The Resilience Education Program: Examining the Efficacy of a Tier 2 Internalizing Intervention

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Abstract

This study reports on the results of a pilot study designed to evaluate the Resilience Education Program: a brief Tier 2 intervention that includes small-group cognitive-behavioral instruction, paired with a modified Check In/Check Out procedure. Three elementary school students demonstrating early indicators of internalizing behavior concerns participated in the current intervention. A multiple-baseline single-case design was used to evaluate intervention effects. Outcome data corresponded to teacher-collected Direct Behavior Rating (DBR) data, which were specific to each student's particular internalizing concerns (e.g., negative affect, withdrawal) and were collected on a daily basis during times when these behaviors were most problematic. Visual analysis and effect size estimates were used in evaluating intervention effects relative to baseline conditions for each student. Results indicated REP yielded a moderate intervention effect for two out of three students (Tau-U = .72 and .68, respectively), each of whom exhibited an immediate reduction in internalizing behavior. Both students also demonstrated an absence of negative behaviors in the maintenance phase. Findings for the third student were obfuscated by low behavioral rates during baseline. Following the intervention, educators rated REP as a socially valid intervention. Limitations of this study and future directions for research and practice are discussed.

Keywords: internalizing behavior, school mental health, cognitive-behavior therapy, check-in check-out, single case design

The Resilience Education Program: Examining the Efficacy of a Tier 2 Internalizing Intervention

Recent estimates suggest that one out of every five students struggle with some type of mental health concern during their school career, with such concerns ranging from subsyndromal symptoms indicative of risk for disorders to more severe symptomatology indicative of disordered functioning (Merikangas et al., 2010; World Health Organization, 2004). When left untreated, children with mental health concerns are at increased risk for academic difficulties, social problems, illicit substance use, and reduced emotional functioning (Crews et al., 2007; King et al., 2015). Providing early identification and intervention for these concerns becomes paramount in beginning to decrease rates of mental health concerns.

Research suggest that when children receive mental health services, these supports are most likely to be provided within schools as part of a multi-tiered framework (Weist et al., 2018). With that said, not all types of mental health concerns are being addressed equally within schools. Additional research has suggested that while students exhibiting externalizing concerns (e.g., disruption, aggression, noncompliance) commonly receive the supports they require, those exhibiting internalizing concerns do not (Kilgus et al., 2015). Multiple reasons for such limited service delivery are plausible. First, fewer school-oriented internalizing interventions are available as compared to externalizing interventions (McIntosh et al., 2014). This disparity is particularly true for Tier 2 targeted interventions, as the resource and time-intensiveness of many existing internalizing interventions limits their use to services typically provided at Tier 3 or within special education (Bruhn et al., 2014). Second, many internalizing interventions lack empirical support for use within educational settings (Lyon et al., 2015). Accordingly, little is known regarding the feasibility of such strategies within real-world settings. The minimal

available evidence suggests mental health interventions for internalizing behaviors are "commonly characterized by incomplete implementation, restricted sustainability, and narrow spread" (Fazel et al., 2014, p. 382).

Researchers have recently turned their attention to developing and evaluating Tier 2 internalizing interventions with the capacity for feasible application within schools. One such intervention is the *Resilience Education Program* (REP; Kilgus & Eklund, 2017), which combines elements of cognitive-behavioral instruction and Check In/Check Out within a single integrated intervention strategy. The purpose of REP is to help students demonstrating early indicators of depression or anxiety-related concerns to develop effective coping skills and problem-solving strategies through the use of a brief intervention, paired with positive reinforcement of these strategies (see methods section for a full description of the intervention). REP has been supported through one single-case design study to date (Allen et al., 2018). The purpose of this investigation was to continue this line of pilot work by examining REP efficacy relative to baseline conditions with three students at-risk for internalizing concerns.

Internalizing Concerns and Multi-Tiered Systems

Internalizing problems are defined as a broad group of behaviors that include four main categories: depression, anxiety, withdrawal, and somatic problems (Levitt & Merrell, 2009). Internalizing problems can impact a child's behavioral, cognitive, affective, physiological, and psychosocial functioning– often influencing a child's relationship with peers, family members, their school, and their community (American Psychiatric Association, 2013). Recent estimates indicate that approximately 3% of children ages 3 to 17 have received a diagnosis of depression in the past year, with lifetime prevalence rates as high as 12.8% for individuals aged 12 to 17 (Perou et al., 2013). A similar trend is observed for children with anxiety-related disorders,

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which impact 6.6% of adolescents age 12 to 17, as well as 4.3% of children age six to 11 (Perou et al., 2013).

Given their prevalence and impact, calls have been made to address internalizing concerns through multi-tiered systems of supports in schools (Kilgus et al., 2015; McIntosh et al., 2014; Weist et al., 2018). Such an approach would bring internalizing service delivery in line with how schools commonly address academic challenges (via response to intervention [RTI]; Fuchs & Fuchs, 2006) and externalizing behavior concerns (e.g., via positive behavior interventions and supports [PBIS]; Sugai & Horner, 2002). It would also ensure a wider range of students with varying levels of need would receive the supports they require to be successful. Lines of research have provided solutions for addressing internalizing concerns across multiple levels of service delivery. For instance, social and emotional learning (SEL) curricula have been shown to influence internalizing concerns at Tier 1 (Durlak et al., 2011), while small-group and individual-level cognitive-behavioral therapies have proven effective and likely appropriate for students at Tier 2 and/or Tier 3 (assuming the school possesses sufficient resources and adequately trained mental health professionals; Hofmann et al., 2012). Emerging science is described in the next section.

Tier 2 Internalizing Interventions

Two major categories of Tier 2 internalizing interventions have emerged from multiple lines of research: (1) small-group skill instruction, and (2) mentor-based programs. These are described in more detail below.

Small-group Skill Instruction

The first intervention category includes instructional strategies that promote student acquisition and the use of key coping and problem-solving skills. The most prominent of these

strategies is cognitive behavioral therapy (CBT), which has been shown to be effective in addressing internalizing behavior concerns in children and adolescents (Butler et al., 2006; David-Ferdon & Kaslow, 2008). Cognitive-behavioral theory conceptualizes problematic internalizing symptoms as the result of negative thoughts and feelings. The manner in which thoughts, feelings, and behaviors are related is exemplified in the cognitive-behavioral "maintenance cycle." Per this cycle, triggering stimuli (e.g., walking into a room of people) result in automatic negative thoughts (e.g., "I look silly"). These thoughts can lead to negative feelings (e.g., embarrassment), which the individual attempts to combat with problematic "safety" behaviors (e.g., avoid eye contact). The goal then of CBT is to teach students various strategies through which to disrupt this cycle, such as cognitive restructuring, deep breathing, and positive imagery (Hofmann et al., 2013). Previous meta-analyses found support for the use of CBT among children and adolescents with internalizing problems, with large effects for anxiety (Cohen's d = 0.98; James et al., 2020) and medium effects for depression (Cohen's d = 0.66; Arnberg & Öst, 2014).

When used at Tier 2 and/or Tier 3 (often dependent upon school MTSS frameworks and definitions), CBT is often delivered in the form of manualized CBT-based interventions. A number of such interventions have been developed to date, with each amassing evidence of its own efficacy. Prominent examples include (but are not limited to) Cognitive Behavioral Intervention for Trauma in Schools (CBITS; Jaycox, 2004), the Adolescent Coping with Depression Course (CWD-A; Clarke et al., 1990), Coping Cat (Kendall & Hedtke, 2006), FRIENDS (Barrett et al., 2000), and the Penn Resiliency Program (Brunwasser et al., 2009). Despite their foundation in the literature, many of these and other CBT programs can prove challenging to implement at Tier 2 given the amount of time and training required of individuals

delivering the intervention (Lyon et al., 2015). Furthermore, due to their incorporation of a large number of small-group sessions, the aforementioned programs can require students to miss a large amount of instruction or involvement in other school-based activities (e.g., specials or recess).

Mentor-based Interventions

Recently, scholars have begun to evaluate mentor-based approaches to internalizing intervention. These strategies focus less on the explicit instruction of coping skills, instead emphasizing the positive reinforcement of students when they demonstrate desired behavioral expectations. One particular instance of a mentor-based program that has been evaluated relative to internalizing concerns is Check-in Check-out (CICO; Hawken & Horner, 2003). Through CICO, each student "checks-in" with their mentor in the morning to ensure they are prepared for the day and to remind the student of their behavioral expectations. The student is then provided with opportunities to monitor their own behavior and to be given performance feedback from their teacher at designated times throughout the day (e.g., after completing each academic subject) through daily progress reports (DPRs), a type of daily behavior report card. At the end of the day, the student "checks-out" with their mentor by reviewing the day's progress and receives positive reinforcement for the demonstration of appropriate behaviors.

Extant research has demonstrated CICO is effective in reducing student's externalizing behaviors and increasing academic engagement (Hawken et al., 2014; Maggin et al., 2015). Recently, researchers have recently begun to examine the effect of modified CICO interventions on internalizing concerns. For example, Hunter and colleagues (2014) evaluated the effectiveness of an internalizing-oriented CICO intervention, which was modified to provide students feedback on their use of positive behaviors that were incompatible with their internalizing symptoms (e.g., participating in group activities rather than being withdrawn). Visual analysis of the multiple baseline single-case design study indicated the modified CICO program was associated with improved positive student behavior (as indicated by daily teacher DPR ratings) for all students relative to baseline. An overall percent of all nonoverlapping data (PAND) effect size statistic fell in the "effective" range (PAND = 0.87).

Other mentor-based programs have incorporated abbreviated instructional components, intended to teach one or more skills to combat internalizing symptoms. For instance, the Confidence and Courage through Mentoring Program (CCMP) combines an internalizing-oriented form of CICO (similar to that used in Hunter et al. [2014]) with a brief psychoeducation component; Cook et al., 2015). Through two 40-minute one-on-one psychoeducation sessions, the mentor teaches the student a common language for their feelings, normalizes the experience of strong emotions, and an emotion regulation strategy in the form of a "Life Bus" metaphor. To date, two single-case design studies have yielded positive findings. More specifically, Cook et al. (2015) documented positive effects in relation to student self-ratings of distress, with nonoverlap of all pairs (NAP) effect size estimates ranging from 0.84 to 0.96 across the five student participants. Fiat et al. (2017) documented similarly large effects in relation to daily teacher Direct Behavior Ratings (DBRs) of internalizing behavior, with NAP estimates ranging from 0.77 to 1.00 across the six student participants.

Despite their promising initial evidence, it is likely that mentor-based interventions (and other strategies primarily founded upon differential reinforcement), may not be effective for all students exhibiting internalizing concerns (Stichter et al., 2018). Strategies founded upon reinforcement are likely to be appropriate for students who have learned coping skills but require feedback and incentive to display them with greater frequency when necessary (Reinke et al., 2012). If a student has yet to learn these coping skills, they will not be displayed and thus cannot be reinforced. It is likely for this reason that mentor-based interventions like CCMP have incorporated instructional components to increase the likelihood of students exhibiting desired skills. Unfortunately, the brevity of this instructional component, including only two lessons pertaining to a single skill, might not be sufficient to address the internalizing concerns of some. As a result, researchers have begun to examine interventions that integrate both (1) CBT-oriented skill instruction that is still abbreviated, but pertains to a broader range of coping skills, and (2) mentor-based programs like CICO, through which these skills are reinforced. One such intervention is the *Resilience Education Program* (REP).

Resilience Education Program

REP is a targeted Tier 2 program designed for upper elementary and middle school students who are at risk of internalizing concerns. REP represents an integrated intervention strategy that combines two core evidence-based interventions: CICO and small-group cognitive-behavioral instruction. Through the brief five-lesson CBI curriculum, children learn skills to combat and prevent internalizing problems, including cognitive restructuring, deep breathing, and problem-solving strategies. These lessons can be co-taught by school mental health professionals (e.g., school psychologists, social workers) alongside other educators familiar with the students in each group (e.g., teacher, school staff). CICO then supports adult prompting and reinforcement of both instructed skills and positive behaviors incompatible with internalizing symptoms specific to each student. Reinforcement extends across home and school, with both educators and parents participating in the delivery and praise of rewards. (Note: additional information regarding REP procedures is provided in the Method section below.)

A pilot study was conducted that yielded promising evidence for REP. Allen and colleagues (2018) employed a multiple baseline single-case design in evaluating REP efficacy across three students. Visual analysis of systematic direct observation data indicated REP implementation was associated with decreased internalizing problems (e.g., negative affect and worry) and increased social engagement for two of the three students. Effect sizes for these two individuals fell in the moderate range for both internalizing behaviors (PAND = .79–.83) and social engagement (PAND = .75–.80). These findings were corroborated through teacher ratings on the *Behavior Assessment System for Children – Third Edition* (BASC-3), with noted decreases in internalizing subscale scores. Finally, ratings on the *Usage Rating Profile – Intervention, Revised* (URP-IR) indicated classroom teachers and educators found the CICO component to be acceptable and feasible. Despite this initial promising efficacy evidence, additional research is now necessary to better establish REP performance and justify its use in schools.

Study Purpose

Given the aforementioned results, the purpose of the current study was to provide additional evidence regarding the efficacy of the REP intervention using different study outcome variables than the initial Allen and colleagues (2018) study. This investigation employed singlecase design methodology and each student's teacher completed a DBR that was specific to each student's internalizing behavior concerns. The current research questions examined the impact of the REP curriculum on teacher perceptions of student's internalizing behaviors as rated by a direct behavior rating measure. In accordance with existing evidence, it was anticipated that REP implementation would be associated with moderate decreases in student internalizing behavior concerns relative to baseline. It was further anticipated that effects would be maintained over time following intervention termination. The current study also built upon previous work by assessing REP social validity. More specifically, using the *Usage Rating Profile-Intervention, Revised* (URP-IR), we examined to what extent teachers perceived REP to be an acceptable and usable targeted intervention for students with internalizing concerns. Research has supported the importance of such evidence, suggesting practices are more likely to be implemented if they are perceived as feasible (Perepletchikova & Kazdin, 2005). Given that it was intentionally designed to be feasible and acceptable to educators, it was anticipated REP would be rated by teachers as a socially valid intervention.

Method

Participants and Setting

Participants included three students from a suburban elementary school in the Midwest. The current K-5 school included 574 students; 72% are Caucasian, 10% African American, 9% Latinx, and 9% mixed race. Forty-nine percent of students qualified for free or reduced-price lunch. Student 1 was a White 11-year-old boy in the fifth grade. Prior to intervention, teachers provided qualitative and quantitative student behavioral data, described in the procedures section below. Based on data gathered from teacher interviews and behavior rating scales prior to the intervention, Student 1's teacher indicated he was often critical of himself, reserved, and withdrawn from interactions with others. Student 2 was a White nine-year-old boy in the fourth grade. His teacher indicated that prior to intervention, Student 2 had difficulty being positive, tending to look at everything negatively. He was also described as talking back to the teacher when presented with directions. Student 3 was a White ten-year-old boy in the fourth grade. His teacher reported that prior to intervention, Student 3 had difficulty rebounding from stressors or setbacks. As a result, he would often engage in prolonged crying episodes. The school had universal interventions in place for all students based on positive behavioral interventions and supports (PBIS). Specifically, the school had three schoolwide behavioral expectations (e.g., "Be Safe", "Be Kind", "Be Respectful"). Specific examples of each of these behavioral expectations were posted throughout the school and students' occurrences of these behaviors were reinforced through a token economy system. As part of PBIS, students received tickets contingent upon appropriate behavior. These tickets could then be entered into a lottery drawing at the end of the week. The more tickets a student earned, the greater the chance the student had of winning a reward through the lottery. Available rewards included having lunch with the principal, extra recess time, and access to computers. Beyond Tier 1, the school also commonly implemented Tier 2 supports for student exhibiting externalizing concerns. Such supports included CICO and small-group social skills instruction.

Recruitment

Researchers first met with administrators at the school to determine which teachers might be interested in participating. All three teachers that were identified subsequently consented to participating in this investigation following the provision of information regarding the study purposes, the type of concerns targeted through the intervention, and associated study procedures. Participating students within each classroom were then identified via a multi-step approach. First, as part of normal educational practice, all teachers within the school conducted a universal screening of their classroom using the *Social, Academic, and Emotional Behavior Risk Screener* (SAEBRS; Kilgus & von der Embse, 2014) in the fall of the school year to identify students' exhibiting social-emotional and behavioral risk. In accordance with our focus on students requiring Tier 2 supports due to internalizing concerns, students were considered eligible for participation if they were exhibiting risk on both the Total Behavior subscale (score \leq 36 on the 0-57 scale) and the Emotional Behavior subscale (score \leq 16 on the 0-21 scale). The Emotional Behavior subscale consists of 7 items rated on a 4-point Likert scale and is designed to assess students with internalizing behavior concerns (e.g., sadness, worry, withdrawal). Second, if more than one student was identified within a classroom, teachers nominated the student they felt was most appropriate for the REP intervention based on a student demonstrating internalizing behavior concerns (rather than the presence of comorbid internalizing and externalizing concerns). This was done to limit any confounding influences of including students with externalizing behaviors in order to estimate the efficacy of the REP intervention when used with students with internalizing concerns alone. None of the participating students were receiving special education services or had previously received Tier 2 supports.

Teachers sent consent forms to the parents of each nominated student. Following receipt of parent consent, students were approached to attain student assent. Consent and assent were ultimately attained for all nominated students. Next, researchers conducted a semi-structured interview with each teacher to support identification of the types of internalizing behaviors each student commonly exhibited and were of most concern. This information was then used for two purposes. First, once each teacher and researchers agreed upon which behaviors should be targeted for intervention, the researcher established an agreed-upon operational definition of that behavior. Teachers then rated the behavior (while considering its corresponding operational definition) on a daily basis using a DBR as part of outcome measurement. Second, teachers and researchers collaboratively identified a positive behavior that was incompatible with the problem behavior that could be included as an additional target behavior on the student's daily progress report (described below). Through the daily progress report, teachers and mentors were able to prompt and praise the student for engaging in the positive behavior, while also monitoring its frequency over time.

To support the staggered introduction of REP across student participants, it was necessary to have each student participate in their own CBI small group. To ensure CBI reflected its intended structure, it was necessary to recruit other non-participant students for intervention. These students were recruited from other classrooms within the same school so that each student was in a small group with 2-3 other students. Though these students received all REP components, no outcome data were collected for these individuals. Educators attained consent for their participation in the intervention via their normal procedures.

Measures

Student response to REP was evaluated via Direct Behavior Rating (DBR) single-item scales (Chafouleas, 2011). DBR represents a hybrid of assessment tools, combining the characteristics of behavior rating scales and systematic direct observations (Chafouleas, Riley-Tillman, & Christ, 2009). DBR is like direct observation in that both tools are designed to be used in a formative (repeated) fashion to estimate the behavior exhibited within a particular context (e.g., reading from 9:00 – 10:30am). DBR is also similar to a rating scale in that data collection requires an individual (e.g., classroom teacher) to complete brief ratings to evaluate an individual student's behavior. In the context of DBR, single-item scales represent broadly defined behavior targets rated on a 0-10 scale regarding the percentage of time the behavior was displayed within the specific context on that particular day.

In accordance with prior research regarding Tier 2 internalizing interventions (e.g., Dart et al., 2015; Fiat et al., 2017), individualized DBR single-item scales were created for each student participant. Student 1 was evaluated for withdrawal, which was defined as drawing back from a place or position. Examples of withdrawal included staying away from people, refusing to interact with others, not speaking, being unusually quiet, keeping to self, or showing disinterest in one's environment. Student 2 was evaluated for Negative Affect, which was defined as facial expressions, nonverbal body language, or verbal statements that signaled the individual was feeling unhappy, annoyed, or disinterested. Examples of negative affect included frowning, clinched jaw, scrunched eyebrows, wrinkled nose, or tearful eyes. Student 3 was evaluated for Crying, which was defined as expression of distress through visible tears. Examples included tears after corrective feedback, or during a loud tantrum or audible yelling.

Prior to using DBR, teachers identified the activities within which each student's problem behavior was most likely (e.g., reading instruction). The teacher then observed the student's behavior during this activity on a daily basis. Following each observation, the teacher used the DBR graphic rating scale to indicate the percentage of time the student was observed displaying the target behavior. The line is divided into ten segments, which are numbered 0-10 and anchored with three sets of qualitative and quantitative anchors (i.e., 0% Never; 50% Sometimes; 100% Always). All ratings were completed using the Qualtrics online survey system and teachers received a daily email prompt reminding them to complete ratings of student behaviors.

The Usage Rating Profile-Intervention, Revised (URP-IR) was administered to teachers and educators responsible for implementing REP components, in order to assess their perceptions regarding the acceptability and feasibility of REP at the conclusion of the intervention. The URP-IR is a 29-item rating scale designed to evaluate multiple factors that influence whether or not an intervention is adopted (Briesch et al., 2013). To complete the URP-IR, participants rate the degree to which they agree with each item using a 6-point Likert scale (1 = Strongly Disagree and 6 = Strongly Agree). Scores are then summed within each subscale, with higher scores indicating greater intervention usability and likelihood of implementation. Extant research has supported the reliability and validity of URP-IR scores (Briesch et al., 2013), demonstrating acceptable internal consistency for 5 of the 6 subscales (α > .70). In order to best assess the current intervention, only items from the acceptability, understanding, and feasibility subscales were administered.

Intervention Overview

As noted above, REP represents an integrated intervention strategy comprised of two primary components. CBI is delivered in a small group setting and is founded upon direct instruction methodology, involving the verbal teaching of skills, explicit modeling of skills, including both guided and independent practice. A scripted intervention is provided to ensure fidelity of implementation across interventionists. Instruction is designed to (a) help students identify their own thoughts and feelings that might be eliciting internalizing behaviors, (b) understand the triggers and maintaining consequences of these thoughts and feelings, and (c) acquire coping and problem-solving skills that replace internalizing behaviors. Students participate in one 45-50 minute session each week for five weeks. Lesson 1 orients students to the REP intervention and establishes group expectations. Lesson 2 targets each student's ability to identify and name strong feelings, describe triggers for their own emotions, and to explain what happens to their thoughts and behavior when they experience these emotions. Lesson 3 provides instruction on coping skills that can help students calm down in order to stop escalating emotions. Specifically, students are taught STU skills (See the triggers, Take deep breaths, and Use your imagination), which involve deep breathing and positive imagery. Lessons 4 pertains to cognitive restructuring. Students are instructed how to identify the automatic thoughts that precede their negative emotions, while also working to replace these thoughts with more positive alternatives. Lesson 5 pertains to a problem-solving strategy that students can use to identify appropriate solutions to social or academic challenges related to their particular triggers. Lessons are cumulative in that each lesson builds upon those that came before it and describes how instructed skills can be used in a coordinated manner.

The CICO component of REP is designed to complement CBI by providing adult feedback and reinforcement when students demonstrate use of the instructed skills. CICO consists of a daily check-in with an adult mentor in the morning before school begins. The mentor prompts each student to use the CBI skills, provides the student with a daily progress report, and informs the student of the goal for the day. At five different points throughout the school day, the student's teacher provides the student behavioral performance feedback using the daily progress report. Such feedback includes teacher ratings about the extent to which the student "controlled emotions" (a potential outcome of coping skill use) and made good choices (a potential outcome of problem-solving strategy use), as well as the student's use of a specified replacement behaviors that are incompatible with their identified problem behaviors (e.g., if *problem* = withdrawal, then *replacement* = participated in activities). Via the daily progress report, students also provide their own ratings to indicate their current mood using a 7-point scale. Adult and student ratings are recorded throughout the day after five multiple pre-specified activities (e.g., math, reading). At the end of the school day, the student briefly meets with the mentor again. During check-out, the mentor provides the student feedback on his or her behavior that day, totals the points the student has earned, and provides rewards (e.g., computer time, extra recess) if the student met his or her goal for points obtained.

Procedures

Following consent procedures, classroom teachers and educators who served as CICO mentors (i.e., elective teachers) received systematic training regarding REP procedures. Classroom teachers were trained to implement REP-CICO procedures, including how to provide performance feedback at five different points throughout the school day using the daily progress report., reinforcement of appropriate behavior throughout the school day, and check-in/out procedures. Each student was also assigned a mentor who was an elective teacher within the school who knew the student (e.g., music, physical education, art teacher) that was identified as being someone who had a positive relationship with each participating student. This individual facilitated the student check-in at the beginning of each school day and check-out at the end of each school day. Each mentor completed a CICO self-report adherence form each time that they met with a student. Forms were reviewed and discussed each week by the lead principal investigator on the project. CICO was found to be delivered with 96% adherence across all CICO sessions by mentors.

Two graduate research assistants were trained to facilitate each REP-CBI group session. Initial training and ongoing consultation were conducted by a school psychology faculty member and an advanced school psychology graduate student with expertise in behavioral intervention and who had supported REP development. Graduate assistants were provided with the REP curriculum manual and training was conducted in a single two-hour session in which REP intervention materials were reviewed, implementation of lessons was modeled, and practice with feedback was provided. The training manual was used within each CBI session to support instruction and adherence to the standard REP protocol, including standardized lessons and scripted protocols. Facilitators were also trained to use a self-report adherence form (i.e., permanent product) that outlined the steps for administering each lesson. Throughout implementation, each CBI session was led by the two graduate assistants, with one assistant serving as the primary instructor and the second serving in a support role (e.g., participating in modeled instruction, supporting behavior management during verbal instruction). Treatment integrity was assessed via the self-report adherence form. This form was independently completed by each interventionist at the end of each of the five group CBI sessions. Forms were reviewed and discussed each week by the lead principal investigator on the project. Instruction was found to be delivered with 100% adherence across all CBI sessions by all group facilitators.

Research Design

The current SCD followed a concurrent multiple baseline across participants design, wherein each design leg corresponded to a different student. Students were randomized to baseline order. Each student proceeded through three phases: Baseline (A), wherein students were exposed to typical school-wide and classroom-level supports; Intervention (B), during which students received the REP intervention; and Maintenance (C), wherein students returned to baseline conditions following REP implementation. When considered relative to the What Works Clearinghouse (2010) design standards, the design elements of this SCD met standards without reservations, as the design permitted three demonstrations of the experimental effect and at least five data points were collected within each phase.¹

Data Analysis Plan

Each student's formatively-collected DBR data were evaluated through two methods. First, data were examined through visual analysis in accordance with recommendations from

¹ To note, the lack of inter-rater agreement data ultimately precludes this study from meeting WWC standards with or without reservations. Regardless, experimental design elements pertaining to number of phases and data points was intended to meet applicable standards without reservations.

Horner and colleagues (2005). Of particular interest was the degree of change in the level, trend, and variability of data across baseline and intervention phases. Of additional interest was the immediacy of such changes and the degree of data overlap across phases. Vertical analyses were also conducted to examine whether patterns of baseline responding were maintained for other students when a student transitioned to the intervention phase. Second, the Tau-U effect size statistics were calculated in evaluating the degree of change in student internalizing problem behavior from baseline to intervention. Tau-U considers nonoverlap across phases while adjusting for trend in data, resulting in more conservative effect size estimates than other nonoverlap statistics (Parker et al., 2011). In comparison to alternative to more traditional nonoverlap statistics (e.g., percentage of nonoverlapping data [PND]), Tau-U is less sensitive to floor and ceiling effects in data (Parker et al., 2011). Given Tau-U follows an "S" distribution (in a manner consistent with Mann-Whitney U), associated p values can be derived. For the purposes of this investigation, p values were evaluated relative to a critical p value of .05. Consistent with prior research (Vannest & Ninci, 2005), Tau-U values were interpreted relative to the following guidelines: 0.00-0.20 = small, 0.20-0.60 = moderate, 0.60-0.80 = large, and >0.80 = very large. All Tau-U values were computed using a web-based calculator (Vannest et al., 2011).

In addition, URP-IR data were evaluated via a series of descriptive statistics. The mean and standard deviation of item scores within each subscale was calculated. Resulting statistics were then compared back to the original Likert scale in evaluating the extent to which participants agreed that REP was acceptable, feasible, and understandable.

Results

Student 1

Figure 1 provides a graph depicting single case data for all three participating students. A visual analysis of Student 1 data revealed a reduction in the level of withdrawal behavior, with the mean rating decreasing from 1.60 during baseline to 0.55 during intervention. This level change was immediate, though brief increases in problem behavior were noted following the first three days of withdrawal ratings equal to 0. Variability in ratings enhanced slightly from baseline to intervention, with the SD increasing from 0.89 to 1.22. No discernible changes in trend were noted, with data evidencing minimal trend within both baseline and intervention phases. A degree of data overlap was noted across phases, with six intervention data points exceeding 0%. Despite this small degree of overlap, Tau-U fell in the large range (0.72) and was statistically significant (p = .016), suggesting the majority of data were non-overlapping. To note, all of Student 1's five maintenance points were equal to 0, suggesting the absence of withdrawal behavior following intervention implementation.

Student 2

Visual analysis of Student 2 data also revealed an immediate reduction in level of negative affect, with the mean rating decreasing from 3.88 during baseline to 0.70 during intervention. The degree of variability was also found to decrease, with the SD moving from 3.54 during baseline to 1.89 during intervention. A change in trend was also noted. More specifically, whereas the final four baseline data points demonstrated a rapid increase in negative affect, intervention data points demonstrated a sustained decreasing trend. Student 2's data evidenced a large degree of overlap across phases given the high variability in data during baseline. Regardless, the resulting Tau-*U* statistic fell in the large range (0.68) and was statistically significant (p = .002). As with Student 1, all five of Student 2's maintenance data points were equal to 0. To note, a vertical analysis of Student 2 data indicated the student's behavior

improved when Student 1 transitioned from baseline to intervention. With that said, baseline responding returned to original levels prior to the phase change, thus tempering any internal validity concerns.

Student 3

Visual analysis of Student 3 data revealed no notable change in level, with the mean rating moving from 0.56 during baseline to 0.31 during intervention. Similarly, no change in trend was noted, with both phases evidencing a stable low level of responding. The degree of variability was relatively similar, with SD equal to 1.09 during baseline and 0.70 during intervention. Overall, data were highly overlapping across phases, as evidenced by the Tau-U estimate (0.12), which fell in the small range and was non-statistically significant (p = .692). Finally, in a manner consistent with Students 1 and 2, all five of Student 3's maintenance data points were equal to 0.

Social Validity of REP

The URP-IR was used to evaluate teacher perceptions of the REP intervention. Findings from the URP-IR indicated that teachers average scores fell between agree and strongly agree (Likert scale scores of 5 and 6, respectively), suggesting teachers found REP to be acceptable, understandable, and feasible: *Acceptability* (M = 5.33, SD = .47), *Understanding* (M = 5.33, SD = .47), and *Feasibility* (M = 5.66, SD = .47). Educators' ratings indicated that they strongly agreed with statements such as "I understand how to use this intervention" and "The intervention is an effective choice for addressing a wide variety of problems."

Discussion

The purpose of this study was to continue the line of pilot research examining the efficacy of REP, a novel Tier 2 intervention for students exhibiting internalizing concerns.

Results of visual and statistical analyses collectively suggested REP was associated with a reduction in internalizing behaviors for two of three participants. These reductions were also maintained at follow-up following intervention termination. The remaining participant demonstrated non-significant changes in behavior. The findings from this study are aligned with the initial REP pilot study (Allen et al., 2018), which also documented positive effects across two of three participants. The current results also concur with recent research regarding alternative Tier 2 internalizing interventions, with effect size estimates proving similar in terms of magnitude, suggesting the similarity of interventions in terms of effectiveness (Cook et al., 2015; Fiat et al., 2017; Hunter et al., 2014). Below we provide further consideration of findings across each specific student participant.

Student 1 demonstrated a statistically significant decrease in withdrawal, with effects falling in the moderate range. These effects were maintained at follow-up, where no withdrawal behaviors were observed. Visual analysis shows that the student immediately responded to intervention, with the first three intervention data points being equal to zero. However, higher levels of withdrawal were noted on the fourth and eighth days of intervention, with these data points being above baseline levels. Because REP is initially focused on students identifying their negative emotions and associated triggers, it is possible that iatrogenic effects might be observed for some students in the initial stages of intervention. However, such effects would be expected to dissipate over time as students learn and apply the instructed skills. Such a pattern was observed for Student 1, as well as two students in the prior REP investigation (Allen et al., 2018).

Student 2 also demonstrated a statistically significant decrease in negative affect, with effects falling in the moderate range. Visual analysis showed that Student 2 displayed high levels

of negative affect during baseline. Interestingly, like Student 1, Student 2 demonstrated occasionally higher levels of negative affect during the early phases of intervention, potentially reflecting a similar adverse response to initial REP lessons. However, negative affect subsequently decreased and trended toward elimination of the behavior. This elimination was then maintained through the follow-up maintenance phase.

While Student 3 showed a slight level reduction in crying behavior, it was neither notable or statistically significant. With that said, this conclusion was likely influenced by the presence of floor effects, as the student exhibited relatively low levels of crying during baseline, suggesting there was little room for improvement. Given the baseline levels of crying, the behavior would have needed to be all but eliminated during intervention for effects to be apparent and notable. Unfortunately, this would likely be challenging for a Tier 2 intervention given its moderate intensity.

Finally, ratings on the URP-IR indicate educators found REP to be highly acceptable, understandable, and feasible. These findings suggest teachers perceived REP to be a socially valid school-based intervention. Future research is needed to better understand these ratings may change when school-based interventionists (e.g., school psychologists, social workers) or other educators lead the small group CBI sessions.

Overall, results reflect continued preliminary support for REP in improving the behavior of students exhibiting risk for internalizing concerns. The importance of schools having access to early interventions like REP should not be understated. Internalizing disorders are among the most common youth mental health problems (Merikangas et al., 2010). These mental health concerns may influence the way students navigate academic challenges, ability to persist through a task, and subsequent academic performance and school adjustment (Flook et al.2005; NolenHoeksema et al., 1992). Transitions into middle or high school may further heighten stressors that youth with internalizing concerns experience as they navigate new social situations and hierarchies among peers and teachers (Cicchetti & Toth, 1998). Addressing and treating internalizing behavior concerns in school is important for students' academic and socialemotional wellbeing. If students are not responding to Tier 1 intervention efforts such as positive behavior intervention supports (PBIS), then targeted supports are often necessary. Cognitive behavioral therapy has been shown to effectively treat a wide range of disorders including posttraumatic stress disorder and childhood depressive and anxiety disorders (Butler et al., 2006) and may be an appropriate option as a Tier 2 intervention in schools. As such, interventions such as the REP may provide necessary supports for children demonstrating early indicators of internalizing concerns. By providing students multiple strategies within an abbreviated format, REP represents a unique and feasible approach to supporting students with internalizing concerns in the school setting.

Limitations and Future Directions

The current investigation possessed a few limitations. First, teachers completing DBR ratings on all students were aware that students were receiving intervention. As such, there is a potential for a positive bias in ratings. It should be noted, however, that teachers were not aware of the specific hypotheses of the current study. Second, given that the only outcome data were teacher ratings, study findings are subject to mono-method and mono-informant biases. To note, the use of teacher-rated DBRs as a sole outcome is common within the single-case design internalizing intervention literature, with this approach having been used across multiple studies (e.g., Dart et al., 2015; Fiat et al., 2017). Yet, regardless of the commonality of this approach, it is recommended that future investigations employ more rigorous measurement procedures like

that in the previous REP investigation (Allen et al., 2018), which included multiple data collection methods and informants. Future studies are also planned that will include additional outcome measures, including student data. Third, due to the reliance upon teacher raters typically present within the instructional setting, we were unable to evaluate inter-rater agreement. Future studies might then examine classrooms with multiple educators (e.g., two teachers or a teacher and paraprofessional) to address this issue. Fourth, the dependent variables in this investigation represented hypothesized distal outcomes of REP implementation (i.e., internalizing problem behaviors). More proximal outcomes, including coping and problem-solving skills, were not evaluated. Future studies should employ a broader measurement approach, inclusive of both proximal and distal outcomes, to also evaluate REP's impact on increasing student coping and problem-solving skills.

Fifth, REP was an integrated intervention founded upon multiple components (i.e., CBI and CICO). As such, it was impossible using the current experimental design to isolate the unique effects of each component. It could have been that the CBI procedures were sufficient to promote improvements in student behaviors. Future research should contrast a CBI-only intervention with a CICO-based intervention to determine their effects on student's internalizing behaviors. Sixth, this SCD only targeted three students. Thus, the external validity of the current causal inferences is inherently restricted. Future investigations should be conducted with a larger, more diverse sample of participants.

Despite the aforementioned limitations, the current study demonstrated that an abbreviated Tier 2 intervention designed to address students internalizing concerns implemented with fidelity yielded desired effects on student behavior, as reported by teachers. Future research now remains necessary to understand the mechanisms by which and under what conditions REP yields outcomes for students. This, along with research examining larger and more diverse samples, will help to establish REP as an evidence-based intervention and supports its application in schools.

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Figure 1



Resilience Education Program Multiple Baseline Design Across Student Participants