e., immediate intervention effect). This indicates that the SEL intervention program is effective [$\hat{\theta}_1 = -20.70\%$, $SE = 4.19$, 95% CI[-29.82%, -11.58%], $t(11.3) = -4.98$, $p = .0004$]. Next, there is a statistically significant decrease in externalizing behavior during the intervention phase. With every additional intervention session, there is an estimated decrease of 1.81% in externalizing behavior [$\hat{\theta}_2 = -1.81\%$, $SE = 0.32$, 95% CI[-2.53%, -1.08%], $t(8.94) = -5.63$, $p = .0003$]. When looking at the random effect estimates, although not statistically significant, we can conclude that there is a large amount of between-participant variance in immediate intervention effect ($\sigma_{u_1}^2 = 118.59$, $SE = 80.25$, 95% CI[-0.18, 275.89], $Z = 1.48$, $p = .0697$). There is also a large amount of variance within participants ($\sigma_e^2 = 258.11$, $SE = 20.80$, 95% CI[0.09, 299.65], $Z = 12.44$, $p < .0001$).

Because the analysis presented above provides evidence for intervention heterogeneity, we added the moderator "Grade" to the two-level HLM. The moderator Grade is a participant-related characteristic and has the potential to explain the variability in intervention effectiveness between participants. The results are presented in Table 2. We can conclude that the immediate intervention effect is statistically significant and largest for participants from Grade 3. For that cohort, the immediate intervention effect is -41.05% [$\hat{\theta}_{1, \text{Grade}3} = -41.05\%$, $SE = 6.60$, 95% CI[-55.06%, -27.03%], $t(15.8) = -6.22$, $p < .0001$]. The immediate intervention effect is also large (but half as large relative to the intervention effect for Grade 3) and statistically significant for participants from grade level 1 and equals -22.61% [$\hat{\theta}_{1, \text{Grade}1} = -22.61\%$, $SE = 5.89$, 95% CI[-35.00%, -10.22%], $t(17.6) = -3.84$, $p = .0012$]. There is only a small and nonstatistically significant immediate intervention effect of -5.97% for participants from Grade 2 [$\hat{\theta}_{1, \text{Grade}2} = -5.97\%$, $SE = 5.64$, $t(14.9) = -1.06$, 95%

Figure 2
Student Rate of Externalizing Problem Behaviors



Note. Percentage of 1-min intervals with externalizing behavior per 20-min session. Triangle, circle, diamond, and square represent a different student within the tier. Dark bold line represents the mean rate of externalizing behavior across student participants within the class. See the online article for the color version of this figure.

CI $[-17.99, .05]$, $p = .3065$]. Next, the linear time trends during the intervention phase for participants from Grade 1 [$\hat{\theta}_{2, \text{Grade 1}} = -2.18\%$, $SE = 0.30$, $t(329) = -7.24$, 95% CI $[-2.77, -1.59]$, $p < .0001$] and Grade 2 [$\hat{\theta}_{2, \text{Grade 2}} = -2.61\%$, $SE = 0.27$, $t(331) = -9.77$, 95%

CI $[-3.13, -2.08]$, $p < .0001$] are negative and statistically significant. This indicates that per extra intervention session, the externalizing behavior level is further reduced with 2.18% and 2.61% for Grade 1 and Grade 2, respectively. The linear time trend for grade level 3 is very

Table 1
Results of Two-Level Hierarchical Linear Modeling

Effect	Parameter notation	Parameter estimate	SE	p
Fixed effects				
Baseline level	θ_0	73.02	2.95	<.0001
Immediate intervention effect	θ_1	-20.70	4.19	.0004
Linear time trend during intervention	θ_2	-1.81	0.321	.0003
Random effects				
Baseline level	$\sigma^2_{u_0}$	72.39	40.27	.0361
Immediate intervention effect	$\sigma^2_{u_1}$	118.59	80.25	.0697
Linear time trend during intervention	$\sigma^2_{u_2}$	0.73	0.53	.0852
Within-residual variance	σ^2_e	258.11	20.80	<.0001

Note. Intervention = SEL + CICO; Outcome = externalizing behavior. SEL = social-emotional learning; CICO = check-in/check-out; SE = standard error.

Table 2
Results of Two-Level Hierarchical Linear Modeling With Inclusion of Participant Moderator "Grade"

Effect	Parameter notation	Parameter estimate	SE	p
Fixed effects				
Baseline level	θ_0	72.94	2.89	<.0001
Immediate intervention effect				
Grade 1	$\theta_{1, \text{Grade } 1}$	-22.61	5.89	.0012
Grade 2	$\theta_{1, \text{Grade } 2}$	-5.97	5.63	.3065
Grade 3	$\theta_{1, \text{Grade } 3}$	-41.05	5.64	<.0001
Linear time trend during intervention				
Grade 1	$\theta_{2, \text{Grade } 1}$	-2.18	0.30	<.0001
Grade 2	$\theta_{2, \text{Grade } 2}$	-2.61	0.27	<.0001
Grade 3	$\theta_{2, \text{Grade } 3}$	0.37	0.43	.3946
Random effects				
Baseline level	$\sigma_{\theta_0}^2$	68.73	37.99	.0352
Immediate intervention effect	$\sigma_{\theta_1}^2$	66.48	46.44	.0762
Linear time trend during intervention	$\sigma_{\theta_2}^2$	0.00	NA	NA
Within-residual variance	σ_ε^2	252.00	19.66	<.0001

Note. Intervention = SEL + CICO; Outcome = externalizing behavior. SEL = social-emotional learning; CICO = check-in/check-out; SE = standard error; NA = not applicable.

small and not statistically significant [$\hat{\theta}_{2, \text{Grade } 3} = 0.37\%$, $SE = 0.43$, $t(331) = 0.85$, 95% CI[-0.48, 1.22], $p = .3946$]. In sum, the moderator Grade explained variability in effectiveness of the intervention (i.e., immediate intervention effect, time trend during intervention). This is further evidenced by the decrease in between-participants variance (see random effects in Table 2).

Social Validity

The research team conducted semistructured interviews with participating teachers and students to evaluate the social validity of the intervention package. On a scale of 1 (*no improvement*) to 4 (*a lot of improvement*), teachers, on average, rated student growth in academic performance ($M = 2.72$) and student decrease in disruptive behavior ($M = 3$) due to their participation in the intervention as moderate. Next, teachers were asked how effective the intervention package was in helping their students become more engaged and successful in the classroom on a scale of 1 (*not effective*) to 4 (*very effective*), resulting in a mean score of 3.36. Finally, all three teachers indicated they would recommend or definitely recommend the intervention protocol ($M = 3.33/4$) and shared that they found the intervention procedures to be practical or very practical ($M = 3.67/4$). Two of the three teachers followed up their scores related to the practicality of the intervention procedures with an unprompted comment about how their students enjoyed the read-aloud books. In response to the opportunity to provide suggestions for improvement, two teachers discussed how they would have liked to spend more time diving into the concepts covered in the SEL lessons, mentioning that their students were coming to the lessons with limited background knowledge in these areas.

All but one student was individually interviewed by the primary author with the social validity interview protocol for a total of 10 interviews. Student X did not participate in the social validity interviews due to an extended absence at the end of the study. All students (100%) indicated that they (a) were comfortable meeting with their teacher for CICO check-in and check-out times, (b) liked receiving feedback from their teacher during the day, and (c) believed the intervention package improved their behavior.

Common themes in the responses to these three questions were that the student enjoyed their teacher listening to them (50%), the discussion was positive and made them feel good (80%), and they liked knowing and being able to talk about their goals (50%). Students overwhelmingly stated that their favorite part of the intervention package was the prizes (90%), and only two students provided a response for their least favorite part of the intervention ("all of the questions;" "that it stopped").

Discussion

This study examined the effects of a culturally adapted intervention package, including an SEL program and CICO, on the student rate of externalizing behavior and the social validity of the intervention in a rural elementary school setting with Black learners with or at risk for EBD. Intervention effects demonstrated an overall reduction in problem behaviors among Black students across all three tiers, illustrating a functional relation between the intervention and a decrease in externalizing behavior. Results from the HLM indicated a significant decrease of 20.7% in externalizing behavior level when transitioning from the baseline to the intervention phase (i.e., immediate intervention effect). These findings were prominent, demonstrating that a culturally adapted CICO with the classroom teacher and culturally adapted SEL program presents a productive approach for Black learners who exhibit challenging behaviors and have obstacles with emotional regulation. Additionally, teachers and students believed the goals, implementation guidelines, and outcomes of the intervention to be socially valid. This differs from the stakeholder reports from Graves et al.'s (2017) study, which found that curriculums, once adapted, are limited in relevance and effectiveness and pose concerns in relation to the absence of attention to issues specific to Black students. Stakeholders from the present study were pleased with the lead researcher and research team's application of their feedback and expressed that the culturally adapted intervention would work well across multiple settings and perhaps even with students from other diverse backgrounds.

In contrast to previous studies evaluating the Strong Kids Program in isolation (Caldarella et al., 2009; Graves et al., 2017; Merrell et al., 2008), results from the present study indicated positive effects in the area of externalizing behavior. Specifically, Merrell et al. (2008) discovered growth in social-emotional knowledge, but no significant change in externalizing problem behavior. Comparably, Caldarella et al. (2009) noted decreases in internalizing problems, with no decrease in externalizing behaviors. Data from this study with a rural student population mirror the outcomes with students in urban settings by A. R. Campbell, Sallèse, Thompson, Burke, and Allen (2023) and A. R. Campbell, Sallèse, Thompson, Fournier, and Allen (2023). These findings further support the pairing of CICO (targeted intervention) with a universal SEL program to support students with and at risk for EBD. The targeted intervention of CICO proactively prompted and then reinforced the behaviors aligned with the competencies of the classroom Tier 1 SEL program. This structured interaction between student and teacher was beneficial to both. Students were empowered to self-monitor and make decisions during the day that impacted their behavior and the learning environment. On the contrary, the intervention package offered teachers a systematic approach to provide opportunities for prompting, practice, and individualized feedback on the Tier 1 SEL content. Further, the intervention package provided space for relationship and rapport building among the classroom teacher, student, and the student's family. Perspectives regarding expectations, learning, and self-monitoring of behaviors were able to be shifted amongst the classroom teacher, student, and the student's family.

While case studies have linked effective SEL curricula implementation with reductions in exclusionary school discipline for non-White students, there are budding indications that disproportionate discipline effects continue in schools applying positive behavior interventions in schools (Kaufman et al., 2010; Vincent & Tobin, 2011). Thus, the results of this culturally adapted SEL and Tier 2 culturally adapted CICO intervention are in line with best practices intended to increase positive social-emotional outcomes in elementary school-aged children.

Identifying evidence-based interventions that are effective for Black students with or at risk of EBD is increasingly important considering the nationwide disproportionate representation of Black students in the emotional disturbance category and associated poor outcomes for students within the classification (Office of Special Education Programs, 2020). Findings from this intervention study add a potential efficacious culturally adapted framework and intervention to the school-based intervention research base. Despite the surge in research surrounding evidence-based culturally adapted treatments in social and medical sciences, these interventions have not been well rendered to populations of color (Whaley & Davis, 2007). Specifically, intervention studies of children with behavioral and social-emotional challenges often include fairly large samples of Black students. However, findings are not normally disaggregated by race (Reddy et al., 2009; Serpell et al., 2009). Due to the constant overrepresentation of Black students in the emotional disturbance special education category, studies that focus on marginalized populations who are at greater risk for poor postschool outcomes (e.g., Black students) must become a prominent pillar of the educational psychology field and public policy. Although few studies have verified the poor postschool outcomes associated with being a Black student in the public school system, the number of

practices, studies, and interventions created to aid this major concern has not followed suit. Therefore, continuous and focused intervention research with Black students across a variety of contexts with a culturally responsive lens should be embarked upon more often especially in schools.

Constraints on Generality

It is important to consider the constraints on generality when interpreting the results from this study. The present study appears to show evidence for the benefit of integrating cultural adaptations to the intervention protocol, with the data showing not only a decrease in externalizing behavior but strong social validity outcomes across teacher and student participants. There are a few differences between the related work by A. R. Campbell, Sallèse, Thompson, Burke, and Allen (2023) and A. R. Campbell, Sallèse, Thompson, Fournier, and Allen (2023) in the present study, including geographic region, community type (i.e., rural/urban), length of study, and divergence from same-race teacher implementors. Yet, the positive results mirror the studies by Campbell et al., increasing the confidence of the research team to believe the results will generalize to broader populations. However, this study and prior related work focus on Black students, and the studies occurred in schools with high populations of students of color, elementary students, and high percentages of students qualifying for free and reduced lunch. The extent to which divergence from these study elements would impact outcomes with this intervention is unknown. Finally, this study had a modest sample size ($n = 11$). In single-case research, the field makes generalizations through systematic replication rather than from a single large-N study. Although further research is required, there is no indication that the results of the present study are influenced by other characteristics of the participants, materials used, or the context.

Limitations

There are some limitations to consider for this study. First, due to time constraints, the maintenance phase was only completed with the first-grade tier. Additionally, researchers could not follow up on student progress the following academic year to assess skill maintenance over an extended period. Conducting maintenance with all tiers should be a priority in future studies to explore the dosage necessary to yield therapeutic effects. Second, the research protocol did not include the SSIS-SEL as a posttest measure. This would have allowed the research team to evaluate student participant growth in social-emotional competencies due to the intervention package. Including a distal measure (e.g., SSIS-SEL; Social Emotional Assets and Resilience Scale) alongside the proximal measure (i.e., direct observation of the primary outcome variable) in future studies would be beneficial. Third, when reviewing the results of this study, it is important to note that a partial-interval recording approach to measuring an outcome variable may underestimate high-frequency, short-duration behaviors, especially as the intervals increase in length (Ledford & Gast, 2018; Maag, 2018). The research team ultimately selected 1-min intervals in this study because of the duration of the most commonly displayed behaviors and the demands shorter interval lengths would pose on data collectors observing several students at a time. Finally, this culturally adapted intervention package included two separate

components, which does not provide the ability to differentiate the contributions of CICO compared with the SEL program. Future studies should consider research designs that can desegregate the contributions of individual components.

Implications for Practice and Future Research

By helping teachers build cultural competency, they were better prepared to support the behavioral and academic needs of Black students with or at risk of EBD in all school settings, including rural classrooms. Equipping teachers with the tools they need to successfully implement the SEL curriculum while managing and encouraging prosocial behavior in their classroom provides knowledge that can be helpful in creating a classroom environment that makes all students feel welcome, inclusive of students of color, diverse backgrounds, exceptionalities, and teaching strategies that support the needs of all learners. Researchers implementing SEL interventions in classrooms/schools with a diverse population need a level of cultural competency as well. SEL has not been found in U.S. studies to reduce externalizing behaviors, which can be disruptive to the learning environment. Last, practitioners and researchers when implementing interventions with Black students and those from other diverse groups must consider cultural fit to further the charge for all parties to be culturally competent when addressing behavior and academic concerns for these students including those with EBD.

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