

EVALUATION OF A TIER 2 INTERNALIZING INTERVENTION:
THE RESILIENCE EDUCATION PROGRAM

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by

KAYLA D. KILPATRICK

Drs. Stephen Kilgus and Keith Herman, Dissertation Supervisors

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The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

EVALUATION OF A TIER TWO INTERNALIZING INTERVENTION:
THE RESILIENCE EDUCATION PROGRAM

presented by Kayla D. Kilpatrick

a candidate for the degree of doctor of philosophy of school psychology

and hereby certify that, in their opinion, it is worthy of acceptance.

Professor Stephen Kilgus

Professor Keith Herman

Professor Katie Eklund

Professor Chad Rose

DEDICATION

I would like to dedicate this work to my parents, Kevin and Tina Kilpatrick. From a young age, my parents instilled in me a sense of curiosity. My parents have worked tirelessly to support my education throughout the years and have never wavered in their love and encouragement to pursue my goals. As I begin my professional career, I strive to embrace my parents' strong work ethic and love for life.

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ABSTRACT

The current study intended to evaluate a tier 2 internalizing intervention that was developed for the school setting. The Resilience Education Program (REP) includes five cognitive-behavioral instruction lessons for use in a small group setting to address internalizing concerns such as depressed mood and anxiety. Additionally, REP uses a Check-In/Check-Out reinforcement-based mentorship program for students, in order to address performance and skill deficits in internalizing behavior.

An underpowered waitlist randomized controlled trial research design was conducted in which students in grades 4-7 were randomly assigned to treatment or waitlist control groups. Participants' internalizing behavior and proximal outcomes as reported by teacher and self-report measures in the treatment group (N = 21) were compared to participants' outcomes in the waitlist control group (N = 17) while controlling for pre-test measures and demographic variables.

Primary findings from MANCOVA analyses indicated that there were not statistically significant differences in youth self-reported or teacher-reported internalizing concerns between the intervention and waitlist group. Despite the lack of statistical significance, main effects were associated with large effect sizes, reflecting the pre-post differences in subscale scores. A large effect size was also found for the proximal intervention outcomes including coping skills, perceived control of one's internal states, and social support, according to intervention status. There were positive findings regarding the acceptability of the REP intervention as a tier 2 intervention to address internalizing risk in the school setting. Limitations and future directions for this area of research are discussed.

CHAPTER I: INTRODUCTION

Background

An estimated 10 to 20% of children and adolescents worldwide experience a mental health disorder, according to the World Health Organization (WHO, 2017). Approximately half of those individuals in the United States meet criteria for an internalizing disorder, such as anxiety or depression (Merikangas et al., 2010). Given the prevalence of these conditions, there is clear need for intervention to address current challenges and prevent future mental health problems in students with internalizing concerns (Levitt & Merrell, 2009).

Past research has established the evidence base for treating internalizing disorders, with cognitive behavioral therapy being recognized as one of the leading evidence-based treatments for youth ages 8 and up (Weisz, 2015). Furthermore, research indicates modular cognitive-behavioral therapy, in which individuals are taught skills that address a wide range of concerns, has demonstrated clinically significant reductions in internalizing concerns (Chorpita, Taylor, Francis, Moffitt, & Austin, 2004). However, much of the research on existing treatments for internalizing concerns has taken place in outpatient clinical mental health settings with youth who have already been diagnosed with mental disorders. Comparatively less work has been conducted in the school setting with students who are at risk for such concerns; this is despite increasing interest in schools participating in mental health service delivery (Kilgus, Reinke, & Jimerson, 2015; McIntosh, Ty, & Miller, 2014).

Within schools, mental health concerns are increasingly being addressed via public health-oriented models of prevention. Through these models, schools apply a

three-tiered framework for responding to students' increasingly intensive and individualized needs. Multi-tiered research has predominantly focused on addressing externalizing concerns, such as behavioral difficulties in the classroom in the form of disruptive or aggressive behavior (Mitchell, Stormont, & Gage, 2011). For instance, previous research has produced a range of targeted tier 2 interventions for students who are at-risk for externalizing behaviors, such as Check In/Check Out (CICO), a mentorship program in which students have behavioral goals and receive positive reinforcement through adult attention on a daily basis (Todd, Campbell, Meyer, & Horner, 2008). Comparatively less tier 2 research has been conducted in the area of interventions for internalizing concerns.

Statement of the Problem

Based on the prevalence of internalizing disorders in youth, there is a need to lessen the negative impact of internalizing disorders in children and adolescents. Schools are a natural setting for mental health intervention to take place, as students spend the majority of their time there and may receive greater access to supports (Paternite, 2005; Weist & Murray, 2008). Unfortunately, there is a lack of evidence-based interventions in the school setting that address internalizing concerns (Cook, Volpe, & Livanis, 2010). Additionally, one could argue that existing interventions for internalizing concerns do not fully address the scope of the problem (Herman, Reinke, Parkin, Traylor, & Agarwal, 2009). For example, skill-based cognitive-behavioral interventions for internalizing disorders that were developed for use in a clinical setting commonly do not promote the generalization of skills to the school setting and do not consider the child's social-ecological framework of interactions with family members, school staff, and peers

(Herman et al., 2009). Additionally, many existing cognitive-behavioral interventions are often not feasible to implement in schools, due to limited school personnel with proper therapeutic training and the lack of time for lengthy interventions during the school day.

Recent research has begun to address this empirical gap by considering the effects of social-ecological interventions on internalizing concerns. Based on previous research, it is assumed that school-based internalizing interventions should include cognitive-behavioral instruction to youth and adolescents, as well as a mentorship component that reinforces youths' practicing of skills and positive behaviors in order to generalize behavior into the classroom and home settings. Several researchers have examined the effectiveness of reinforcement-based mentorship interventions, including modified CICO programs (Cook et al., 2015; Hunter, Chenier, & Gresham, 2014). Multiple programs have been considered, including those intended to address (a) performance deficits (skills a student has learned but does not display with sufficient frequency; Gresham, Elliott, & Kettler, 2010) via reinforcement of key cognitive-behavioral skills (Dart et al., 2015; Hunter et al., 2014) and (b) acquisition deficits (lack of knowledge regarding how to perform the skill; Gresham et al., 2010) via the teaching of said skills (Allen, Kilgus, & Eklund, in press; Cook et al., 2015). One such program that addresses both acquisition of skills and performance deficits is found in the Resilience Education Program (REP) tier 2 internalizing intervention (Allen et al., in press). Though promising, this initial research remains limited and preliminary. There is a need for additional research to establish a more convincing evidence base for these interventions.

Purpose of the Current Study

The current study will evaluate a tier 2 internalizing intervention that has been developed for the school setting, which uses targeted skill-based cognitive-behavioral instruction (CBI) and reinforcement of the skill-based approach through the use of a modified Check-in/Check-Out (CICO) mentorship program. The REP intervention includes five foundational and general CBI lessons, which are intended to be appropriate for a wide range of students and internalizing concerns (e.g., depression, anxiety). Additionally, REP uses a modified CICO program through which students receive feedback and reinforcement regarding their display of both learned cognitive-behavioral skills and positive replacement behavior (e.g., speaking in class). Preliminary single-case design research has demonstrated initial support for REP in improving students' internalizing concerns and social engagement (Allen et al., in press). Moving forward, there is a need to evaluate the efficacy of REP on a larger scale in order to determine the effectiveness of the intervention. Additionally, there is a need to derive initial evidence of potential causal mechanisms through which REP affects internalizing problems, including teacher-student relationship, student self-esteem, student coping skills, and student problem-solving skills. The research questions for the current study are as follows:

Research Questions

1. What is the effect of the REP intervention on students' internalizing concerns as reported by student self-report, parent report, and teacher report, compared to a waitlist control group?

Based on the prior single-case design preliminary findings for REP, it was hypothesized that the REP intervention would decrease internalizing concerns, as reported by youth, parents, and classroom teachers.

2. What is the effect of the REP intervention on students' self-reported coping skills, sense of perceived control, and social support?

CHAPTER II: LITERATURE REVIEW

Internalizing Problems

Definition of Internalizing Problems

Internalizing problems can be defined as a disturbance in one's internal states such as emotional or mood problems that causes distress to the individual (Kovacs & Devlin, 1998; Zahn-Waxler Klimes-Dougan, & Slattery, 2000). Examples of internalizing symptoms may include social withdrawal, somatic and physical problems, rumination, difficulties regulating emotions, and avoidance of specific situations or stimuli (Levitt & Merrell, 2009). Internalizing problems include anxiety and depression; a key factor of anxiety includes attention to threat-relevant stimuli, whereas a key factor of depression is negative affect (McIntosh et al., 2014). As compared to externalizing problems, which are considered under-controlled behaviors, internalizing problems are viewed as over-controlled behaviors (Levitt & Merrell, 2009). Levitt and Merrell (2009) stated that while over-controlled behaviors cause distress to oneself internally, externalizing problems also cause distress to others and are observable by others. An additional difference between internalizing and externalizing behaviors is that the latter go undetected more often, as internalizing behaviors are much more difficult to observe and are largely perceived as internal processes (Gresham & Kern, 2004).

Etiology of Internalizing Problems

There are several existing models that posit which factors contribute to the development of internalizing disorders (Hammen, Rudolph, & Abaied, 2014; Higa-McMillan, Francis, & Chorpita, 2014). In each of these models, the onset of internalizing problems has many possible interacting genetic and environmental factors, including the

child's temperamental disposition, cognitive styles, interactions with parents, socialization experiences, interpersonal stressors, and early adverse experiences (Hammen et al., 2014; Rubin & Mills, 1991; Higa-McMillan, Francis, Rith-Najarian, & Chorpita, 2016). Zahn-Waxler et al. (2000) also stated that developmental processes play a role in the onset of internalizing problems, as children and adolescents learn to handle their thoughts and feelings; emotion regulation, learned helplessness, rumination, and attentional biases, such as interpreting non-threatening cues as dangerous (anxiety) or negative (depression), are all examples of such processes.

Internalizing Problems on a Continuum

Mental health concerns, including internalizing problems, fall along a continuum from mental health to mental illness. Mental health as defined by the World Health Organization (2017) is “a state of well-being in which every individual reaches his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.” Dealing with emotions like feeling anxious or sad in response to stressful situations are normal parts of the emotional experience and development in childhood and adolescence (Compas, 1987). For example, specific fears such as being afraid of the dark are common in early childhood, whereas children in elementary school may experience worry about their performance in school or the safety of their loved ones (Muris, Merckelbach, & Collaris, 1997). Adolescents may worry more about social situations or may feel sad or depressed following social conflict with peers (La Greca & Lopez, 1998). However, it is important to distinguish between the adaptive and maladaptive experience of emotions; when experience of anxiety or depressed mood causes distress and impairment to an individual,

such feelings are no longer considered adaptive and an individual may be at-risk for an internalizing disorder (Higa-McMillan et al., 2014; Zahn-Waxler et al., 2000).

In comparison to adequate mental health, where children and adolescents experience a range of emotions and are able to successfully cope with their emotions, mental illness or mental disorder involves significant impairment on behavior, thinking, or emotions, which then negatively impacts one's ability to successfully cope (Substance Abuse and Mental Health Service Administration, 2016). Experience of an internalizing disorder is defined by clinically significant levels of distress by the individual and impairment in major life activities, such as schoolwork, home life, or interactions with peers in addition to a cluster of symptoms as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5; American Psychiatric Association (APA), 2013; Higa-McMillan et al., 2014; Zahn-Waxler et al., 2000). Examples of diagnosable anxiety disorders include generalized anxiety, phobias such as agoraphobia, social anxiety, panic disorder, and selective mutism. Examples of mood or depressive disorders include major depressive disorder, dysthymic disorder, disruptive mood dysregulation disorder, and bipolar disorder (APA, 2013).

Prevalence of Internalizing Disorders

Research on the prevalence of mental disorders states that one in every four to five children or adolescents has a mental disorder and 1 in every 10 children or adolescents has serious impairment caused by a mental disorder (Levitt & Merrell, 2009; Merikangas et al., 2010). Lifetime prevalence rates of internalizing disorders were determined by Merikangas et al. (2010) in a face to face survey of a nationally representative sample of 10,123 adolescents ages 13 to 18 years in the United States.

Anxiety disorders were reported to have a prevalence of 31.9%, which has been reported to be the most common type of disorder in childhood and adolescence (Higa-McMillan et al., 2016). Additionally, prevalence rates for mood disorders between the ages of thirteen and eighteen were reported as 14.3%. Regarding the impact of an internalizing disorder, Merikangas and colleagues found that 22.2% of youth who met criteria for a mental disorder experienced severe impairment and distress, of which 11.2% had mood disorders and 8.3% had anxiety disorders. The median age of onset as reported by Merikangas et al. (2010) is age 6 for anxiety disorders and age 13 for mood disorders. Youth who experience internalizing disorders are also more likely to experience externalizing problems; the more co-morbid diagnoses an individual has, the greater impairment experienced by the individual (Mychailyszyn, Méndez, & Kendall, 2010).

Impact of Internalizing Problems

Both sub-clinical and clinically-significant symptoms have negative impacts on youth functioning. Masten and colleagues (2005) reported that the negative impact of symptoms is primarily on adaptive functioning, which may occur across multiple settings. Researchers have documented the impact of anxiety on functioning within the school setting, with anxiety being associated with impairment related to school stressors, such as homework and interactions with peers and teachers (Mychailyszyn et al., 2010). Additionally, youth with anxiety disorders experience greater impairment in academic performance than youth without anxiety disorders (Mychailyszyn et al., 2010). In a study conducted by Ialongo, Edelsohn, Werthamer-Larson, and Kellam (1995), researchers followed 684 first-grade students in a longitudinal examination of a prevention program. Results indicated that anxiety symptoms in first grade predicted academic achievement

scores in 5th grade. Possible explanations for the relationship between anxiety and academic performance include anxious symptoms and behaviors that interfere with one's ability to concentrate on academics, or that the child may have a fear of failure and have difficulty putting forth full effort in academic tasks (Ialongo et al., 1995).

Additional impairment may be experienced in the youth's home life, such as in interactions with family members or peers, or limited experience of activities due to anxiety or depressed mood. Youth who experience internalizing disorders are also the most at-risk for impairment in later life functioning; risk for an internalizing disorder in adulthood is strong based on one's experience of an anxiety or depressive disorder in adolescence (Pine, Cohen, Gurley, Brook, & Ma, 1998). Stress caused by symptoms of anxiety or depression may cause emotional distress, as well as physical distress, with individuals experiencing higher levels of physiological arousal (Mychailyszyn et al., 2010).

Risk for Internalizing Problems

Risk for internalizing problems can be defined as subsyndromal or subthreshold symptoms of an internalizing disorder which fall below disorder criteria but may still cause impairment and distress in an individual (Levitt & Merrell, 2009). If internalizing problems are not treated in youth, negative outcomes include increased risk for suicide, poor academic performance, difficulty with social relationships, increased substance use, and increased risk for a mental disorder (Levitt & Merrell, 2009). By targeting individuals who have subclinical symptoms, the risk for future disorders may be lowered along with decreasing impairment and distress (Levitt & Merrell, 2009).

Research has previously highlighted the importance of addressing subclinical symptoms given their potential for contributing to negative outcomes. For instance, Suldo and Shaffer (2008) conducted a study in which student participants were grouped based on a dual-factor model, which measured participants' subjective well-being and level of psychopathology. Subjective well-being was considered a positive indicator of mental health, whereas level of psychopathology was considered a traditional negative indicator of mental health. The following groups emerged in the dual-factor model: (a) complete mental health, in which participants had high subjective well-being and low levels of psychopathology, (57% of participants), (b) vulnerable, in which participants had low subjective well-being and low levels of psychopathology (13%), (c) symptomatic but content, in which participants had high subjective well-being despite high levels of psychopathology (13%), and (d) troubled, in which participants had low subjective well-being and high levels of psychopathology (17%). In addition, Suldo and Shaffer collected measures of academic functioning, social adjustment, and physical health. Compared to those who were vulnerable for mental disorders, students with complete mental health were found to have superior academic performance, social adjustment, attendance, perceived social support, and physical health. Those who were symptomatic, but content still had worse grades, lower achievement scores, motivation, self-regulation of emotions, and greater social difficulties and health problems relative to students with complete mental health (Suldo & Shaffer, 2008). The significance of Suldo and Shaffer's (2008) study is that there is a need to focus on more methods of early intervention and prevention, for example identifying and targeting students who were classified as vulnerable or symptomatic but content, rather than solely focusing on individuals who

meet criteria for a disorder. In other word, there is a need to provide intervention for individuals who do not meet criteria for an internalizing disorder but may have subclinical symptoms or lower well-being.

Evidence-Based Internalizing Interventions

Most research on internalizing interventions has taken place in clinical settings, where numerous evidence-based treatments for internalizing disorders in youth have been established. This section will review such evidence-based treatments, the theoretical orientation behind these treatments, as well as the limitations of addressing internalizing problems in the clinical setting.

Cognitive Behavior Therapy

Cognitive behavior therapy (CBT) is a type of talk psychotherapy that was developed by Aaron Beck and colleagues (Beck, Rush, Shaw, & Emery, 1979) that focuses on the connection of thoughts, feelings, and behaviors in addressing dysfunctional thinking patterns and behaviors. The theoretical basis of change in CBT is founded in Clark and Beck's (1999) cognitive theory, which posits that one's thoughts about a situation also influences their emotions. For example, attributions that one makes about a situation or experience may lead an individual to feel hopeful, whereas another individual may make negative attributions that result in negative feelings that contribute to depression (Beck et al., 1979). CBT focuses on identifying and modifying those maladaptive thoughts, while also promoting changes in emotions and behaviors through a problem-solving approach (Reinecke, Ryan, & Dubois, 1998).

Another characteristic of CBT for disorders such as anxiety and depression is that therapy is limited in the number of sessions compared to other long-term methods of

psychotherapy. This is typically accomplished via the use of a manualized intervention protocol. In addition to the theoretical foundation of cognitive theory, manualized CBT treatments are tailored to the specific type of disorder and include a similar format of therapeutic components, such as psychoeducation, identification of cognitive distortions, cognitive restructuring, modeling, role-playing, discussion, problem-solving, self-monitoring, reinforcement, homework, and relapse prevention (Compton, Burns, Egger, & Robertson, 2002). Certain components of CBT are specific to certain disorders, such as behavioral activation for depression (Jacobson, Martell, & Dimidjian, 2001). Through behavioral activation, the individual learns to re-engage in activities that are positively reinforcing to the individual to help counter the lack of interest characterized by anhedonia in depressive disorders (Jacobson et al., 2001). Additionally, CBT for anxiety may also include a focus on somatic and physiological management, due to the hyperarousal of physiological symptoms often experienced by individuals with anxiety (Kendall, Furr, & Podell, 2010). Individuals with anxiety experience a feedback loop of hyperawareness of physiological states that links to thoughts, such as feeling one's heart beat racing and thinking "Something is wrong with me; I'm going to die," which in turn increases physiological arousal (Friman, Hayes, & Wilson, 1998). CBT for anxiety may be supplemented by exposure therapy, in which individuals are exposed to situations that increase arousal and avoidance to help them re-learn that these physiological symptoms are harmless (Kendall et al., 2010).

Evidence-Base for CBT

CBT treatments have been shown to be effective for both youths and adults with anxiety and depression (Reinecke et al., 1998). CBT is considered a well-established

evidence-based treatment by the American Psychological Association (APA) clinical division task force, which indicates that at least two large-scale randomized controlled trials have been conducted on the treatment (Chorpita, Daleiden, & Weisz, 2005). In a review of intervention studies for children and adolescents, David-Ferdon and Kaslow (2008) found that CBT is a well-established treatment for childhood and adolescent depression. Regarding treatment for anxiety, Higa-McMillan and colleagues (2016) reported that CBT plus exposure-based therapy is the most effective treatment approach for anxiety. Additionally, CBT effect sizes have been found to range from medium (0.53) to large (1.89) across several meta-analyses conducted for the treatment of anxiety and depression in youth (Compton et al., 2002; Lewinsohn & Clarke, 1999; Michael & Crowley, 2002). Weisz, McCarty, and Valeri (2006) reviewed the effect sizes across 35 studies using psychotherapy for children and adolescents, including mixed-age studies and non-peer reviewed studies, finding a small mean effect size of 0.34 for psychotherapy treatments. Significant treatment effects were found for cognitive-based interventions, including individual and group-based interventions (Weisz et al., 2006). Klein, Jacobs and Reinecke (2007) reviewed eleven randomized controlled trials in a meta-analysis of CBT for adolescents with depression, finding a medium mean effect size of 0.53.

Additionally, in a review of 111 treatment outcome studies published between 1967 and 2013, Higa-McMillan and colleagues (2016) found that CBT was supported as a treatment for individuals from a variety of racial and ethnic backgrounds. Specifically, CBT demonstrated significant effects for individuals of Aboriginal, American Indian, Alaskan Native, Asian, African-American, Caucasian, Dutch, Hindu, Hispanic,

Indonesian, and multi-ethnic backgrounds. Across 165 treatment conditions, the most common elements in CBT practice for anxiety were exposure, cognitive techniques, relaxation, psychoeducation, and modeling.

Modularized Treatment Approach

Across the history of CBT research, there was a notable shift to the common examination of flexible modularized CBT approaches. Via the modularized approach, researchers have integrated the CBT strategies that are most common across many manualized CBT programs, resulting in more efficient treatment packages (Chorpita et al., 2004). Although CBT is typically manualized and specific to certain disorders (e.g., major depressive disorder or generalized anxiety disorder), researchers have made a call for the use of modular manualized CBT treatments (Chorpita et al., 2004). In a modularized approach, a clinician uses efficacious CBT strategies that are aligned with a given individual's diagnoses and needs. Such CBT treatment strategies may include psychoeducation, exposure, cognitive restructuring, social skills training, rewards, differential reinforcement strategies, time-out, maintenance, and relapse prevention. Chorpita and colleagues (2004) have demonstrated use of such modules via an algorithm that supports tailoring of strategies to individual need. Manualized modular CBT treatment is more flexible and allows for multiple disorders to be treated at once, instead of using separate protocols to treat each disorder. Modularized CBT treatments have been found to be efficacious for treatment of childhood internalizing disorders while representing a more efficient approach to treatment (Chorpita et al., 2004).

Limitations of Community and Clinical Therapeutic Interventions

Research in the clinical setting has provided a strong foundation for evidence-based practices in addressing internalizing problems in youth, primarily through a CBT orientation. Although these treatments are beneficial to youth with internalizing disorders, there are barriers that prevent many youths in need of services from accessing the clinical setting and these evidence-based treatments. Of youth with mental health concerns, 75 to 80% do not receive treatment (Levitt & Merrell, 2009). One major barrier includes difficulty accessing the clinical setting in which evidence-based treatment is set to occur; families from low socio-economic status (SES) backgrounds may have more difficulty accessing intervention in a clinical setting due to time and resource constraints, such as adequate transportation or conflicting work schedules (Howell, 2004; Richardson, 2008; Weist & Murray, 2008). Youth in urban settings and rural backgrounds may have a shortage of adequate resources and trained professionals to implement evidence-based treatments (Yoshikawa, Aber, & Beardslee, 2012). The stigma of seeking treatment for mental health problems, coupled with living in a rural community where anonymity is difficult to maintain, also serves as a barrier to accessing treatment (Yoshikawa et al., 2012).

In order to address these barriers that limit access to evidence-based interventions, Higa-McMillan and colleagues (2016) discussed the need for further research on the effectiveness of interventions with real-world youth in real-world settings. The school setting could be one such setting. This need to examine research outside the traditional community-based clinical setting was also noted by Compton and colleagues (2002) in

which the authors discuss future implications to consider dissemination and implementation of efficacious treatments in real world settings with real world clinicians.

Herman and colleagues (2009) stated that there is a need to mitigate the negative impact of depression and internalizing disorders in childhood and adolescence in the school setting, such as by school psychologists. This sentiment has been echoed by many researchers, who have suggested schools could serve as a universal setting for mental health intervention (Weist & Murray, 2008). Paternite (2005) emphasized that schools provide greater access to youth in need than any other setting. As a result, researchers have called for interventions in the school setting, in which youth spend the majority of their time and could have increased accessibility to mental health supports.

Social-Ecological Theory of Internalizing Disorders

In regard to barriers that limit access to evidence-based interventions outside of the clinical setting, Herman, Merrell, Reinke, and Tucker (2004) stated that one of the difficulties faced by clinic-based therapies is the lack of methods by which to support the generalization of skills beyond the therapy setting. Herman and colleagues (2004) proposed a school-based, social-ecological approach to the prevention of depression, in which school support personnel manipulate psychosocial factors (e.g., interactions with family members, teachers, and peers) to influence internalizing behaviors. The authors suggested that while treatments like CBT emphasize the role the individual plays in maintaining his or her own problem, the role played by psychosocial and environmental factors is often overlooked (Herman et al., 2004; Kilgus, Reinke, & Jimerson, 2015). This is unfortunate, as it is possible that environmental factors could be manipulated in service of the treatment process, providing a means by which to influence student behavior and

improve individual functioning. Herman and colleagues' proposed social-ecological framework (Herman et al., 2004; Herman et al., 2009) serves as a model for addressing internalizing concerns within schools, showcasing how the unique aspects of the school setting can be used to afford a broader approach (relative to the community-based clinic setting) to the treatment of internalizing concerns. The social-ecological approach builds upon the CBT approach, allowing for the environment to reinforce and promote both (a) skills taught via CBT and (b) adaptive behaviors that might otherwise replace maladaptive internalizing behaviors. The school setting affords the unique opportunity for the student to practice CBT skills in the student's natural environment that otherwise may not be reinforced in the traditional clinic setting. With the reinforcement of the student's newly learned CBT skills by adults in the school setting, students may have better success in replacing their maladaptive behaviors with adaptive behaviors to fully address internalizing concerns.

Treatment of At-Risk Youth

Another disadvantage of treatment of internalizing problems only in the clinical setting is that the clinical setting is traditionally meant for individuals who already meet criteria for a mental disorder. Evidence-based interventions such as CBT in the clinical setting are meant to respond to the highest intensity of need (Fazel, Hoagwood, Stephan, & Ford, 2014). Importantly, intervention in the clinical setting is not meant to prevent disorders but rather remediate and treat already existing disorders. Fazel and colleagues (2014) called for intervention researchers to consider the high prevalence of youth impacted by mental health difficulties, including those who do not yet meet criteria for disorders and are therefore less likely to be provided evidence-based intervention. As

previously mentioned, there is a need for interventions for mental health problems such as internalizing difficulties to take place in accessible settings, such as schools, in order to better prevent internalizing difficulties from developing into a disorder and to better facilitate access to intervention and overcoming the barriers of a clinical setting (Herman et al., 2004; Herman et al., 2009; Fazel et al., 2014). By targeting individuals who have subsyndromal or subthreshold symptoms of internalizing problems in the school setting, it might be possible to lower risk for future disorders along with decreasing impairment and distress for the individual.

Need for Intervention in the School Setting

Multi-Tiered Systems of Support

Increasingly, schools are choosing to address a wide range of student concerns through multi-tiered systems of support (MTSS). MTSS frameworks have been adapted from a public health model in which the focus is on prevention and early intervention for the majority of students, with the goal of preventing future problems from developing (McIntosh et al., 2014). Scholars have suggested that internalizing problems could be addressed through such multi-tiered systems, including the widely adopted School-Wide Positive Behavior Intervention Supports (PBIS) framework (McIntosh et al., 2014). Intervention for externalizing behavior problems have been more of a focus in the school setting in general, and specifically within PBIS. In contrast, less attention has been given to the prevention of internalizing problems (Herman et al., 2004).

Universal Intervention

The most common approach to MTSS is founded upon three tiers. Tier 1 corresponds to primary prevention, through which all students receive universal supports.

It is anticipated the majority of students will be responsive to such supports, thereby requiring no further assistance. Tier 2 corresponds to secondary prevention (also referred to as targeted intervention), which is provided to the small percentage of students who are not responsive to Tier 1 universal supports (e.g., estimated 15%; Walker et al., 1996). Tier 3 then represents tertiary prevention (also referred to as intensive and individualized intervention), which is provided to the smallest percentage of students whose needs are not met at either Tiers 1 or 2 (estimated 5%; Walker et al., 1996).

Examples of preventive tier 1 supports that may address internalizing problems include social-emotional learning (SEL) curricula that are taught school-wide, such as FRIENDS for Life (Barrett, Webster, & Turner, 2000), Second Step (Frey, Hirschstein, & Guzzo, 2000), and Promoting Alternative Thinking Strategies (PATHS; Kusché & Greenberg, 1994; McIntosh et al., 2014). Lock and Barrett (2003) examined the influence of the FRIENDS for Life curriculum on internalizing difficulties. Participants in the sixth grade showed a greater reduction in anxiety symptoms over time than participants in the ninth grade, which suggests that late childhood and early adolescence is the prime time for early intervention and prevention efforts (Lock & Barrett, 2003). Broader systematic reviews have supported the effectiveness of SEL strategies at tier 1, revealing small effects on student emotional distress (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011).

Targeted Intervention

At the tier 2 level, targeted interventions are provided to the small percentage of students who are unresponsive to tier 1 supports and therefore require additional instruction and supports (Pavri, 2010). Gladstone and Beardslee (2009) stated that

targeted preventive efforts for depression may prevent youth from developing depressive disorders, which is beneficial because it is more difficult and costlier to treat depression once the disorder has developed.

Several existing tier 2 interventions have demonstrated effectiveness relative to externalizing problems within an MTSS approach. Check-In/Check-Out (CICO), Check, Connect, and Expect (CCE), Check & Connect, and small-group social skills instruction are all examples of tier 2 interventions that have shown improvement in externalizing behavior problems (Gresham, Hunter, Corwin, & Fischer, 2013; Gresham, Van, & Cook, 2006).

Check-In/Check-Out. Components of CICO include frequent progress-monitoring and positive feedback to the student about his or her behavior, positive reinforcement of appropriate behavior in the form of positive teacher attention, parental attention, and possible small tangible rewards (Crone, Hawken, & Horner, 2010). On a daily basis, the CICO student checks in with the CICO coordinator at the start of the day to review his or her daily progress report and expectations for the day. The student then checks in with his or her teacher at the end of each designated period throughout the day (e.g., math, language arts) to receive feedback and ratings regarding his or her behavior during that period. For example, students may be rated by teachers on behavioral goals such as *safe*, *respectful*, and *responsible*. Next, the student checks out with the CICO coordinator at the end of the day. At this time, the coordinator totals the student's points to determine if the student met his or her goal. If the goal was met, the student receives praise and a tangible reward. If the student's goal has not been met, the student will be encouraged to try again tomorrow (Hawken, Bundock, Kladis, O'Keefe, & Barrett,

2014). Throughout the day, attention and feedback is minimized relative to inappropriate behavior.

There has been a great amount of support in the literature for CICO to effectively address externalizing problems at the tier 2 level, with evidence coming from both single-case design (SCD) and randomized controlled trial (RCT) studies. Findings from a multiple-baseline SCD study by Todd and colleagues (2008) indicated that CICO reduced problem behavior across a sample of four elementary-age boys. Similarly, other reversal SCD studies have indicated CICO is effective at both reducing externalizing behaviors (e.g., disruptive behavior) and increasing academic engagement (Campbell & Anderson, 2011; Miller, Dufrene, Sterling, Olmi, & Bachmeyer, 2015).

Hawken and colleagues (2014) conducted a systematic review of 28 CICO studies that used either SCD or RCT designs. Single-case design study findings were analyzed by calculating the percentage of non-overlapping data points (PND) between the number of points in the treatment phase and baseline phase (Hawken et al., 2014). Of the 39 SCD studies reviewed, 19 of 39 showed evidence of CICO effectiveness, as demonstrated by 70% or higher PND. The median PND across all SCD studies was 68%, which indicated that CICO demonstrated potential effectiveness and was approaching the effectiveness criteria of 70% or higher PND. Of the eight RCT studies that were examined, effect sizes that were reported using Cohen's d were small (median $d = 0.37$), and those studies that reported R^2 were large ($R^2 = 0.23$). Hawken and colleagues examined four dependent variables across the RCT studies, including office discipline referrals, academic engagement, problem behavior, and number of points earned in CICO. Results indicated found that CICO was effective in improving each of these variables, with effect sizes

ranging from questionably effective to very effective. Based on these results, CICO is considered an effective intervention for reducing externalizing problems at the tier 2.

Check & Connect. Check & Connect is another tier 2 intervention to address problem behavior in middle and high school students that includes a mentorship component to increase student engagement. An adult mentor completes daily check-ins with the target student and progress-monitors a variety of academic and behavioral outcomes, such as office discipline referrals, attendance, and grades (Evelo, Sinclair, Hurley, Christenson, & Thurlow, 1996). Additionally, the adult mentor focuses on building and sustaining a positive relationship with the student in an effort to foster increased school connectedness and provide the student with feedback regarding the at-risk outcomes that are being measured daily (Evelo et al., 1996). Research has demonstrated that Check & Connect increases school engagement and decreases both student problem behavior and drop-out rates across middle and high school participants (Sinclair, Christenson, Evelo, & Hurley, 1998; Sinclair, Christenson, & Thurlow, 2005).

Check, Connect, and Expect (CCE). An additional tier 2 intervention to address externalizing behavior problems is Check, Connect, and Expect (CCE; Cheney et al., 2009). CCE combines components from both CICO and Check & Connect. In CCE, students receive daily check-ins and check-outs with mentors, behavioral feedback and ratings from teachers throughout the day, and positive reinforcement for meeting goals. In addition, students participate in problem-solving with their mentor when daily goals are not met. If students do not respond to the basic CCE program at tier 2, students may move to tier 3 in CCE in order to receive more intensive, individualized supports. At the tier 3 level, students receive social skills instruction using the Stop and Think Social

Skills Program (Knoff, 2001). In a study reviewing the effectiveness of CCE, Cheney and colleagues (2009) found that problem behavior decreased over time for graduates of the CCE program, although academic and social skills measures did not change. In their review of studies that examined CICO and CCE, Bruhn, Lane, and Hirsch (2014) also found that students demonstrated favorable outcomes, including decreases in office discipline referrals (ODRs) and increases in academic engagement.

Social Skills Training (SST). Social skills training (SST), in which students receive small group social skills instruction, is another tier 2 intervention to address behavior problems. SST is appropriate for students who have acquisition skill deficits in social skills, defined as a lack of knowledge regarding how to appropriately engage in certain social interactions (Gresham et al., 2010). Examples of problem behavior that students may exhibit include difficulty in taking turns during interactions with peers and adults or not having the skills to appropriately request help when engaged in peer conflict.

An example of an SST curriculum is that of the Social Skills Intervention Guide (SSIG), in which students receive explicit instruction and skill-building in social skills during small group lessons (SSIG; Elliott & Gresham, 1991). Through the SSIG, students receive social skill instruction on topics such as how to initiate a conversation, take turns in a conversation, or cooperate with peers when working in groups. Students receive explicit instruction, including sequential steps for implementing social skills, opportunities for modeling, role-play, and homework to generalize the learned social skills to other social environments (Gresham & Elliott, 1993). Another example of an SST curriculum is the Stop & Think Social Skills Program, developed by Knoff (2001).

The Stop and Think Social Skills Program teaches students social skills across 10 lessons, including topics such as listening, following directions, how to ask for help, and how to deal with losing. The Stop and Think process is applied to each lesson in a systematic way, in which students practice using impulse control and emotional regulation to recognize which social skills are needed to solve a situation and to engage in positive behavior (Knoff, 2001). Research has demonstrated that SST is effective at increasing student social skills and decreasing problem behavior for students at-risk for emotional and behavior disorders (Gresham, Cook, Crews, & Kern, 2004; Gresham et al., 2006).

Shortage of feasible evidence-based Tier 2 internalizing interventions.

Mitchell et al. (2011) conducted a review of tier 2 interventions implemented within an MTSS framework; the majority of the studies included in their review used CICO, BEP, or Check & Connect. Only one study specifically addressed internalizing behavior problems, in which a student participated in a social skills group to address withdrawn behavior and to practice entering social situations. Findings from a systematic review conducted by Bruhn et al. (2014) demonstrated similar results, with the majority of reviewed studies focusing on externalizing or social outcomes. Results from both Mitchell et al. (2011) and Bruhn et al. (2014) are concerning, suggesting that not only are schools having a difficult time identifying students with internalizing concerns, but researchers are also not giving adequate attention to the development of internalizing interventions that could be used within school-based MTSS frameworks. This is despite research suggesting the potential harm of unaddressed internalizing concerns, as well as the potential promise for such concerns to be addressed at the tier 2 level. Findings from the aforementioned Suldo and Shaffer (2008) study support the need for strategies for

vulnerable youth to focus on improving well-being and for symptomatic youth to focus on both well-being and decreasing symptoms. Both of these suggestions for early intervention would take place at tier 2. Thus, moving forward, there is need for increased attention at the tier 2 level regarding interventions that address subsyndromal internalizing problems that are not yet to the level of a disorder, but nevertheless cause impairment and distress.

It is important to also acknowledge that there are existing internalizing programs from the research literature that could be considered selective and targeted intervention programs. One such example is the Penn Resiliency Program (PRP), which uses a CBT approach across 12 90-minute weekly group sessions (Gillham, Jaycox, Reivich, Seligman, & Silver, 1990). Past research on the PRP using an RCT design determined a large effect size for reduction of anxiety symptoms and a small to medium effect size for reduction of depressive symptoms (Gillham et al., 2006). Another example of a CBT school-based intervention that has been developed is the Queensland Early Intervention and Prevention of Anxiety Project, in which youth participate in 10 1- to 2-hour weekly group sessions with supplemental parent sessions (Dadds, Spence, Holland, Barrett, & Laurens, 1997). Lastly, the Coping with Stress intervention by Clarke et al. (1995) is a group-based intervention for managing stress, conflict, and emotions through 15 60-minute sessions. Results of a study by Lewinsohn and Clarke (1999) using an RCT design indicated that participants who received intervention had fewer diagnoses of depression than the control group at follow-up. In another meta-analysis of 47 trials of 32 prevention programs for depression by Stice, Shaw, Bohon, Marti, and Rohde (2009), it

was found that the majority of trials demonstrated small effects for reducing depressive symptoms.

Although there are existing prevention and intervention programs to address anxiety and depression concerns, these were primarily adapted from clinical CBT interventions and the majority are not considered feasible for use in schools. Even if an intervention is made for a small-group setting instead of individual therapy and is modified to be shorter, which most of the CBT-based programs reviewed in past meta-analyses have been adapted from longer individual CBT interventions, schools cannot realistically implement these programs within tier 2 of an MTSS framework (Herzig-Anderson, Colognori, Fox, Stewart, & Warner, 2012). For example, Herzig-Anderson et al. (2012) examined several school-based anxiety treatment programs for youth and found that the majority of these interventions needed to be implemented by a trained mental health provider, such as a psychologist or advanced graduate student researcher. Implementation by a trained mental health provider is cost-prohibitive and resource-intensive (Herzig-Anderson et al., 2012), which does not suggest feasible implementation for a tier 2 intervention in schools that have clear limitations on resources. Furthermore, students are pulled out of academic instruction to receive small-group instruction for upwards of 12 to 30 or more hour-long sessions, which may put additional stress and academic demands on students who already have internalizing behavior concerns (Herzig-Anderson et al., 2012). Gresham et al. (2013) suggested that although pull-out skill-building instruction makes sense in the prevention of internalizing problems, these existing CBT interventions are not always feasible in the school setting and may be difficult to implement with fidelity.

Individualized Intervention

At tier 3, the most intensive level of intervention, students receive individualized supports to address problems that were not adequately addressed using tier 1 or tier 2 supports. Students may receive intensive one-on-one instruction that is often individualized to the student's needs. Once a student's level of need has reached tier 3, schools may identify the student for additional supports, such as special education or making a referral to a community mental health agency to determine if the student meets criteria for a mental disorder or special education placement. There are several existing individualized manualized CBT interventions for depression and anxiety that could take place at the tier 3 level, such as ACTION and Coping Cat. ACTION is a treatment program developed for the clinical setting that can be administered in an individual or small group format for mood disorders including major depressive disorders and dysthymia (Stark, Schnoebelen, Simpson, Hargrave, Molnar, & Glenn, 2005). ACTION was developed for the clinical setting, although Stark, Arora, and Funk (2011) discuss the possibility of using ACTION in the school setting as a tier 3 intervention for depressive concerns. ACTION is an evidence-based manualized treatment that includes 20 hour-long sessions focused on psycho-education, goal-setting, coping skills training, cognitive restructuring, problem-solving skills, as well as parent training (Stark et al., 2011).

Coping Cat is a manualized intervention that is provided in an individual therapy format to treat anxiety disorders. Coping Cat was developed for the clinical setting, although could be implemented in the school setting by a trained mental health provider (Kendall, 1990; Herzig-Anderson et al., 2012). Coping Cat is an evidence-based CBT intervention for children ages 8 to 12 with approximately 12 60-minute individual and

parent sessions that teach CBT skills to address anxiety and engage the child in exposure exercises to reduce anxious feelings and behaviors (Kendall & Hedtke, 2006). An adolescent version of Coping Cat, the C.A.T Project, was developed for adolescents ages 13-17 (Kendall & Hedtke, 2006). Although there is a strong evidence base for individual CBT treatments such as Coping Cat (Kendall & Hedtke, 2006) to treat youth anxiety disorders, Barrett and Pahl (2005) estimated that the cost of individualized treatment programs such as ACTION or Coping Cat could be upwards of \$2,000. Only focusing on treating individuals who have diagnosed internalizing disorders may not be the most cost-effective approach in the school setting to address internalizing concerns (Barrett & Turner, 2001). In addition, although these interventions have the possibility of being utilized in the school setting, the time demands placed would be challenging for both (a) school-based mental health providers, who must balance such roles with other activities (e.g., assessment, consultation), and (b) students referred for intervention, who have little time available for weekly pull-out sessions on a long-term basis. Therefore, there is a need to focus on tier 2 selected interventions for students at-risk for developing internalizing disorders.

Existing Feasible Tier 2 Internalizing Interventions

In recognition of the lack of research regarding school-based tier 2 internalizing interventions, as well as the limited feasibility of many existing interventions, scholars have called for additional research on tier 2 internalizing interventions in the school setting. An initial focus has been on the extension of externalizing interventions to the internalizing domain (Cook et al., 2015). The following sections will review existing tier 2 internalizing interventions that are considered prevention or early intervention

programs and that demonstrate promising feasibility for tier 2 implementation in the school setting. When evaluating the following tier 2 interventions, there are several factors that should be considered to determine the extent to which each is appropriate for use in schools. Factors that are important to consider in regard to implementation of tier 2 interventions includes acceptability of the intervention to educators and student, feasibility of how likely the intervention is able to be carried out within the school setting, and fidelity of implementation based on the original protocol (Proctor et al., 2011).

Modified CICO for Internalizing Problems

Theoretical support for the inclusion of CICO to address internalizing problems extends from the use of CICO to effectively decrease externalizing behavior problems at the tier 2 level. CICO is founded in applied behavior analysis, with (a) with antecedent-based pre-correcting of student behaviors serving as a prompt for appropriate behavior, and (b) performance feedback and reward provision serving as reinforcement-based strategies (Colvin, Sugai, Good, & Lee, 1997). A review of CICO procedures and its foundational framework suggests it might also have relevance to internalizing concerns. For instance, CICO might be said to include elements of behavioral activation for depression, as CICO participants have the opportunity to engage in pleasurable activities through positive reinforcement (Kanter, Cautilli, Busch, & Baruch, 2005) and foster school connectedness through positive relationships with adult mentors (Chan et al., 2013). Additionally, the social-ecological theory reviewed by Herman and colleagues (2004) would suggest that the reinforcement-based mentorship will help youth generalize the skills they learn through the CBI sessions. Through CICO, students receive specific

feedback from teachers and their CICO mentor regarding the student's use of specific coping skills. Herman and colleagues' (2004) social-ecological theory would posit that this positive reinforcement could allow the student to better make the connection between learning the coping skills and when to actually use the coping skills in the real world. For example, a CICO mentor may remind a student to practice coping skills before taking a test or the teacher may provide feedback on a student's use of a coping skill during peer interactions, which provides the student with more feedback and reinforcement for using the skills across a variety of real-world situations in the school.

CICO includes many elements that have been recommended for use by scholars in addressing internalizing concerns via a social-ecological approach. Herman and colleagues (2004) called for the provision of praise, as well as modeling and reinforcement of appropriate communication and social participation. Gresham and colleagues (2013) suggested that researchers should consider using behavioral strategies such as goal-setting and progress-monitoring in internalizing interventions, both which are included in CICO.

Hunter et al. (2014) conducted the first study of its kind in examining modification of a tier 2 CICO intervention to address internalizing behavior problems. Participants included four elementary age students in 4th grade. The students targeted for the intervention were selected following school-wide universal screening using the Student Internalizing Behavior Screener (SIBS; Cook et al., 2011). In addition, an exclusionary criterion of not exceeding the cutoff for the Student Risk Screening Scale (SRSS; Drummond, 1994), a measure of externalizing behavior, was also used. A total of four 4th grade student participants were selected for the study, including two European

American males, one African American male, and one European American female. Using a multiple baseline SCD, teacher-led CICO was implemented for each of the students. The CICO intervention included the typical CICO components, which consisted of (a) a daily check-in, through which target replacement behaviors were reviewed and appropriate behavior was prompted, (b) the use of a daily progress report (DPR) across the school day, through which teachers reviewed and rate each target replacement behavior after each class period, and (c) a daily check-out, through which the student's DPR points were reviewed and students were reinforced for meeting their goal or encouraged to continue trying. The DPR was rated by the classroom teacher on a Likert scale of 1 to 3 from *Needs Improvement* to *Good*, and target replacement behaviors were developed based on items from the SIBS that the student scored high on. For example, target replacement behaviors included *making eye contact when in conversation* and *participating appropriately in class*. In addition to verbal praise, students received a tangible reward if their daily goal was met and the DPR was sent home for guardians to review and return the following day.

The Social Skills Improvement System (SSIS; Gresham & Elliott, 2008) Internalizing scale and SIBS (Cook et al., 2011) were used as pre- and post-test measures. Findings from teacher ratings on the SIBS (Cook et al., 2011) indicated that prosocial behavior ratings increased, and internalizing behaviors decreased for 3 out of the 4 participants, although only 1 of the 4 was considered no longer at-risk on the SIBS post-measure. The SSIS pre- and post-comparison indicated that all 4 students moved up a classification, indicating a decrease in internalizing behavior (Hunter et al., 2014). Next, a visual analysis of the DPR points was conducted for all four participants. An upward

trend was observed for all 4 participants during the intervention phase. Additionally, percentage of all non-overlapping data (PAND) was calculated for each participant as an effect size indicator (Parker, Hagan-Burke, & Vannest, 2007). The PAND across all participants was equal to 87.34%, which fell in the “effective” range (Scruggs & Mastropieri, 1998). Overall, Hunter and colleagues (2014) found that CICO modified to address internalizing behaviors was effective in decreasing internalizing behaviors for elementary-age participants in a pilot SCD study.

Dart and colleagues (2015) conducted a second internalizing-specific CICO study, with the intervention under consideration being peer-mediated. Three target students in first and second grade, including one European American female and two African American males, were selected based on SIBS universal screening results (Cook et al., 2011). The three target students had the highest SIBS total scores; additional criteria for participation in the study included not receiving any other behavioral intervention and not having received any office discipline referrals. Three fifth grade mentors were selected through teacher referral for the peer-mediated intervention and were trained in CICO procedures and supervised simultaneously by a trained teacher during the CICO process each day. Again, the CICO process consisted of the peer check-in including reviewing the student’s behavioral goal at the start of the day, teacher completing Daily Behavior Ratings (DBR) throughout the day, and a peer check-out at the end of the day in which the student’s DBR results were reviewed and the student received praise and a reward if his or her goal was met. DBR target behaviors, such as *smiles and seems happy* or *asks for help when needed* were determined based on teachers’ responses to the SIBS items for each individual student. Teacher and student views on social acceptability of the

intervention were also measured through two intervention acceptability rating scales. Results of the non-concurrent SCD study suggested two of the three students saw increases in teacher-reported DBRs. Non-overlap of all pairs (NAP) and Tau-*U* were calculated as effect size indicators. No significant effect sizes were noted for one of the participants; for another participant, moderate effect sizes were noted (NAP = .88, Tau-*U* = .77) and for the third participant, large effect sizes were noted (NAP = 1.00, Tau-*U* = 1.00; Parker & Vannest, 2009). Immediately following the intervention, none of the three students were at-risk on the SIBS screener according to teacher report; four weeks following completion of the intervention, one of the three students was again at-risk on the SIBS. Findings from the Dart et al. (2015) study indicated that peer-mediated CICO was a promising tier 2 intervention for internalizing behavior concerns, which effectively addresses the resource shortage using peer mentors instead of teacher mentors. Limitations of this study include the lack of teacher interview to determine student DBR goals and the use of a non-concurrent multiple baseline design.

Limitations to the interventions considered in both Hunter et al. (2014) and Dart et al. (2015) were also noted. Specifically, while both interventions were capable of promoting a student's use of coping skills he or she already possessed, neither were capable of promoting student learning of skills that were missing in their skill repertoire. This is given that both interventions lack instructional, skill-building components. For example, although negative cognitions of students were briefly targeted during check-ins with the mentor, such as the student worrying about peer interactions or thinking that they would fail a quiz, the authors stated that additional instruction to teach participants how to positively cope with negative cognitions may have been beneficial. Again, given

the preliminary nature of these findings, Dart and colleagues noted that CICO should be further studied with a variety of populations and internalizing behaviors, including anxious, depressive, and withdrawal behaviors in order to further support the use of modified tier 2 CICO for internalizing concerns.

A third modified CICO study was recently conducted, in which peer-mediated CICO was employed for elementary age students with social skills difficulties (Collins, Gresham, & Dart, 2016). Sociometric rating data were used for the study, in which classmates identified the top three peers they were most likely to play with and the three peers least likely to play with. The socially neglected peers were selected as target intervention students and the socially popular peers were selected as peer mentors. Peer dyads were matched on gender for three of the four pairs, and students were in 4th and 5th grade in an urban school district. Students who had high externalizing subscale scores from the SSIS (Gresham & Elliott, 2008) were excluded from the study. Using a concurrent multiple-baseline SCD, peer-mediated CICO was again used for this study, in which the SSIS was used to identify target goals through teacher interviews for the student's Daily Behavior Report Cards (DBRC). Following implementation of the peer-mediated CICO for social behaviors, Tau-*U* statistics indicated a moderate effect on social skills (Tau-*U* = .71), and visual analysis indicated that the intervention was effective for three out of four participants in increasing the number of DBRC points earned for target behaviors. Additional outcomes included an improvement in social status for only 1 out of 4 students on the sociometric rankings, and SSIS teacher ratings of social skills moved up to the average range for all 4 participants, compared to falling in the below or well-below average social skills range prior to intervention.

The findings from each of these three studies (Hunter et al., 2014; Dart et al., 2015, Collins et al., 2016), in which students were provided with daily reinforcement of prosocial skills, suggest that CICO may be an appropriate tier 2 intervention to address internalizing behavior. One limitation of the Collins et al., (2016), Dart et al., (2015) and Hunter et al. (2014) studies is that the outcome measures included were teacher ratings only; student self-report ratings or parent ratings may also have been beneficial to include in a multi-informant approach. Because teachers were aware of and taking part in the intervention, rater bias was not able to be controlled for in these CICO studies due to the mono-informant approach.

An additional limitation of these studies is that tier 2 CICO for internalizing behavior may be most appropriate for students with performance deficits, compared to students who have skill acquisition deficits who may need additional instruction (Collins et al., 2016). Because students were not provided explicit instruction in how to engage in the appropriate target behaviors such as interacting with peers appropriately or asking for help when needed, it should be assumed that these students already had the knowledge of how to perform these skills. Therefore, once students received additional reinforcement and prompts to engage in appropriate behavior, students were able to demonstrate increases in prosocial behavior and decreases in internalizing behavior. In comparison, it can be assumed that students with skill acquisition deficits would not have demonstrated such improvements without additional explicit skill-based instruction (Gresham et al., 2010). Additional studies have since attempted to address this limitation by examining modified CICO programs that incorporate an instructional component, increasing the intervention's relevance to students with either skill or performance deficits.

CICO + Brief Cognitive-Behavioral Instruction

In acknowledging the possibility of skill deficits related to tier 2 internalizing concerns, Cook and colleagues (2015) were the first researchers to develop a mentorship-based modified CICO program coupled with brief cognitive-behavioral instruction (CBI), which is intended to address both skill and performance deficits. CBI is defined as CBT-oriented instruction intended to promote student identification of distorted thoughts and acquisition of various coping and problem-solving strategies. Cook and colleagues (2015) developed the intervention termed the Courage and Confidence Mentorship Program (CCMP), which includes positive reinforcement of skills through modified CICO along with brief CBI through two forty-minute sessions. Three male and two female participants in grades 6-8 were selected for the study from an ethnically diverse sample in an urban school setting, in which the school had been using MTSS and school-wide PBIS for the past 4 years. Participants were selected using a multiple gating procedure, in which teachers completed the SIBS (Cook et al., 2011) on all students in the classroom. Those students identified with moderate levels of internalizing behavior (above the cut-off for risk but below the cut-off for highest risk) were first selected. Then, those students rated their ability to manage emotions through daily Subjective Units of Distress (SUD) ratings; students who had difficulty managing their emotions as determined by high SUD ratings were selected for the study. The CCMP intervention included the following components: (a) introduction to the *life bus* metaphor through two 40-minute sessions, in which the CBI instructor used empowerment (i.e., “you are the driver of your own bus”) and CBI skills to encourage students to focus on identifying and managing emotions such as worry, sadness, and anger; (b) daily morning check-ins with the adult mentor; (c)

performance monitoring of student target goals throughout the school day; and (d) daily afternoon check-outs to provide the student feedback. Importantly, the CCMP CBI lessons were led by a teacher; internalizing processes were not discussed in-depth. Through a concurrent multiple-baseline SCD, students were randomly presented the CCMP intervention. SUD ratings were used as the outcome variable. Findings indicated that participant SUD mean scores decreased from an average of 7.33 during the baseline phase to 3.33 during the intervention phase. Additionally, mean scores on the Teacher Report Form (Achenbach & Rescorla, 2001) Internalizing scale went from 68 pre-intervention to 57 post-intervention. SCD analysis indicated a decrease in SUD trend lines across all 5 participants during the intervention, and moderate effect sizes when comparing non-overlapping points (Cook et al., 2015). Although the findings of this study were positive, results were preliminary based on the small SCD sample size.

Fiat and colleagues (2017) extended the work of Cook et al. (2015), examining CCMP effectiveness with elementary age students. Using the same multiple gating procedure as found in Cook et al. (2015), Fiat and colleagues identified 6 students ages 7-10 with diverse ethnic backgrounds. Three multiple baseline dyads were paired, and teacher-rated student internalizing behaviors using a Direct Behavior Rating-Single Item Scale (Christ, Riley-Tillman, & Chafouleas, 2009) were used as the progress-monitoring outcome for CCMP. Analyses indicated positive upward trend of social participation and decrease in somatic complaints for participants. Tau-*U* SCD effect size estimates indicated that 5 out of the 6 participants' results met criteria for effectiveness (Parker & Vannest, 2009). According to analysis of non-overlapping data points, three participants' results were highly effective and three were considered effective (Parker, Vannest, Davis,

& Sauber, 2011). Social acceptability of the intervention was again rated by teachers and student participants and the CCMP was found to be a socially acceptable intervention.

Limitations of both the Cook et al. (2015) and Fiat et al. (2017) CCMP studies are that long-term effects of the intervention were not examined; although the findings are promising for addressing tier 2 internalizing concerns in elementary and middle school students, findings are preliminary and additional research is needed in this area.

Regarding the limited cognitive-behavioral instruction in CCMP, Cook and colleagues (2015) suggested that CCMP may also serve as a supplement to more extensive tier 3 individual CBT. Although the CCMP briefly addressed evidence-based CBI strategies such as identifying emotions and using cool-down strategies, skill-based interventions should include adequate opportunity for students to learn and practice these cognitive-behavioral strategies. Unfortunately, it is unlikely that two 40-minute sessions were provided adequate opportunity for such learning and practice. The evidence base for individual and small-group CBT in the clinical setting to address internalizing problems could suggest that small group tier 2 interventions using a larger but still manageable number of CBI sessions along with modified CICO may better address student internalizing skill deficits.

Resilience Education Program

The Resilience Education Program (REP) was developed in response to the noted limitations of the previously described tier 2 internalizing interventions. The novel intervention includes both short-term CBI and reinforcement-based mentorship through CICO to address both performance and skill deficits in internalizing behavior (Kilgus & Eklund, 2017). REP CBI takes place in a small-group setting across five 30-minute

sessions over the span of five weeks. REP developers considered multiple literature bases when developing the intervention, including evidence for (a) CBI practices that work for reducing anxiety and depressive symptoms in youth in a clinical setting, as well as (b) CICO in addressing both externalizing and internalizing problems. Both the social-ecological framework of Herman et al. (2004) and cognitive-behavioral theory were used as the framework of REP, in order to integrate evidence-based CBI practices that address internalizing behavior concerns within a school-based context that is feasible to implement and promotes generalization of skills through CICO-based mentorship.

REP CBI lessons correspond to a range of topics, including emotion recognition, cognitive restructuring, coping skills, and problem-solving skills. REP CBI follows a say-show-do direct instruction model, with lesson components corresponding to verbal instruction, modeled instruction, opportunities for practice with feedback, and homework assignments. CICO procedures include daily check-ins, progress monitoring of student target internalizing behaviors and teacher feedback throughout the day, and daily check-outs with mentors in which the student receives praise and a reward if their daily goal has been met.

REP Pilot Study. Allen et al. (in press) conducted a pilot SCD study of REP in an urban elementary school setting. The school completed universal screening on all students using the Social, Academic, and Emotional Behavior Risk Screener-Teacher Rating Scale (SAEBRS-TRS; Kilgus & von der Embse, 2014). Students who were identified as at-risk on the social and emotional behavior subscales as well as the total behavior subscale were considered for the study. Three students in 4th and 5th grade who

demonstrated internalizing behavior difficulties, such as frequent worrying, withdrawal, and pervasive negative affect were selected for participation.

The REP intervention was implemented using a concurrent multiple-baseline SCD. Several outcome measures were collected throughout implementation. The DBR-SIS data were collected throughout as a progress-monitoring measure, in which teachers completed ratings on three target behaviors for the student. The Internalizing Behavior Intervention Protocol (IBOP), which is a systematic direct observation measure developed by Kilgus, Dart, von der Embse, and Collins (2015), was used as a primary outcome measure to directly observe student internalizing behavior in the classroom, including social engagement, negative affect, as well as specific internalizing behaviors for each student, such as worry or irritability. Students were observed using the IBOP momentary time sampling measure three to four times per week during implementation. An additional outcome measure, the Direct Observation Form (DOF; McConaughy & Achenbach, 2009), was used as an observation measure to record anecdotal data regarding the student's behaviors, interactions, and emotions.

Compared to pre-scores, the Behavioral Assessment Scale for Children-3rd Edition (BASC-3; Reynolds & Kamphaus, 2015) Teacher Rating Scale post-scores indicated reductions on the Internalizing Problems Scale. Additionally, intervention acceptability was measured by having teachers complete the Usage Rating Profile-Intervention, Revised (UPR-IR; Briesch, Chafouleas, Neugebauer & Riley-Tillman, 2013). Teachers found REP to be a socially acceptable intervention that is feasible to implement. PAND was calculated for observed social engagement, negative affect, and targeted internalizing behaviors (Parker et al., 2007) to estimate effect sizes (Scruggs &

Mastropieri, 1998). PAND scores for negative affect and social engagement suggested that REP was effective for two students and potentially effective for the third student. Visual analysis of SCD indicated decreasing trend lines and level changes for 2 of the 3 participants across targeted internalizing behaviors and negative affect, in addition to observed increase in social engagement. Overall, findings for this preliminary SCD pilot study indicate promising support for REP as a feasible tier 2 intervention to reduce internalizing behavior and increase prosocial behavior (Allen et al., in press).

Proximal Intervention Outcomes

In summary, a review of the literature suggests that several existing interventions that include components such as CICO and CBI may be effective at reducing internalizing behavior concerns and increasing prosocial behavior (Cook et al., 2015; Hunter et al., 2014; Collins et al., 2016; Fiat et al., 2017; Allen et al., in press). However, there are limitations in this literature base, including the lack of larger and more generalizable studies, as well as the absence of information regarding the mechanisms by which these interventions drive change in internalizing behaviors. In order to best understand intervention components for tier 2 internalizing concerns, the current study aims to investigate possible mediators of change related to internalizing behavior.

Coping. Previous research indicates that perceptions of self-esteem, social competence, and social supports may serve as protective factors for students with internalizing problems (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Masten & Garmezy, 1985; Bornstein, Hahn, & Haynes, 2010). Compas and colleagues (2001) discussed the importance of coping in response to stress in childhood and adolescence. Broadly, coping is defined as the ability to address stressful situations

by using cognitive and behavioral processes in order to resolve and manage that stress effectively (Compas et al., 2001). Several types of coping that youth may engage in were outlined by Compas et al., including seeking social support, active coping (which includes CBI-based coping strategies such as problem-solving and cognitive restructuring), avoidance (such as distracting oneself), and acceptance (such as positive self-talk).

When examining the impact of coping skills on internalizing problems, one key difference between mental health and mental disorder is the ability to successfully cope with life stressors (WHO, 2017). Individuals who successfully cope with life stressors are considered to have mental health, whereas individuals who have difficulty coping with stressors may be at risk for a mental disorder and may exhibit internalizing problems such as depression or anxiety in response to stressors. Therefore, CBI instruction focuses on teaching youth positive coping skills, which is based on the theoretical foundation of CBT that indicates that thoughts, feelings, and behaviors surrounding situations are important to consider in order to effectively treat internalizing disorders.

Compas and colleagues (2001) reviewed 63 studies that examined the relationship between coping skills and psychopathology. When specifically examining those studies that looked at internalizing problems, Compas and colleagues found that 29 studies showed a relationship between use of active coping skills such as problem-solving and decreased internalizing symptoms, with the majority of those studies demonstrating statistically significant effects. Findings also indicated that active coping skills were positively associated with higher levels of academic and social competence. Based on these findings that children and adolescents' coping is related to levels of

psychopathology, including for internalizing problems, there is theoretical support for measuring coping skills as a pre- and post-outcome in an internalizing intervention.

Social support and perceived control of internal states. In addition to teaching students active coping skills, perceived social support from others, as well as the perception of one's ability to control internal states, are also important protective factors that may impact student risk for internalizing disorders. Social support may be provided by a variety of individuals including peers, family members, or teachers, in a variety of ways, such as by providing advice, helping problem-solve a situation, or offering a hug, in response to a stressful situation that a youth experiences (Dumont & Provost, 1999). Perceived control of internal states can be defined as one's own perceptions about his or her ability to control internal emotional states that impact one's behavior and outcomes in situations (Pallant, 2000).

Regarding research support for examining the relationship between social support and internalizing problems, Compas and colleagues (Compas, Slavin, Wagner, & Vanatta, 1986) found that adolescents who reported higher satisfaction with social support had overall less psychological symptoms, and adolescents who reported lower satisfaction with social support had higher levels of anxiety, depression, and psychosomatic symptoms. Bornstein and colleagues also (2010) developed a cascades model of internalizing and externalizing behavior alongside social competence in prediction of later outcomes in adolescence. It was found that social competence, including social support from others, predicted internalizing and externalizing behavior at ages 10 and 14 (Bornstein et al., 2010). In addition, Compas and colleagues (Compas, Banez, Malcarne, & Worsham, 1991) stated that youth with higher perceptions of control

were more likely to use problem-solving skills to cope with stressful situations, whereas youth with lower perceptions of control were more likely to demonstrate high levels of internalizing concerns such as depressive or anxious symptoms. Theoretical support for consideration of the relationship between perceived control of internal states and internalizing problems would suggest that youth with greater perceived control of one's emotions and behaviors are more confident in their abilities to successfully navigate and cope with stressful situations, and therefore may take more active steps toward positively coping with stressors (Pallant, 2000).

Furthermore, based on Herman and colleagues' (2004) social-ecological theoretical framework for internalizing problems, there is a need to examine sociocultural influences of internalizing problems, instead of solely focusing on individual coping skills of the child or adolescent. Examples of those sociocultural factors may include the role that social support of individuals, such as family, peers, and teachers, plays in prevention of internalizing disorders. Therefore, the individual student's perception of social support relative to their peers, family, and school, are also important to consider as possible outcomes. For the purpose of this study, additional outcomes including coping skills, social support, and perceived control of internal states were taken into consideration when examining the effectiveness of the REP tier 2 intervention.

CHAPTER III: METHODS

Research Design

The current study employed a waitlist randomized controlled trial design to further examine the effectiveness of REP across elementary and middle school students. Student participants were randomly assigned to two conditions: treatment and waitlist control. Data collection occurred at pre-intervention and post-intervention for both groups. Participants in the intervention group initially received the REP intervention and participants in the waitlist control group received the REP intervention following completion of post-intervention data collection.

Power Analysis

This study utilized an underpowered RCT design. The use of such a design is in accordance with intervention development guidelines from the Institute of Education Sciences (IES), where the culminating project of intervention development research is a pilot efficacy study, such as an underpowered RCT. A power analysis was conducted using Optimal Design software (Faul, Erdfelder, Lang, & Buchner, 2009). Given the proposed underpowered nature of this pilot study, we chose to solve for a power level ($1-\beta$) of .70, rather than the traditional .80 level. Additional parameters specified within the power analysis included $\alpha = .05$ (two-tailed), level-2 intraclass correlation coefficient = .17 (Eklund, Kilgus von der Embse, Beardmore, & Tanner, 2016), and effect size variability = .10. Of interest was the number of students required to detect a medium effect size ($d = .50$). It was determined that a total sample size of approximately 63 participants was needed to have a power level of .70 and detect a medium effect size between intervention and control group participant results.

Participants

Participants were selected from two school districts in the Midwest, one of which was rural (Site 1) while the other was urban (Site 2). Although the target number of participants was equal to 63 students, due to recruitment challenges, a final total of 39 students were enrolled in the study. Constrained randomization was used to ensure an equal number of students were assigned to the intervention and waitlist control groups across schools. Student participants ranged in age from 9 to 13 years and were recruited from 4th through 7th grade. This particular grade and age range was targeted in accordance with the structure and nature of REP CBI, which presumes an adequate level of meta-cognition and self-awareness. Student demographic information was collected, including information regarding age, grade, race/ethnicity, gender, and socio-economic status. Inclusionary criteria for students to participate in the intervention included emotional or internalizing risk on a universal SEB risk screener and participation in the general education setting. Exclusionary criteria for student participants included receiving special education supports, current mental disorder diagnoses, and current receipt of other school- or community-based mental health behavioral supports. Because this intervention was made to address tier 2 concerns, in which students are exhibiting some symptoms or risk for internalizing disorders, but impairment and distress is not yet to the level of meeting criteria for a mental disorder, exclusionary criteria that a student may not have mental disorder diagnoses or be currently receiving outside community-based mental health supports was applied. In addition, students who were receiving other behavioral supports at school were not eligible for participation due to the inability to determine whether any changes in outcomes are attributed to REP or other behavioral supports.

Participants were enrolled in the study between December 2017 and March 2018, and data collection took place between January 2018 and May 2018. Approximately 35 middle school students met criteria and were recruited at Site 1, with 13 students receiving parental consent. Approximately 24 elementary school students were recruited at Site 1, with 13 students receiving parental consent. One Site 1 participant withdrew from the study prior to beginning the intervention due to their parent revoking their initial consent. Approximately 30 elementary students were recruited at Site 2, with 14 students receiving parental consent. The total N obtained after removing one participant, who became home-schooled during the study, was 38 participants, with 21 assigned to the intervention group and 17 assigned to the waitlist control group. Please see Table 1 for a summary of student demographic information.

Table 1

Participant characteristics

Characteristic	<i>n</i>	%	<i>n intervention</i>	<i>n control</i>
Gender				
Female	25	65.8	15	10
Male	13	34.2	6	7
Race/ethnicity				
Hispanic	2	5.2	2	0
Black/African American	8	21.0	4	4
White	22	57.9	12	10
Asian/ Pacific Islander	1	2.6	0	1
More than one ethnicity	5	13.2	3	2
Grade				
Fourth	13	34.2	8	5
Fifth	13	34.2	7	6
Sixth	9	23.7	5	4
Seventh	3	7.9	1	2
Free-Reduced Lunch Status				
Free	12	31.6	7	5

Reduced	3	7.9	3	0
Full Price	9	23.7	4	5
Not provided	14	36.8	7	7

In addition, educators in the schools were recruited to serve as CICO mentors. Educators interested in serving as CICO mentors for the study could be teachers, administrators, school psychologists, or counselors in the schools. The goal was to have one CICO mentor for every three students in the intervention; therefore, eight CICO mentors were recruited. Teachers for students who meet criteria for participation in the study were asked to participate in CICO by providing performance feedback to students throughout each day of the intervention. Additionally, CBI instructors were graduate students in school psychology.

Measures

Behavior Risk Screeners

Both Site 1 and Site 2 used behavior risk screening measures to identify and provide targeted supports for students at-risk for possible social, emotional, and behavior difficulties. These measures were already in place as universal school practices at each site prior to the current study. Both teacher and self-report behavior risk screening measures were used to identify possible students for the current study. Site 1 used the Social, Academic, and Emotional Behavior Risk Screener (SAEBRS) completed by teachers and the Strengths and Difficulties Questionnaire (SDQ) as a self-report measure for youth ages 11 – 17. Site 2 used the Early Identification System (EIS) teacher report and self-report measures. Additional information about each of the screening measures is included below.

Social, Academic, and Emotional Behavior Risk Screener. The SAEBRS is a social-emotional and behavior screener designed for elementary, middle, and high school students (Kilgus et al., 2013) completed by classroom teachers. Recent studies have shown that the SAEBRS is a psychometrically defensible screener, with findings supportive of score reliability, validity, and diagnostic accuracy (Kilgus, Eklund, von der Embse, Taylor, & Sims, 2016). Teachers complete the SAEBRS for each student by rating the student's behavior on a four-point Likert scale across three subscales: social behavior (6 items; ability to maintain peer and adult relationships), academic behavior (6 items; ability to be prepared for and benefit from academic instruction), and emotional behavior (7 items; ability to regulate emotions and respond to challenging events). Teachers rate SAEBRS items based during the child's behavior in the previous month. Prior to scoring, negatively-worded SAEBRS items are reverse scored. Summed scores are then interpreted as higher values representing more adaptive functioning. Summed SAEBRS scores are then dichotomized to support decisions regarding student risk status. Total scores ≤ 36 are considered in the at-risk range. Risk for the social behavior subscale is ≤ 12 , risk for the academic behavior subscale ≤ 9 , and risk for the emotional behavior subscale is ≤ 16 . Students at Site 1 were considered eligible for study participation if they demonstrated risk on both the total and emotional behavior scales.

Strengths and Difficulties Questionnaire. The SDQ is a brief behavior risk screener for youth ages 11 – 17 (Goodman, 1997); both the self-report and teacher measures were used in the current study for students at Site 1. The SDQ has been shown to be a valid and reliable brief screening measure of psychopathology in children and adolescents (Goodman, 2001; Bourdon, Goodman, Ray, Simpson, & Koretz, 2005;

Stone, Otten, Engels, Vermulst, & Janssens, 2010; Jenkins et al., 2014). The SDQ focuses on positive attributes and risk symptoms the child or adolescent has exhibited in the past six months. On the self-report and teacher report form, respectively, students or teachers rate 25 items about students' feelings and behaviors on a 3-point Likert scale (1 = *Not True* to 3 = *Often True*). An overall Total Difficulties score is produced, along with five subscale scores: Emotional Symptoms, Conduct Problems, Hyperactivity/Inattention, Peer Problems, and Prosocial. Total Difficulties scores ≥ 16 and Emotional Symptoms subscale scores ≥ 6 are considered in the at-risk range. Examples of items from the Emotional Symptoms subscale include "often unhappy, depressed, or tearful" and "many worries or often seems worried". Students at site 1 were considered eligible for study participation if they demonstrated overall risk on the self-report Total Difficulties scale along with risk on the Emotional Symptoms subscale.

Early Identification System. The Early Identification System is a brief behavior risk screener designed for elementary, middle, and high school-age students and is the screener used in Site 2 to identify at-risk students (Huang, Reinke, Thompson, Herman, & County Schools Mental Health Coalition, 2018). There is a student self-report version for students in grades 3-12, and a teacher report version completed by teachers for students in grades kindergarten through 12th grade. Items include indicators related to academic competence, attention, peer relationships, social skills, internalizing problems, externalizing, and self-regulation problems. The factor structure was supported through an Exploratory Factor Analysis and Confirmatory Factor Analysis with two samples of students, with the following distinct factors: peer relations, internalizing behaviors, externalizing behaviors, relational aggression, emotional regulation, and school

engagement. Students' individual scores are calculated and students with moderate to high risk in any area are identified. Students at the elementary school Site 2 were eligible for study participation if they demonstrated risk for internalizing behavior problems on the self-report or teacher report measure. Examples of internalizing problem items include "In the past month, I felt hopeless" and "I have a hard time asking for help".

Teacher Interview

A brief teacher interview was conducted to identify problem behaviors and target replacement behaviors for each student related to internalizing concerns. Specifically, a portion of the interview component of the Internalizing Behavior Observation Protocol (IBOP; Kilgus, et al., 2015) was used to conduct brief 5 to 10-minute teacher interviews in order to identify specific internalizing concerns for each student in the intervention group. Using the IBOP, teachers are first asked to provide a description of student strengths and challenges. Then, 15 specific types of internalizing problems are presented to the teacher, in which the teacher is asked to identify the specific types of internalizing behaviors that the student engages in. A summary of the 15 operational definitions for each internalizing problem that teachers rate can be found in Appendix D. Each student's teacher (or teachers in the case of middle school students) selected the top internalizing behavior for each student. A desired replacement behavior was then identified for this behavior. Each student was provided feedback on their desired behavioral replacement behavior through their DPR CICO form on a daily basis.

Achenbach System of Empirically Based Assessment School-Age Scales

The Achenbach System of Empirically Based Assessment (ASEBA) School-Age Scales consists of three separate forms that measure student behavior across a variety of

subscales (Achenbach & Rescorla, 2001). The Child Behavior Checklist for Ages 6-18 (CBCL) is completed by the child's caregiver, the Teacher's Report Form for Ages 6-18 (TRF) is completed by the child's teacher, and the Youth Self-Report for Ages 11-18 (YSR) is completed by the child (Achenbach & Edelbrock, 1983). Past studies have shown that the ASEBA School-Age Scale scores demonstrate internal consistency, test-retest reliability, acceptable cross-informant agreement, and stability in scores across rating periods (Achenbach & Rescorla, 2001). ASEBA School-Age Forms have also previously demonstrated sufficient criterion-related validity, construct validity, and content validity (Achenbach & Rescorla, 2001). The following types of scales are produced from scoring: (a) Competence & Adaptive scales, which includes Activities, Social, and School scales; (b) empirically-based scales including Anxious/Depressed, Withdrawn/Depressed, Somatic Complaints, Social Problems, Thought Problems, Attention Problems, Rule-Breaking Behavior, Aggressive Behavior, Internalizing Problems, Externalizing Problems, and Total Problems; and (c) DSM-Oriented scales, including Affective Problems, Anxiety Problems, Somatic Problems, ADHD Problems, Oppositional Defiant Problems, and Conduct Problems. The ASEBA School-Age Scales were used as pre- and post-test measures in the current study. Specifically, the Anxious/Depressed, Withdrawn/Depressed, Somatic Complaints, and Social Problems scales were of particular interest in examining pre- and post-test measures. These scales were selected as constructs of internalizing problems and related CBI skills that participants were taught in relation to anxious and/or depressed thoughts, feelings (including somatic sensations such as stomachaches), and behaviors throughout the intervention. In addition, the broader Internalizing Problems scale was of interest in

examining pre- and post-test measures, as an overall measure of change in internalizing difficulties.

Self-Report Coping Scale

The Self-Report Coping Scale (Causey & Dubow, 1992) is a 34-item self-report rating scale that assesses students' coping skills. Students are provided with two situations regarding having a disagreement with a friend and getting a bad grade on an assignment and report and use a 5-point Likert scale from 1 (none of the time) to 5 (all of the time) to respond how much of the time the student usually engages in specific coping skills. Examples of items include "talk to somebody about how it made me feel" and "get mad and throw or hit something". The SRCS measures both Approach and Avoidance coping styles. The Approach subscales include Seeking Social Support and Problem-Solving, whereas the Avoidance subscales include Distancing, Internalizing, and Externalizing. The SRCS has been shown to demonstrate reliability and validity with students in elementary and middle school grades (Causey & Dubow, 1992). The overall Approach and Avoidance scales along with each subscale were used as outcome measures. Accordingly, the SRCS was completed by all participants prior to beginning the intervention and during post-intervention data collection.

Child and Adolescent Social Support Scale

The Child and Adolescent Social Support Scale (CASSS; Malecki, Demaray, Elliott, & Nolten, 2000) is a 60-item self-report rating scale that assesses students' perspectives of various social supports for students in grades 3 to 12. For the purpose of the current study, the CASSS was used as an outcome between the intervention and waitlist control group. The CASSS subscales include Parents, Teachers, Classmates,

Close Friends, and School supports. Items such as “my teacher helps me solve problems” and “people in my school care about me” are completed using a 6-point Likert scale from 1 (never) to 6 (always). In addition, for each item, the importance of that item for the student is rated on a 3-point Likert scale from 1 (not important) to 3 (very important). Malecki and colleagues (2000) indicated that the importance items are to assess how much the youth values each type of support. Subscales of interest in the current study were the Teachers and School subscales, which were used as a outcome measures of student-perceived social support. Therefore, the four subscales included in the current study were Teacher Support, Importance of Teacher Support, School Support, and Importance of School Support. Past research indicates that the CASSS is a reliable and valid measure of social support for youth (Malecki & Demaray, 2002; Demaray & Malecki, 2002). The CASSS was completed by all participants prior to beginning the intervention and during post-intervention data collection.

Perceived Control of Internal States Scale

The Perceived Control of Internal States Scale (PCOISS) is an 18-item rating scale that assesses perceived control of an individual’s internal emotional states (Pallant, 2000). Using a 5-point Likert scale ranging from 1 (Strongly Agree) to 5 (Strongly Disagree), individuals respond to items such as “I don’t have much control over my emotional reactions to stressful situations” and “If my stress levels get too high, I know there are things I can do to help myself”. The PCOISS has been shown to be a reliable and valid construct of control of internal states, and research on the PCOISS suggests that individuals with higher perceived control of internal states have fewer psychological symptoms (Pallant, 2000). Although the PCOISS was developed for adults, it is written at

a 5th grade reading level. Because there are not existing measures of perceived control specific for youth, the PCOISS was included as a measure of one's ability to influence and control his or her own internal states that impacts one's own thoughts, emotions, and behaviors. Therefore, the PCOISS was included as an outcome measure and was thus completed by all participants prior to intervention and during post-intervention data collection.

Intervention

The REP intervention consists of two components, including five weekly CBI lessons and daily CICO procedures with educators over the course of 10 weeks (Kilgus & Eklund, 2017).

Cognitive-Behavioral Instruction

The REP includes five CBI lessons that are delivered via small-group instruction. Lessons correspond to a range of topic, including emotion recognition, cognitive restructuring, coping skills, and problem-solving skills. REP CBI follows a say-show-do direct instruction model, with lesson components corresponding to verbal instruction, modeled instruction, opportunities for practice with feedback, and homework assignments. Each CBI lesson lasts approximately 30-45 minutes. Each lesson is delivered across one weekly session within each week across five weeks. The REP curriculum consists of the following five lessons: (1) team building and introduction to REP, which includes establishing procedures and group structure; (2) identifying strong feelings and emotions; (3) using cognitive restructuring to prevent negative thoughts; (4) using coping skills to manage strong emotions, and (5) using problem-solving strategies to generate solutions. After learning about how to recognize strong feelings such as worry

and sadness, students are taught cognitive restructuring by learning how to identify negative thoughts and replace those with positive self-talk by “Thinking Good Thoughts.” For example, if a student is feeling anxious about talking in front of the class, he or she may recognize negative thoughts such as “I will embarrass myself” or “People will think I’m stupid” and learn to replace those with more helpful positive thoughts, such as “I can do this” or “Lots of my classmates are nervous too, it will be okay”. Examples of coping skills that are taught includes the “See the trigger, Take deep breaths, Use your imagination” (STU) skill, in which students are taught how to do controlled belly breathing and positive imagery when experiencing strong emotions. Regarding problem-solving skills, students are taught using “Think and Act” steps to walk through the steps of problem-solving difficult situations. Additional details regarding specific concepts that will be taught in each section as well as objectives are included in Appendix A.

Check-In/Check-Out

In addition to CBI lessons, students in the REP intervention receive individualized goals on the Daily Progress Report to address internalizing concerns and help promote generalization of skills across the school setting. The child’s teacher(s) as well as the child completes a daily progress monitoring form after each period, called a Daily Progress Report (DPR), in which the child and teacher will rate the extent to which the child displayed instructed skills and displayed behaviors incompatible with targeted problem behaviors. Students are paired with an educator in their school who provided daily check-ins each morning and daily check-outs each afternoon to discuss the child’s progress toward goals for the duration of the REP CBI lessons and for several weeks

following to encourage generalization and maintenance of the skills taught during the CBI lessons.

Daily Progress Report. On a daily basis, participating teachers completed the DPR for each student in the intervention at the end of each designated class period. Teachers rate students' behavior and provide feedback on how well the student "controlled emotions" (related to use of coping skills), "made good choices" (related to use of problem-solving skills), and a specific replacement behavior that had been selected as an incompatible behavior to replace the student's top internalizing behavior problem, such as "participated in class activities." Teachers rate each behavior on a scale of 0 to 2, from Never to Often. In addition, students rate their own feelings on the DPR at the end of each class period, using a 7-point Likert scale that ranges from 1 to 7 with corresponding feeling descriptors and emoticons, with 1 being "Terrible", 4 being "So-so", and 7 being "Fantastic!". Both teacher and student ratings are recorded following each designated period of the day. The DPR can be found in Appendix B.

Check-Ins/Check-Outs. At the start of each day, participants in the intervention group complete a daily check-in with their CICO mentor in which the DPR form is provided, the student's target behavior goals for the day are reviewed, a daily reward is determined from the reward menu and listed on the form, and the mentor provides encouragement to practice the CBI skills throughout the day. A reward menu is developed for each student based on small awards that are available to students that are meant to serve as positive reinforcers, such as 5 minutes of computer time, 5 minutes of drawing time, or a small tangible reward such as a snack or small toy. After the teachers provided feedback through completion of the DPR, at the end of the school day

participants met with their CICO mentors for check-out. The CICO mentor provides praise to the student, the total number of DPR points are tallied, and if the participant met his or her target number of points, the student receives the pre-determined reward. If the student has not met his or her target number of points for the day, the student is encouraged to continue trying and is reminded to use the CBI skills.

Implementation Fidelity

Fidelity of intervention implementation was monitored in several ways. Fidelity checklists included each component of the CBI and CICO procedures and can be found in Appendix C. First, fidelity of the REP CBI lessons was monitored by the secondary CBI instructor (serving in a support role for the CBI lessons with a co-instructor serving as the lead implementer) or the primary CBI instructor whenever a secondary instructor or observer was unavailable. CBI lessons fidelity checks occurred for 28 of the 30 total treatment group CBI lessons. The fidelity assessor recorded whether the small group instructor provided appropriate instructional principles within each lesson, including opportunities for *Tell, Show, Do, and Apply* (Merrill, 2002). Overall, the CBI fidelity checklist results indicated that the CBI lessons were implemented with 97.78% fidelity. The most commonly missed item was reviewing homework, which CBI instructors failed to do on four of the observed occasions.

Fidelity of the modified CICO was monitored through direct observation by the principal investigator with assistance from the school psychology graduate student CBI instructors through weekly checks of completed DPRs and observation of CICO sessions. A total of 70 fidelity checks were completed, including 48 checks of the morning check-in procedures and 22 checks of the afternoon check-out procedures. CICO was

implemented for 27 days for the intervention groups at Site 1 and 22 days at Site 2, with many of the fidelity checks occurring with the same CICO mentor with different students on the same day. CICO observations were conducted for 35% of the implementation days at Site 1 and 25% of the implementation days at Site 2. Regarding results of the fidelity checklists, CICO procedures were completed with an overall average of 88.10% fidelity. The most commonly missed items were specifically reminding students to use their CBI skills during the day and prompting the student to return to their classroom.

Intervention Acceptability

In order to assess acceptability and social validity of REP as tier 2 intervention for use in schools, all teacher implementers, including CICO mentors and teachers providing performance feedback on the DPR, were asked to complete the Usage Rating Profile-Intervention, Revised (URP-IR; Briesch et al., 2013). The URP-IR includes 29 items that teachers rate on a 6-point Likert scale, ranging from 1 = Strongly Disagree to 6 = Strongly Agree. A total of 6 subscales are produced, including acceptability, understanding, feasibility, family-school collaboration, system climate, and system support. The URP-IR has been found to have acceptable reliability and validity as a measure perceptions of intervention acceptability (Briesch et al., 2013).

Procedures

Institutional Review Board approval for study procedures was obtained prior to beginning data collection. In addition, research procedures for the local school districts were followed: at Site 1, the principal investigator provided the superintendent with information regarding the proposed study and was granted permission to seek interest from the building principals in October 2017. At Site 2, a request for research was

submitted through the district's Research Request Committee, which was approved in February 2018. Following receipt of IRB and district-level approval, elementary and middle schools that were interested in participating were recruited and letters of approval from the administrators of the schools interested in participation were documented and submitted to the IRB. Interested schools had to have prior processes in place for conducting universal social, emotional, and behavior (SEB) risk screening across all schools. Potential educator participants interested in participating in the study as CICO mentors were recruited at each school, informed consent was obtained, and educator participants received training for CICO. A total of eight CICO mentors were recruited for the study, all of which were school staff. The CICO mentors were school counselors, specials teachers, or educational support staff that had allocated time available to check in and check-out with students each day. Educator participants serving as CICO mentors were trained by the principal investigator during a 30-minute training in which educators were trained on the CICO procedures, including the daily check-ins and check-outs as well as the completion of the DPR forms. Teachers were also trained on completion of the DPR forms and providing reinforcement and feedback to the student participants throughout the day. The training included opportunities for explicit instruction, modeling, practicing, and receiving feedback on all CICO procedures.

CBI instructors were doctoral students in school psychology, and they received a 2-hour training. CBI training was conducted by the principal investigator, who possessed experience in providing CBI, with support from a university faculty member involved in the project. During the training, the principles of CBI instruction and REP lessons were introduced with opportunities for explicit instruction, modeling, practice, and

performance feedback. School psychology graduate students were also trained in monitoring fidelity of CICO and CBI lessons using fidelity forms in order to monitor fidelity of implementation throughout the intervention.

Following each school's completion of universal screening in fall 2017 or winter 2018, students between 4th and 7th grade who were identified with emotional behavior or internalizing behavior risk on universal SEB screening results were eligible to participate in the study. First, informed consent for teacher participants was sought. Once potential students in the classrooms of teachers who had agreed to participate in the study were identified using the previously stated inclusionary and exclusionary criteria, informed consent was obtained from caregivers interested in their student participating in the study. Parents received initial phone calls from the principal investigator inviting their student to participate in the study, letters from the principal and school counselor along with the consent form, with follow-up phone calls and consent forms provided as needed. Informed consent for those educators participating as CICO mentors was also obtained. For those students who had obtained informed consent, informed assent from each student participant was obtained at school.

Following receipt of informed consent and assent, students at each school were randomized into one of two conditions: (1) REP intervention or (2) waitlist control group. After randomization was complete, pre-intervention measures were collected. The ASEBA School-Age Scales, including the CBCL, TRF, and YSR were completed by the student's primary teacher, caregiver, and the student, respectively. For students in middle school, the TRF was completed by one core academic teacher for each student; for students in elementary school, the TRF was completed by their primary homeroom

teacher. The CBCL was sent home for parents to complete, with the primary investigator's contact information in case of questions regarding the measure and instructions on returning the completed measure in a sealed envelope to the student's classroom teacher or school counselor. The TRF was completed at each school, and brief teacher interviews were conducted to determine specific DPR internalizing behavior goals for each student. The YSR form was completed by students during the school day, with the primary investigator present to answer student questions or concerns. The CASSS, SRCS, and PCOISS measures were also be completed by each student participant at this time.

After completion of the pre-intervention measures, students assigned to the REP intervention began intervention. The REP intervention was to ideally take place over the course of 10 weeks. However, due to time constraints as a result of delayed recruitment of schools, inclement weather days in which schools were not in attendance, and state testing, the REP intervention took place over the course of seven weeks for the intervention groups at each of the four schools. There was a total of six small groups of 3 to 4 students that received the REP CBI lessons once weekly during the school day for 45 to 50 minutes. There were eight CICO mentors across the four schools, with each CICO mentor responsible for two to four students' daily CICO procedures. Classroom teachers responsible for completing the DPR forms and students were not compensated for their participation in the study. CICO mentors were each compensated a one-time payment of \$20.00, and graduate student CBI instructors were compensated \$10.00 hourly.

Following completion of the REP intervention, post-intervention assessment measures were collected for participants in the intervention and waitlist groups, including

the CBCL, TRF, and YSR measures, in addition to the SRCS, CASSS, and PCOISS self-report measures. These measures were collected in the same fashion as the pre-test measures. After completion of post-intervention measures at each school, students assigned to the waitlist control group received the REP intervention including the 5 CBI lessons along with daily CICO across a timespan of 4 to 6 weeks, depending on the amount of time left in the school year at each school. There were eight CICO mentors across the four schools and each CICO mentor met with two to four students on a daily basis for CICO procedures. Three of the four schools had students in the waitlist control group; one school only had enough students for one intervention group and therefore did not have a waitlist control group. Again, students in the waitlist control group participated in small groups of 3-4 for the REP CBI lessons after the post-intervention data collection was completed for all students.

Data Analyses

Primary Research Question

For the primary analysis of research question one, regarding the effects of REP on students' internalizing concerns compared to a waitlist control group, results were analyzed using multivariate analysis of covariance (MANCOVA) in IBM SPSS Statistics Version 25. Multi-level modeling was originally considered to account for clustering within classrooms and schools. However, due to the final sample size, there were several classrooms with only one or two students nested in those classrooms, which would have negatively affected power. Therefore, MANCOVA analyses were used. Two MANCOVA models were conducted, with the youth self-report (YSR) measures and the teacher report form (TRF) measures serving as outcomes, respectively. Effectiveness of

the REP intervention was analyzed by examining main treatment effects relative to post-test scores (while controlling for pre-test scores). The intervention status served as the fixed factor independent variable in both models. The following pre-test YSR and TRF subscale scores were controlled for as covariates in the models: Anxious/Depressed, Withdrawn/Depressed, Somatic Complaints, and Social Problems. In addition, race/ethnicity, grade, and gender were controlled for as covariates. The following post-test YSR and TRF subscale scores were included as dependent variables in the respective models: Anxious/Depressed, Withdrawn/Depressed, Somatic Complaints, and Social Problems. In addition, ANCOVA analyses were conducted with the YSR and TRF Internalizing Problems subscale scores serving as outcomes in order to further examine the overall effectiveness of the REP intervention while controlling for pre-test scores on the Internalizing Problems subscale.

After conducting the MANCOVAs, follow-up univariate analyses were conducted using analysis of covariance (ANCOVA) to determine if any of the individual post-test outcome variables differed between the intervention and waitlist control groups. A Bonferroni adjustment was used to control for inflated type I error due to multiple univariate analyses. The critical p-value of .05 was divided by 8, due to eight covariate variables introduced in the models and therefore eight comparisons that were conducted on each outcome variable. Therefore, an adjusted critical p-value used for follow-up ANCOVA analyses equaled .006. Effect sizes using partial-eta squared were calculated. In accordance with prior research, partial-eta squared statistics were compared to interpretive criteria for judging the magnitude of effects. Statistics were considered small when greater than .01, medium when greater than .06, and large when greater than .14

(Richardson, 2011). Given the current study is an underpowered RCT, it can be useful to consider effect sizes when determining the potential effects of an intervention study, regardless of whether statistical significance is found when conducting analyses.

Secondary Research Question

In addition to the primary outcome measures discussed above, three youth self-report measures, the SRCS, PCOISS, and CASSS rating scales were used as outcomes in MANCOVA analyses to examine post-test differences between the intervention and waitlist control group. These measures included pre-and post-scores for the Child and Adolescent Social Support Scale (CASSS), the Perceived Control of Internalizing States Scale (PCOISS), and the Self-Report Coping Scale (SRCS) pre- and post-test subscale scores. The following CASSS pre-test subscales were included as covariates and post-test subscales were included as outcomes: Teacher Support, Importance of Teacher Support, School Support, and Importance of School Support. The PCOISS pre-test score was included as a covariate, and the PCOISS post-test score was included as an outcome in the model. Finally, the SRCS Seeking Social Support, Self-Reliance/Problem-Solving, Distancing, Internalizing, and Externalizing pre-test scores were included as covariates, and each of the post-test scores were used as outcomes. Again, the impact of group intervention status was analyzed among these post-intervention outcomes with group assignment as the fixed factor independent variable. A Bonferroni correction was also calculated for follow-up univariate analyses using ANCOVA, in which the critical p-value of .05 was divided by 14, due to the 14 comparisons that were conducted on each outcome variable. Therefore, the adjusted critical p-value used for follow-up ANCOVA results equaled .004. Effect sizes were calculated using partial eta-squared (η_p^2) values.

CHAPTER IV: RESULTS

Test of Randomization

In order to determine whether randomization of groups was successful, an independent samples t-test was conducted using each pre-test measure of participant behavior. The pre-test measures, including the relevant YSR and TRF internalizing subscales, CASSS, PCOISS, and SRCS were compared for the intervention and control group, to ensure group equivalence. Group equivalence was assessed using Levene's Test for Equality of Variances and a t-test for Equality of Means. Non-statistically significant findings between the intervention and waitlist control group on the relevant pre-test measures would indicate that group equivalence was achieved following randomized assignment. Non-statistically significant findings would fail to reject the null hypothesis that there is a difference between the groups' scores. The Levene's Test for Equality of Variances failed to reject the null hypothesis, indicating that the intervention and control groups were equivalent across all pre-test measures. The t-test for equality of means indicated that the intervention and control groups were equivalent across all measures with the exception of the School Support pre-test scores which was statistically significant ($p < .05$). This indicates that the means of the School Support subscale of the CASSS were significantly different between the intervention ($M = 51.48, SD = 16.83$) and control group ($M = 39.53, SD = 19.31$) at pre-test, in which participants in the intervention group reported higher levels of perceived school support compared to participants in the control group. The normality of this variable will be further reviewed below. Overall, 19 of the 20 pre-test variables indicated group equivalence and therefore randomization of groups was considered successful.

Data Missingness

Upon examining missingness of data, it was determined that a significant percentage of parent report CBCL measures, including pre- and post-intervention measures, were missing due to parents not completing or returning the measures. Specifically, 17 of 39 (43.6%) participants were missing CBCL pre-test measures, and 25 of 39 (64.1%) were missing CBCL post-test measures. Due to the significant amount of missing parent report data, the parent report measures were excluded from the data analyses.

After removing the parent report variables from the dataset, a missing values analysis was conducted for the remaining variables. One participant in the waitlist control group dropped out of the study after moving to homeschooling prior to completion of post-test measures and therefore that participant's self-report and teacher report post-test measures were missing; this participant was deleted using listwise deletion due to missing all post-test data. Therefore, the final N obtained was 38. Due to missed or skipped items, another participant failed to complete the SRCS post-test, and several items on the CASSS were missing for 5 participants that led to one or more uninterpretable CASSS subscales for those participants. Overall, this led to 2.6% missing YSR and TRF post-test data, 5.1% missing CASSS School Importance pre-test subscale scores, 5.1% missing CASSS Teacher Support post-test subscale scores, and 17.9% missing CASSS Teacher Importance post-test subscale scores. Free and reduced lunch (FRL) status was a measure intended to be collected to control for the impact of socio-economic status on participants' outcomes, although FRL status was withheld for 14 participants at one school district. Therefore, there was 35.9% of missing data for FRL status, and given this

is a categorical variable, FRL status was not imputed and was not used as a covariate in the analyses.

Little's Missing Completely at Random (MCAR) test was conducted using IBM SPSS 25 to examine the pattern of missing data across all participants. All demographic variables, youth self-report, and teacher report measures were included in the missing values analysis, which concluded that the missing values reported above were likely to be missing completely at random, $\chi^2(368) = 31.32, p > .05$. Listwise deletion of cases with missing variables was considered, although rejected due to the already small sample size; listwise deletion would have reduced the sample size to 29, which would have lowered the power and normality of variables between groups would have been greatly skewed due to the uneven number of participants with complete data across the groups. Given the data were considered missing completely at random, imputation of missing data was conducted. Although a multiple imputation approach would have been ideal and is the preferred method for imputation of missing data (Royston, 2004), it was not possible to pool the MANCOVA findings across multiple imputations using available statistical software. Therefore, a single imputation approach, expectation maximization (EM), was instead used for the current study.

EM uses the expectation-maximization algorithm through an iterative approach to determine maximum-likelihood estimates for parameters of missing data (Gupta & Chen, 2011). EM replaces each of the missing values with one value, after multiple convergences. Although EM is not considered the ideal imputation technique, the overall percentage of missing data in the dataset was relatively small (2.68%) and therefore EM was conducted in order to create a dataset with EM values that allow for a complete

dataset in the multiple regression analyses. All of the demographic, youth self-report, and teacher report variables, a total of 61 variables, were included in the EM algorithm to create a complete dataset. A total of 200 convergences were required to obtain the EM dataset used for the current study's analyses.

Assumption Testing

The appropriateness of the data for the analysis plan was reviewed by testing the assumptions of the data for MANCOVA. This included a review of homogeneity of variance, independence of observations, overall normality of data, and linearity. First, an assumption of continuous variables used as dependent variables was met. Homogeneity of variance (HOV) was already tested and met through an independent samples t-test in which the intervention and waitlist control group pre-test scores were determined to have equal variances. Although students were nested within schools and grade levels at each school which violates independence of observations, the sample size was not high enough to account for nesting using a hierarchical linear modeling approach. However, given randomization was previously determined successful, it can be determined that independence of observations was reasonably met for the current analyses.

Normality of data was assessed using measures of skewness, kurtosis, and visual inspection of data. There were nine variables that violated normality with skewness or kurtosis (± 1). Those variables that violated normality were transformed using logarithmic, square root, and reciprocal transformations; the transformation with the most improved normality was retained for analyses. The logarithmic transformation for the SRCS Seeking Social Support pre-test variable met normality for skewness and kurtosis and therefore was retained. Reciprocal ($1/x$) transformations for the TRF

Anxious/Depressed, TRF Somatic Complaints, TRF Social Problems, and CASSS Teacher Importance post-test scores met normality assumptions and were retained. Square root transformations for TRF Internalizing Problems post-test and CASSS School Support pre-test scores met normality assumptions and were retained. Two remaining variables continued to violate assumptions of normality and were not improved by transformation. Upon visual inspection of these two variables, no clear outliers were detected. YSR Social Problems pre-test (skewness = .75, kurtosis = -1.12) and YSR Anxious/Depressed post-test (skewness = .33, kurtosis = -1.05) violate normality for kurtosis and therefore the findings for these variables should be interpreted with caution.

Analyses

Primary Analyses

Table 2 presents the mean pre- and post-test *T* score values for students in the intervention and control groups, according to student self-report on the YSR internalizing subscales. In addition, Table 2 includes the mean difference between pre- and post-test scores for the intervention and control groups. A positive mean change indicates a decrease in concern from pre-test to post-test and therefore overall improvement, whereas a negative mean change indicates an increase in concern from pre-test to post-test.

Table 2

Pre- and post-test T scores for ASEBA youth self-report subscales

Variable	<i>Pre M</i>	<i>Pre SD</i>	<i>Post M</i>	<i>Post SD</i>	Δ
Anxious/Depressed					
Intervention	60.90	10.33	60.57	9.21	0.33
Control	65.82	11.71	65.65	11.79	0.17
Withdrawn/Depressed					
Intervention	63.71	12.22	62.52	11.89	1.19
Control	67.24	10.60	71.06	11.07	-3.82
Somatic Complaints					

	Intervention	68.10	14.05	66.24	12.63	1.86
	Control	66.47	11.77	66.82	11.14	-0.35
Social Problems						
	Intervention	66.05	10.40	63.00	11.75	3.05
	Control	66.24	11.64	66.35	9.73	-0.11
Internalizing Problems						
	Intervention	63.19	13.73	63.05	11.81	0.14
	Control	67.65	11.09	68.71	10.49	-1.06

Note. *Pre* = pre-test score; *Post* = post-test score; *M* = mean; *SD* = standard deviation; Δ = difference between pre-test and post-test mean scores.

According to the MANCOVA model for youth self-report subscales as outcomes, the overall group effect for the multivariate test reported as Wilks' lambda was $F(4) = 1.48$ $p = .236$ $\eta_p^2 = .19$. When looking at the test of between-group effects for the youth self-report MANCOVA model, there are not statistically significant differences between groups for the youth self-report outcomes. However, the effect size corresponding to this effect was considered large ($>.14$).

Please see Table 3 for the results of the test of between-subjects effects for youth self-report measures, according to group assignment. The F statistic for the between-group effect of group assignment on each of the primary youth self-report outcomes is reported in Table 3, along with the statistical significance and the effect sizes, represented as partial eta-squared values. There were not statistically significant findings when examining the effect of group intervention status on each of the youth self-report outcomes. Effect sizes fell in the small range for Social Problems ($\eta_p^2 = .05$) and Somatic Complaints ($\eta_p^2 = .03$). A medium effect size was found for the Anxious/Depressed scale ($\eta_p^2 = .06$), and a large effect size was found for the Withdrawn/Depressed scale ($\eta_p^2 = .17$).

Table 3

Analysis of covariance (ANCOVA) test of between-subjects effects results for youth self-report ASEBA scores according to group assignment

Variable	<i>F</i>	<i>p-value</i>	η_p^2
Anxious/Depressed	1.96	.17	.06
Withdrawn/Depressed	6.01	.02	.17
Somatic Complaints	0.99	.33	.03
Social Problems	1.49	.23	.05

Note. YSR = youth self-report; *F* = *f*-statistic; η_p^2 = partial eta-squared value; * = $p < .006$.

Table 4 presents the mean pre- and post-test t-score values for students in the intervention and control groups, according to teacher report on the TRF internalizing subscales. In addition, Table 4 includes the mean difference between pre- and post-test scores for the intervention and control groups according to teacher report. A positive mean change indicates a decrease in concern from pre-test to post-test and therefore overall improvement, whereas a negative mean change indicates an increase in concern from pre-test to post-test.

Table 4

Pre- and post-test t-scores for ASEBA teacher report subscales

Variable	<i>Pre M</i>	<i>Pre SD</i>	<i>Post M</i>	<i>Post SD</i>	Δ
Anxious/Depressed					
Intervention	62.81	8.89	56.90	5.92	5.91
Control	63.29	9.04	61.35	9.96	1.94
Withdrawn/Depressed					
Intervention	59.52	9.10	56.95	8.21	2.57
Control	62.00	7.96	60.94	7.77	1.06
Somatic Complaints					
Intervention	57.90	8.96	55.05	7.39	2.85
Control	57.29	8.21	55.88	8.04	1.41
Social Problems					
Intervention	60.76	8.98	58.14	6.15	2.62
Control	60.18	8.36	60.12	8.75	0.06
Internalizing Problems					
Intervention	62.14	9.75	56.48	8.13	5.66

Control	63.18	9.85	61.41	11.02	1.77
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Note. *Pre* = pre-test score; *Post* = post-test score; *M* = mean; *SD* = standard deviation; Δ = difference between pre-test and post-test mean scores.

A second MANCOVA model was conducted using teacher report subscales as outcomes. Results of the overall group effect of intervention status for the multivariate test according to Wilks' lambda was $F(4) = 1.16, p = .352, \eta_p^2 = .15$. Although the group effect of intervention status was non-statistically significant, the effect size was found to fall in the large range. When looking at the between-groups effects in the MANCOVA model for each of the four teacher report subscales as outcomes, there was not a statistically significant difference between the intervention and waitlist control group on any of the TRF post-test outcomes after controlling for the TRF pre-test scores and demographic variables. Please see Table 5 for the results of the test of between-subjects effects for teacher measures, according to group assignment. A small effect size was found for Somatic Complaints ($\eta_p^2 = .01$). Medium effect sizes were found for the Withdrawn/Depressed ($\eta_p^2 = .07$), Anxious/Depressed ($\eta_p^2 = .10$), and Social Problems subscales ($\eta_p^2 = .12$).

Table 5

Analysis of covariance (ANCOVA) test of between-subjects effects results for teacher report ASEBA scores according to group assignment

Variable	<i>F</i>	<i>p-value</i>	η_p^2
Anxious/Depressed	3.21	.08	.10
Withdrawn/Depressed	2.10	.16	.07
Somatic Complaints	0.20	.66	.01
Social Problems	3.94	.06	.12

Note. TRF = teacher report form; *F* = *f*-statistic; η_p^2 = partial eta-squared value; * = $p < .006$.

Two separate ANCOVA analyses were also conducted in order to examine the effects of the REP intervention on the Internalizing Problems subscale of the youth self-report and teacher report outcomes between groups. The Internalizing Problems post-test subscale scores were not included as outcomes in either MANCOVA model, due to concerns related to multicollinearity given the four subscales comprise the broader Internalizing Problems subscale. Results of the between-group effects in the ANCOVA model for youth self-reported Internalizing Problems subscale scores did not indicate a statistically significant difference between the intervention and control group outcome measures ($F = 1.32, p = .36, \eta_p^2 = .04$). A small effect size was found ($\eta_p^2 = .04$). Results of the between-group effects in the ANCOVA model for teacher reported Internalizing Problems did not indicate a statistically significant difference between the intervention and waitlist control group ($F = 5.07, p = .03, \eta_p^2 = .14$). The effect size for the TRF Internalizing Problems outcome was considered a medium effect size. Please see Table 6 for the results of the test of between-subjects effects for the Internalizing Problems subscale on the TRF and YSR forms, according to group assignment.

Table 6

Analysis of covariance (ANCOVA) test of between-subjects effects results for teacher and youth self-report ASEBA Internalizing Problem subscale scores according to group assignment

Variable	<i>F</i>	<i>p-value</i>	<i>eta_p²</i>
Internalizing Problems			
YSR	1.32	.36	.04
TRF	5.07	.03	.14

Note. TRF = teacher report form; *F* = *f*-statistic; *eta_p²* = partial eta-squared value; * = $p < .006$.

Secondary Analyses

Table 7 presents the mean pre- and post-test scores for the youth self-report proximal outcome measures, including social support as measured by the CASSS, coping skills as measured by the SRCS, and perceived control of internal states as measured by the PCOISS. In addition, Table 7 includes the mean difference between pre- and post-test scores for the intervention and control groups. A positive mean change from pre-test to post-test indicates improvement.

Table 7

Pre- and post-test scores for youth self-report proximal outcome measures

Variable	<i>Pre M</i>	<i>Pre SD</i>	<i>Post M</i>	<i>Post SD</i>	Δ
CASSS Teacher Support					
Intervention	52.91	14.38	50.25	17.37	-2.66
Control	57.29	15.57	52.82	14.31	-4.47
CASSS Teacher Importance					
Intervention	27.48	7.86	30.46	4.41	2.98
Control	29.41	5.93	27.20	5.48	-2.21
CASSS School Support					
Intervention	51.48	16.83	52.67	19.17	1.19
Control	39.53	19.31	42.76	15.45	3.23
CASSS School Importance					
Intervention	27.67	6.76	31.23	5.72	3.56
Control	23.34	7.52	27.12	6.74	3.78
Perceived Control of Internal States					
Intervention	49.95	9.57	55.29	8.72	5.34
Control	49.53	12.10	50.06	14.45	0.53
SRCS Seeking Social Support					
Intervention	23.19	8.39	22.62	9.66	-0.57
Control	20.65	7.47	19.68	8.21	-0.97
SRCS Self-Reliance/Problem-Solving					
Intervention	21.95	5.09	22.81	8.58	0.86
Control	21.41	5.16	22.61	6.98	1.20
SRCS Distancing					

Intervention	15.57	4.18	15.76	5.24	-0.19
Control	13.59	5.40	16.68	4.70	-3.09
SRCS Internalizing					
Intervention	19.90	5.43	17.90	5.97	2.00
Control	21.53	6.27	19.48	7.43	2.05
SRCS Externalizing					
Intervention	8.52	3.56	9.05	3.26	-0.53
Control	8.59	3.32	9.34	3.95	-0.75

Note. *Pre* = pre-test score; *Post* = post-test score; *M* = mean; *SD* = standard deviation; Δ = difference between pre-test and post-test mean scores.

A final MANCOVA model was conducted to analyze the effects of the intervention on the proximal outcomes, including teacher and school social support, coping skills, and perceived control of internal states. Results of the overall group effect of intervention status for the multivariate test according to Wilks' lambda was $F(10) = .86, p = .59, \eta_p^2 = .38$. When examining the between-groups effects for each of the ten youth self-report social support, coping, and perceived control of internal states outcomes, there were not statistically significant differences between the intervention and waitlist control group after controlling for the pre-test scores and demographic variables. Small effect sizes were found for Teacher Support ($\eta_p^2 = .02$) and School Support ($\eta_p^2 = .04$) on the CASSS, Perceived Control of Internal States ($\eta_p^2 = .02$), and the Distancing subscale on the SRCS ($\eta_p^2 = .05$). Medium effect sizes were found for Importance of School Support on the CASSS ($\eta_p^2 = .08$). Large effect sizes were found for Importance of Teacher Support on the CASSS ($\eta_p^2 = .19$). Please see Table 8 for the results of the test of between-subjects effects for secondary youth self-report outcomes, according to receipt of intervention status. The *F* statistic for the between-group effect of group assignment on each of the proximal youth outcomes is reported in Table 8 along with the statistical significance and the effect sizes, represented as partial eta-squared values.

Table 8

Analysis of covariance (ANCOVA) test of between-subjects effects results for secondary youth self-report outcomes according to group assignment

Variable	<i>F</i>	<i>p-value</i>	<i>eta_p²</i>
Child and Adolescent Social Support Scale			
Teacher Support	0.35	.56	.02
Importance of Teacher Support	5.48	.03	.19
School Support	0.86	.36	.04
Importance of School Support	2.02	.17	.08
Perceived Control of Internal States	.40	.53	.02
Self-Report Coping Scale			
Seeking Social Support	0.001	.99	.001
Self-Reliance/Problem-Solving	0.04	.84	.002
Distancing	1.12	.30	.05
Internalizing	0.005	.94	.001
Externalizing	0.002	.96	.001

Note. *F* = *f*-statistic; *eta_p²* = partial eta-squared value; * = *p* < .004.

Acceptability of REP

The acceptability of REP was measured using the Usage Rating Profile-Intervention, Revised (URP-IR; Briesch et al., 2013). At the end of the spring 2018 semester, a Qualtrics link was sent to school staff who provided informed consent and participated in the current study, inviting CICO mentors as well as classroom teachers that completed daily DPR feedback forms to complete the URP-IR measure. A total of 13 educator participants completed the URP-IR. Again, there are 6 subscales: acceptability, understanding, feasibility, family-school collaboration, system climate, and system support. The possible range of each scale’s scores along with the mean score across all 13 participants will be reported. For the acceptability, understanding, feasibility, and system climate subscales, a higher score is more favorable. For the home-school collaboration and the system support subscales, a higher score indicates greater amount of support is required. For the acceptability subscale (examples of items include “This intervention is a

good way to handle the child's behavior problem"), the possible range of scores is from 9 to 54; the mean score was 43.46. For the understanding subscale (an example item is "I understand how to use this intervention"), the possible range of scores is from 3 to 18; the mean score was 14.39. For the home-school collaboration score (an example item is "a positive home-school relationship is needed to implement this intervention"), the possible range of scores is from 3 to 18; the mean score was 12.92. For the feasibility subscale (an example item is "I would be able to allocate my time to implement this intervention"), the possible range of scores is from 6 to 36; the mean score was 28. For the systems climate subscale (an example item is "My administrator would be supportive of my use of this intervention"), the possible range of scores is from 5 to 30; the mean score was 24.85. For the system support subscale (an example item is "I would need consultative support to implement this intervention"), the possible range of scores is from 3 to 18; the mean score was 11.85.

CHAPTER V: DISCUSSION

The current study aimed to address a prominent gap in the literature regarding feasible tier 2 interventions in the school setting to prevent internalizing disorders such as anxiety and depression in children and adolescents. The current study evaluated one such tier 2 intervention, the Resilience Education Program, developed for the school setting that includes both skill-based cognitive-behavioral instruction (CBI) and reinforcement of the skill-based approach through the use of a modified Check-In/Check-Out (CICO) mentorship program. The current study's primary purpose was to evaluate the effectiveness of REP on reducing internalizing concerns for youth as reported by teacher, parent, and youth self-report measures. The secondary purpose of the current study was to evaluate the impact of REP on students' perceived social supports, coping skills, and control of internal states.

Primary Findings

The primary research question for the current study was as follows:

What is the effect of the REP intervention on students' internalizing concerns as reported by student self-report, parent report, and teacher report, compared to a waitlist control group?

Based on the prior single-case design preliminary findings for REP, it was hypothesized that the REP intervention would decrease internalizing concerns, as reported by youth, parents, and classroom teachers. Internalizing concerns were measured at pre-test and post-test using the relevant internalizing scales from the Achenbach ASEBA School-Age scales, including the Youth Self-Report form, Child Behavior Concern Checklist parent-report form, and the Teacher Report Forms. Relevant internalizing subscales included in

the analyses were the Anxious/Depressed, Withdrawn/Depressed, Somatic Complaints, Social Problems, and Internalizing Problems subscales (Achenbach & Rescorla, 2001). Although parent report measures were intended to be included in the analyses, due to limited parent report measures collected, only teacher and youth self-report measures were included in the final analyses.

Findings from the primary MANCOVA models indicated that there were not statistically significant differences in youth self-reported or teacher reported internalizing concerns between the intervention group and the waitlist control group. Although the findings were overall not statistically significant, the difference in mean pre- and post-test scores on each internalizing subscale of the YSR and TRF were also calculated and presented above in Tables 2 and 3. For youth self-reported internalizing concerns, it can be seen that the intervention group saw a greater decrease in internalizing concerns for the anxious/depressed, withdrawn/depressed, somatic complaints, social problems, and overall internalizing problems subscales. In addition, according to teacher report, the intervention group saw a greater decrease in anxious/depressed, withdrawn/depressed, somatic complaints, social problems, and overall internalizing problems subscales, when compared to the mean changes of the waitlist control group. Although these mean differences were not large enough to be statistically significant, this was likely impacted by the small sample size and thus lack of statistical power to detect statistical differences between the intervention and waitlist control groups. Overall, youth self-report and teacher report t-test scores demonstrate a greater decrease in internalizing concerns for the intervention group compared to the waitlist control group, according to mean differences between pre- and post-test.

Despite this lack of statistical significance, further examination of findings indicated the group main effects were associated with large effect sizes ($\eta_p^2 > .14$), reflecting the pre-post differences in most subscale scores. For the teacher report test, the partial-eta squared effect size indicated that intervention status explains 15% of the difference between intervention and waitlist control groups for teacher report scores, after controlling for participant demographic characteristics and pre-test internalizing concerns. In addition, the partial eta-squared value for the between-group difference for youth self-report scores suggested that group assignment explained 18% of the difference between intervention and waitlist-control group youth self-report scores, when controlling for youth self-report pre-test scores and demographic characteristics of the participants. These effect sizes explain a large proportion of variance between the intervention and waitlist control group explained by group assignment for youth self-report and teacher report post-test scores, overall.

Secondary Findings

The secondary research question for the current study was as follows:

What is the effect of the REP intervention on students' self-reported coping skills, sense of perceived control, and social support?

Based upon its theory of change, it was hypothesized that REP would increase students' perceptions of positive coping skills, self-control, and social support in the school setting for students in the intervention group as compared to the waitlist control group. There were not statistically significant differences between the intervention and waitlist control group on the social support, coping skills or perceived control of internal states pre- and post-test self-report scores.

The mean differences between pre- and post-test scores on each of the subscales, as presented in Table 7, were not statistically significant and many of the mean differences for the secondary outcomes were minimal. However, one interesting finding is that participants in the intervention group self-reported a greater increase in perceived control of internal emotional states according to mean difference comparisons between the intervention and waitlist control groups. Furthermore, Cohen's d was equal to .43 for this comparison, suggesting the presence of a small effect when comparing the mean difference on perceived control of internal emotional states post-test scores for the intervention and waitlist control groups. There was a 5.34-point increase in PCOISS mean scores for the intervention group, whereas there was only a 0.53-point increase in PCOISS mean scores for the waitlist control group. This difference suggests that REP may have increased participants' perceptions of control over their internal emotional states. Importantly, individuals with higher levels of perceived control have previously been found to have fewer psychological symptoms (Pallant, 2000).

The effect size of the overall group effect of intervention status for these secondary outcomes was equal to a partial eta squared value of .38, which is a large effect size. This effect size is considerable and indicates that 38% of the variance between the intervention and waitlist control group secondary outcomes as measured by coping skills, social support, and perceived control of internal state outcome scores was due to group assignment, after controlling for pre-test scores and demographic characteristics.

Acceptability of REP

The acceptability of REP as a tier 2 internalizing intervention to address internalizing risk in students in the school setting was measured using the URP-IR.

According to the results, mean scores for acceptability, understanding, and feasibility subscales all fell between the Slightly Agree and Agree anchors. This indicates that educators who participated as CICO mentors or classroom teachers in this intervention found REP to be an intervention that was easy to understand, use, and address the nature of the concerns for these students. The positive findings regarding acceptability and understanding of the REP intervention align with past research on the importance of feasible interventions that can be implemented with integrity in the school setting (Proctor et al., 2010; Gresham et al., 2013). In addition, the systems climate results indicate that teachers felt that this intervention would be supported by administration and fit in with existing interventions in the school setting. Teachers also did report that home-school collaboration would be important in implementing this intervention and that support and professional development would be required for educators to implement this intervention. The training provided to teachers in the current study was brief; given the agreeable ratings for understanding how to implement the intervention, it appears that a brief teacher training for implementing the CICO mentor role and completing daily DPR ratings as classroom teachers would be feasible and within the scope of a tier 2 intervention for the school setting.

Limitations and Future Directions

There were several limitations to the current study that are important to note. First, the small sample size was a limitation. Although the current study was designed to be an underpowered waitlist RCT with a power of .70 instead of the traditional .80, the target sample size was 63 participants. However, due to recruitment and time restraints of the intervention implementation, the final sample size was 38 participants. Due to the

small sample size, the analysis plan of conducting multivariate regression analyses was impacted by the relatively small intervention and waitlist control group sample sizes, which may have impacted findings of statistical significance. A larger sample size would have been beneficial in order to increase power and therefore better align with MANCOVA analyses comparing between-group differences of the outcomes.

Due to the low number of parent report measures returned by parents or caregivers of participants, the parent informant ratings of internalizing concerns could not be analyzed, which is a limitation to examining outcomes among a multi-informant approach for addressing youth internalizing concerns. Related to the missingness of parent report data, there was a small percentage of missing data due to missed items during data collection for youth self-report measures. Although the missing data were handled using EM, EM is not the preferred imputation approach for addressing missing data and therefore is a limitation regarding statistical analyses (Royston, 2004).

Another limitation of the current study was the lack of longitudinal research design. Although participants' internalizing concerns and relevant outcomes were measured at pre- and post-test points, the long-term impact of REP as a tier 2 intervention could not be measured with the current study design due to time constraints and resources available. Future research should measure the longitudinal impact for decreasing internalizing risk and increasing positive coping skills generalizable to the school setting, in order to provide empirical support for the long-term investment of tier 2 interventions for concerns such as anxiety and depression within the school setting.

Future research should be conducted on REP with larger sample sizes in order to increase statistical power related to examining the impact of REP on internalizing

outcomes. Future research should also include a larger sample that is representative of diverse populations within the United States in order to assess the impact of REP for youth from diverse racial/ethnic and cultural backgrounds.

In addition, future research should conduct a component analysis to examine the effectiveness of the different components of REP on reducing internalizing risk and increasing student coping skills. As recent research has begun to address performance deficits as well as acquisition deficits in skills related to the prevention of internalizing concerns (Dart et al., 2015; Hunter et al., 2014; Cook et al., 2015), it is important to identify the components of the intervention that effect the most change on measured outcomes. For example, a future study could examine the effect of CICO only, CBI lessons only, and combined CBI lessons plus CICO on internalizing outcomes, in order to provide further empirical support for the combination of REP CBI lessons in addition to CICO for generalization of coping skills to address internalizing concerns in students with internalizing risk.

Another area of research that was not addressed by the current study is the role of parents and caregivers in supporting youth participating in internalizing interventions. As previously mentioned, the social-ecological theory of internalizing disorders proposes that interactions with individuals such as family members may play a role in internalizing problems (Herman et al., 2004; Kilgus et al., 2015). Although the current study attempted to measure parent-reported outcomes as an important informant across a multi-informant approach, parent report outcomes were not able to be included in the final research analyses. Therefore, future research should assess parent perceptions of change relevant to internalizing concern while also considering the role of home-school collaboration in a

tier 2 intervention such as REP. Home-school collaboration was rated by teachers as possibly playing a role in implementation of the REP intervention; this study did not examine the role in home-school communication regarding CBI skills learned or daily CICO progress of students. The possibility of including components such as regular home-school communication regarding CBI skills and DPR forms completed daily by teachers may be an important component to evaluate within the context of social-ecological theory.

Finally, the current study originally planned to assess coping skills, social support, and perceived control of internal states as possible partial mediators. Unfortunately, due to the final small sample size, the examination of more complex mediational models was not possible. A future direction for research is thus assessing possible moderators and mediators that may interact with the REP effects.

Practical Implications

The current study holds several practical implications. First, past research that examined similar tier 2 interventions found promising results using single-case design (Hunter et al., 2014; Dart et al., 2015; Collins et al., 2016; Cook et al., 2015; Fiat et al., 2017; Allen et al., in press). The current study attempted to expand upon that research and was the first of its kind to use a waitlist randomized controlled trial research design to evaluate the effectiveness of the intervention. REP includes both skill-based instruction (CBI lessons) and contingency management (CICO) intended to enhance the acquisition and generalization of skills across settings. Although statistically significant differences were not found, several large mean differences and notable effect sizes were noted, demonstrating potential for REP to decrease internalizing risk. Such findings align with

past research on tier 2 internalizing interventions that address performance and skill-based deficits (Cook et al., 2015; Fiat et al., 2017; Allen et al., in press). In addition, the current study measured both teacher and youth self-report outcomes and found that group assignment explained a large proportion of variance between the intervention and waitlist control group, which demonstrates the possible impact of the intervention on both teacher and youth self-reported outcomes. Through further evaluation of the effectiveness of REP on decreasing internalizing concerns and increasing positive student coping skills and sense of social support in the school setting, larger scale studies may provide further support for REP as a feasible school-based tier 2 internalizing intervention.

Furthermore, the implementation of a tier 2 internalizing intervention for late elementary and middle school students demonstrated positive social validity for educators who participated in the study. The barriers of existing interventions to address internalizing concerns within the school setting include lack of time, resources, and training for staff to implement the intervention. REP is a time-limited intervention with five weekly 30-45-minute CBI lessons that can be implemented by a trained school mental health provider such as a school psychologist, school counselor, or school social worker and daily CICO which can be implemented by school staff. The inclusion of those five CBI lessons for students to learn positive coping skills including calming, cognitive restructuring, and problem-solving through a direct instruction approach is a unique factor of REP. In comparison, other recently developed tier 2 internalizing interventions provide limited CBI and may not adequately address students' skill-based deficits in coping and problem-solving skills (Cook et al., 2015; Fiat et al., 2017). With the inclusion of weekly school-based CBI lessons in a small group format, REP was still

perceived as a socially valid tier 2 intervention according to teacher ratings of acceptability, feasibility, and understanding on the URP-IR, which demonstrates promise as a potential intervention that can be implemented in the school setting. The high feasibility ratings of the intervention within the school setting according to educators may set REP apart as a skill-based and performance-based tier 2 intervention to adequately teach and reinforce coping skills for internalizing concerns.

Conclusion

Based on the high prevalence of internalizing disorders with onset in childhood and adolescence (Merikangas et al., 2010), research has focused on early intervention to prevent internalizing disorders in youth. Although there are existing empirically-supported interventions for the clinical setting to address internalizing concerns (Stark et al., 2005; Kendall & Hedtke, 2006), such interventions are often not accessible to youth due to a variety of barriers such as socio-economic status and stigmatized cultural views toward clinical settings (Herman et al., 2004; Herman et al., 2009; Fazel et al., 2014). The school is a logical setting to address internalizing concerns, although existing clinical interventions that have been adapted for the school setting are not feasible to implement in the school setting due to the cost, time, and resources involved in implementing the interventions (Barrett & Pahl, 2005; Barrett & Turner, 2001; Dadds et al., 1997; Clarke et al., 1995). In addition, such interventions too often focus on the individual child or adolescent's concerns without consideration for the youth's interaction with their environment and the importance of generalization of skills to other settings, including the classroom, home, and community (Herman et al., 2009). Therefore, recent research has begun to address this empirical gap by considering the effects of social-ecological

interventions on internalizing concerns. REP is one such intervention that takes a unique approach in combining five weekly cognitive-behavioral instruction lessons with reinforcement-based mentorship through daily Check-Ins/Check-Outs with a school mentor for students with identified internalizing risk.

The current study evaluated the impact of REP on decreasing internalizing concerns for youth in late elementary and middle school. Important findings indicated that REP was perceived as a socially valid intervention for the school setting. Although statistical significance was not found overall, students in the intervention group demonstrated a decrease in internalizing concerns compared to students in the waitlist control group according to mean differences of pre- and post-tests. Furthermore, large effect sizes were found for primary outcomes of youth self-report and teacher report outcomes, in addition to proximal youth outcomes, which indicates that group assignment explained a large proportion of variance between the intervention and waitlist control group scores. Further research on a larger scale should continue to evaluate the effectiveness of tier 2 internalizing interventions such as REP in order to address the need for effective and feasible school-based interventions for internalizing concerns.

References

- Achenbach, T. M., & Edelbrock, C. S. (1983). Manual for the child behavior checklist and child behavior profile. *Burlington, VT: University of Vermont.*
- Achenbach, T. M., & Rescorla, L. (2001). ASEBA school-age forms & profiles.
- Allen, A. N., Kilgus, S. P., & Eklund, K. (in press). An initial investigation of the effectiveness of the Resilience Education Program. *School Mental Health*, 1-16. doi:10.1007/s12310-018-9276-1
- American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders: DSM-5. Washington, D.C: American Psychiatric Association.
- Barrett, P. M., & Pahl, K. M. (2006). School-based intervention: Examining a universal approach to anxiety management. *Journal of Psychologists and Counsellors in Schools*, 16, 55-75.
- Barrett, P., & Turner, C. (2001). Prevention of anxiety symptoms in primary school children: Preliminary results from a universal school-based trial. *British Journal of Clinical Psychology*, 40, 399-410. doi:10.1348/014466501163887
- Barrett, P. M., Webster, H., & Turner, C. (2000). *FRIENDS prevention of anxiety and depression for children group leader's manual*. Bowen Hills, Australia: Australian Academic Press.
- Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York, NY: The Guilford Press.
- Bornstein, M. H., Hahn, C. S., & Haynes, O. M. (2010). Social competence,

- externalizing, and internalizing behavioral adjustment from early childhood through early adolescence: Developmental cascades. *Development and Psychopathology*, 22, 717-735. doi:10.1017/S0954579410000416
- Bourdon, K. H., Goodman, R., Rae, D. S., Simpson, G., & Koretz, D. S. (2005). The Strengths and Difficulties Questionnaire: US normative data and psychometric properties. *Journal of the American Academy of Child and Adolescent Psychiatry*, 44, 557-564. doi:10.1097/01.chi.0000159157.57075.c8
- Briesch, A. M., Chafouleas, S. M., Neugebauer, S. R., & Riley-Tillman, T. C. (2013). Assessing influences on intervention implementation: Revision of the Usage Rating Profile-Intervention. *Journal of School Psychology*, 51, 81-96. doi:10.1016/j.jsp.2012.08.006
- Bruhn, A. L., Lane, K. L., & Hirsch, S. E. (2014). A review of tier 2 interventions conducted within multitiered models of behavioral prevention. *Journal of Emotional and Behavioral Disorders*, 22, 171-189. doi:10.1177/1063426613476092
- Campbell, A., & Anderson, C. M. (2011). Check-In/Check-Out: A systematic evaluation and component analysis. *Journal of Applied Behavior Analysis*, 44, 315-326. doi:10.1901/jaba.2011.44-315
- Causey, D. L., & Dubow, E. F. (1992). Development of a self-report coping measure for elementary school children. *Journal of Clinical Child and Adolescent Psychology*, 21, 47-59. doi:10.1207/s15374424jccp2101_8
- Chan, C. S., Rhodes, J. E., Howard, W. J., Lowe, S. R., Schwartz, S. E., & Herrera, C.

- (2013). Pathways of influence in school-based mentoring: The mediating role of parent and teacher relationships. *Journal of School Psychology, 51*, 129-142.
doi:10.1016/j.jsp.2012.10.001
- Christ, T. J., Riley-Tillman, T. C., & Chafouleas, S. M. (2009). Foundation for the development and use of direct behavior rating (DBR) to assess and evaluate student behavior. *Assessment for Effective Intervention, 34*, 201-213.
doi:10.1177/1534508409340390
- Clark, D. A., & Beck, A. T. (1999). *Scientific foundations of cognitive theory and therapy of depression*. New York, NY: John Wiley & Sons, Inc.
- Cheney, D. A., Stage, S. A., Hawken, L. S., Lynass, L., Mielenz, C., & Waugh, M. (2009). A 2-year outcome study of the Check, Connect, and Expect intervention for students at risk for severe behavior problems. *Journal of Emotional and Behavioral Disorders, 17*, 226-243. doi:10.1177/1063426609339186
- Chorpita, B. F., Daleiden, E. L., & Weisz, J. R. (2005). Modularity in the design and application of therapeutic interventions. *Applied and Preventive Psychology, 11*, 141-156. doi:10.1016/j.appsy.2005.05.002
- Chorpita, B. F., Taylor, A. A., Francis, S. E., Moffitt, C., & Austin, A. A. (2004). Efficacy of modular cognitive behavior therapy for childhood anxiety disorders. *Behavior Therapy, 35*, 263-287. doi:10.1016/S0005-7894(04)80039-X
- Clarke, G. N., Hawkins, W., Murphy, M., Sheeber, L. B., Lewinsohn, P. M., & Seeley, J. R. (1995). Targeted prevention of unipolar depressive disorder in an at-risk sample of high school adolescents: A randomized trial of a group cognitive

- intervention. *Journal of the American Academy of Child & Adolescent Psychiatry*, 34, 312-321. doi:10.1097/00004583-199503000-00016
- Collins, T. A., Gresham, F. M., & Dart, E. H. (2016). The effects of peer-mediated Check-In/Check-Out on the social skills of socially neglected students. *Behavior Modification*, 40, 568-588. doi:10.1177/0145445516643066
- Colvin, G., Sugai, G., Good, R. H., & Lee, Y. Y. (1997). Using active supervision and precorrection to improve transition behaviors in an elementary school. *School Psychology Quarterly*, 12, 344-363. doi:10.1037/h0088967
- Compas, B. E. (1987). Coping with stress during childhood and adolescence. *Psychological Bulletin*, 101, 393-403. doi:10.1037/0033-2909.101.3.393
- Compas, B. E., Banez, G. A., Malcarne, V., & Worsham, N. (1991). Perceived control and coping with stress: A developmental perspective. *Journal of Social Issues*, 47, 23-34. doi:10.1111/j.1540-4560.1991.tb01832.x
- Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: problems, progress, and potential in theory and research. *Psychological Bulletin*, 127, 87-127. doi:10.1037/0033-2909.127.1.87
- Compas, B. E., Slavin, L. A., Wagner, B. M., & Vannatta, K. (1986). Relationship of life events and social support with psychological dysfunction among adolescents. *Journal of Youth and Adolescence*, 15, 205-221. doi:10.1007/BF02139123
- Compton, S. N., Burns, B. J., Egger, H. L., & Robertson, E. (2002). Review of the

- evidence base for treatment of childhood psychopathology: Internalizing disorders. *Journal of Consulting and Clinical Psychology*, 70, 1240-1266.
doi:10.1037/0022-006X.70.6.1240
- Cook, C. R., Volpe, R. J., & Livanis, A. (2010). Constructing a roadmap for future universal screening research beyond academics. *Assessment for Effective Intervention*, 35, 197-205. doi:10.1177/1534508410379842
- Cook, C. R., Rasetshwane, K. B., Truelson, E., Grant, S., Dart, E. H., Collins, T. A., & Sprague, J. (2011). Development and validation of the Student Internalizing Behavior Screener: Examination of reliability, validity, and classification accuracy. *Assessment for Effective Intervention*, 36, 71-79.
doi:10.1177/1534508410390486
- Cook, C. R., Xie, S. R., Earl, R. K., Lyon, A. R., Dart, E., & Zhang, Y. (2015). Evaluation of the Courage and Confidence Mentor Program as a tier 2 intervention for middle school students with identified internalizing problems. *School Mental Health*, 7, 132-146.
- Crone, D. A., Hawken, L. S., & Horner, R. H. (2010). *Responding to problem behavior in schools: The behavior education program*. Guilford Press.
- Dadds, M. R., Spence, S. H., Holland, D. E., Barrett, P. M., & Laurens, K. R. (1997). Prevention and early intervention for anxiety disorders: A controlled trial. *Journal of Consulting and Clinical Psychology*, 65, 627-635. doi:10.1037/0022-006X.65.4.627
- Dart, E. H., Furlow, C. M., Collins, T. A., Brewer, E., Gresham, F. M., & Chenier, K. H.

- (2015). Peer-mediated check-in/check-out for students at-risk for internalizing disorders. *School Psychology Quarterly*, *30*, 229-243. doi:10.1037/spq0000092
- David-Ferdon, C., & Kaslow, N. J. (2008). Evidence-based psychosocial treatments for child and adolescent depression. *Journal of Clinical Child & Adolescent Psychology*, *37*, 62-104. doi:10.1080/15374410701817865
- Demaray, M. K., & Malecki, C. K. (2002). The relationship between perceived social support and maladjustment for students at risk. *Psychology in the Schools*, *39*, 305–316. doi:10.1002/pits.10018
- Drummond, T. (1994). *The Student Risk Screening Scale (SRSS)*. Grants Pass: Oregon Social Learning Center.
- Dumont, M., & Provost, M. A. (1999). Resilience in adolescents: Protective role of social support, coping strategies, self-esteem, and social activities on experience of stress and depression. *Journal of Youth and Adolescence*, *28*, 343-363.
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, *82*, 405-432. doi:10.1111/j.1467-8624.2010.01564.x
- Eklund, K., Kilgus, S., von der Embse, N., Beardmore, M., & Tanner, N. (2017). Use of universal screening scores to predict distal academic and behavioral outcomes: A multilevel approach. *Psychological Assessment*, *29*, 486-499. doi:10.1037/pas0000355
- Elliott, S. N., & Gresham, F. M. (1991). *Social skills intervention guide*. Circle Pines, MN: AGS Publishing.

- Evelo, D., Sinclair, M., Hurley, C., Christenson, S., & Thurlow, M. (1996). *Keeping kids in school: Using Check & Connect for dropout prevention*. Minneapolis: University of Minnesota, Institute on Community Integration.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*, 1149-1160. doi:10.3758/BRM.41.4.1149
- Fazel, M., Hoagwood, K., Stephan, S., & Ford, T. (2014). Mental health interventions in schools in high-income countries. *Lancet Psychiatry, 1*, 377-387. doi:10.1016/S2215-0366(14)70312-8.
- Fiat, A. E., Cook, C. R., Zhang, Y., Renshaw, T. L., DeCano, P., & Merrick, J. S. (2017). Mentoring to promote courage and confidence among elementary school students with internalizing problems: A single-case design pilot study. *Journal of Applied School Psychology, 33*, 261-287. doi:10.1080/15377903.2017.1292975
- Frey, K. S., Hirschstein, M. K., & Guzzo, B. A. (2000). Second Step: Preventing aggression by promoting social competence. *Journal of Emotional and Behavioral Disorders, 8*, 102-112. doi:10.1177/106342660000800206
- Friman, P. C., Hayes, S. C., & Wilson, K. G. (1998). Why behavior analysts should study emotion: The example of anxiety. *Journal of Applied Behavior Analysis, 31*, 137-156. doi:10.1901/jaba.1998.31-137
- Gillham, J. E., Jaycox, L. H., Reivich, K. J., Seligman, M. E. P., & Silver, T. (1990). *The Penn Resiliency Program, Unpublished manual*. University of Pennsylvania, Philadelphia.
- Gillham, J. E., Reivich, K. J., Freres, D. R., Lascher, M., Litzinger, S., Shatté, A., &

- Seligman, M. E. (2006). School-based prevention of depression and anxiety symptoms in early adolescence: A pilot of a parent intervention component. *School Psychology Quarterly, 21*, 323-348.
doi:10.1521/scpq.2006.21.3.323
- Gladstone, T. R., & Beardslee, W. R. (2009). The prevention of depression in children and adolescents: A review. *The Canadian Journal of Psychiatry, 54*, 212-221.
doi:10.1177/070674370905400402
- Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry, 38*, 581-586. doi:10.1111/j.1469-7610.1997.tb01545.x
- Goodman, R. (2001). Psychometric properties of the Strengths and Difficulties Questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*, 1337-1345. doi:10.1097/00004583-200111000-00015
- Gresham, F. M., Cook, C. R., Crews, S. D., & Kern, L. (2004). Social skills training for children and youth with emotional and behavioral disorders: Validity considerations and future directions. *Behavioral Disorders, 30*, 32-46.
- Gresham, F., & Elliott, S. N. (2008). *Social skills improvement system (SSIS) rating scales*. Bloomington, MN: Pearson.
- Gresham, F. M., & Elliott, S. N. (1993). Social skills intervention guide: Systematic approaches to social skills training. *Special Services in the Schools, 8*, 137-158.
- Gresham, F. M., Elliott, S. N., & Kettler, R. J. (2010). Base rates of social skills

acquisition/performance deficits, strengths, and problem behaviors: An analysis of the Social Skills Improvement System-Rating Scales. *Psychological Assessment*, 22, 809-815. doi:10.1037/a0020255

Gresham, F. M., Hunter, K. K., Corwin, E. P., & Fischer, A. J. (2013). Screening, assessment, treatment, and outcome evaluation of behavioral difficulties in an RTI model. *Exceptionality*, 21, 19-33.

Gresham, F. M., & Kern, L. (2004). Internalizing Behavior Problems in Children and Adolescents. In R. B. Rutherford, M. M. Quinn, & S. R. Mathur (Eds.), *Handbook of research in emotional and behavioral disorders* (pp. 262-281). New York: Guilford Press.

Gresham, F. M., Van, M. B., & Cook, C. R. (2006). Social skills training for teaching replacement behaviors: Remediating acquisition deficits in at-risk students. *Behavioral Disorders*, 31, 363-377.

Gupta, M. R., & Chen, Y. (2011). Theory and use of the EM algorithm. *Foundations and Trends in Signal Processing*, 4, 223-296.

Hammen, C. L., Rudolph, K. D., & Abaied, J. L. (2014). Child and adolescent depression. In R. Barkley & E. J. Mash (Eds.), *Child Psychopathology* (3rd ed.), (pp. 225-263). New York, NY: The Guilford Press.

Hawken, L. S., Bundock, K., Kladis, K., O'Keeffe, B., & Barrett, C. A. (2014). Systematic review of the check-in, check-out intervention for students at risk for emotional and behavioral disorders. *Education and Treatment of Children*, 37, 635-658. doi:10.1353/etc.2014.0030

Herman, K. C., Merrell, K. W., Reinke, W. M., & Tucker, C. M. (2004). The role of

- school psychology in preventing depression. *Psychology in the Schools*, 41, 763-775. doi:10.1002/pits.20016
- Herman, K., Reinke, W. M., Parkin, J., Traylor, & Agarwal, G. (2009). Childhood depression: Rethinking the role of the school. *Psychology in the Schools*, 46, 433-446. doi:10.1002/pits.20388
- Herzig-Anderson, K., Colognori, D., Fox, J. K., Stewart, C. E., & Warner, C. M. (2012). School-based anxiety treatments for children and adolescents. *Child and Adolescent Psychiatric Clinics of North America*, 21, 655-668. doi:10.1016/j.chc.2012.05.006
- Higa-McMillan, C. K., Francis, S. E., & Chorpita, B. F. (2014). Anxiety disorders. In R. A. Barkley & E. J. Mash (Eds.), *Child Psychopathology*, (3rd ed.), (pp. 345-428). New York, NY: The Guilford Press.
- Higa-McMillan, C. K., Francis, S. E., Rith-Najarian, L., & Chorpita, B. F. (2016). Evidence base update: 50 years of research on treatment for child and adolescent anxiety. *Journal of Clinical Child & Adolescent Psychology*, 45, 91-113. doi:10.1080/15374416.2015.1046177
- Howell, E. (2004). Access to children's mental health services under Medicaid and SCHIP. *The Urban Institute*, 60, 1-8. Retrieved from http://webarchive.urban.org/UploadedPDF/311053_B-60.pdf.
- Huang, F. L., Reinke, W. M., Thompson, A., Herman, K. C., & County Schools Mental Health Coalition. (2018). An investigation of the psychometric properties of the Early Identification System—Student Report. *Journal of Psychoeducational Assessment*. doi: 10.1177/0734282918758791

- Hunter, K. K., Chenier, J. S., & Gresham, F. M. (2014). Evaluation of Check In/Check Out for students with internalizing behavior problems. *Journal of Emotional and Behavioral Disorders, 22*, 135-148. doi:10.1177/1063426613476091
- Ialongo, N., Edelsohn, G., Werthamer-Larsson, L., Crockett, L., & Kellam, S. (1995). The significance of self-reported anxious symptoms in first grade children: Prediction to anxious symptoms and adaptive functioning in fifth grade. *Journal of Child Psychology and Psychiatry, 36*, 427-437. doi:10.1111/j.1469-7610.1995.tb01300.x
- Jacobson, N. S., Martell, C. R., & Dimidjian, S. (2001). Behavioral activation treatment for depression: Returning to contextual roots. *Clinical Psychology: Science and Practice, 8*, 255-270. doi:10.1093/clipsy.8.3.255
- Jenkins, L. N., Demaray, M. K., Wren, N. S., Secord, S. M., Lyell, K. M., Magers, A. M., ... & Tennant, J. (2014). A critical review of five commonly used social-emotional and behavioral screeners for elementary or secondary schools. *Contemporary School Psychology, 18*, 241-254. doi:10.1007/s40688-014-0026-6
- Kanter, J. W., Cautilli, J. D., Busch, A. M., & Baruch, D. E. (2005). Toward a comprehensive functional analysis of depressive behavior: Five environmental factors and a possible sixth and seventh. *The Behavior Analyst Today, 6*, 65-81. doi:10.1037/h0100055
- Kendall, P. C. (1990). *Coping cat manual*. Ardmore, PA: Workbook Publishing.
- Kendall, P. C., Furr, J. M., & Podell, J. L. (2010). Child-focused treatment of anxiety. In J. R. Weisz & A. E. Kazdin (Eds.), *Evidence-Based Psychotherapies for Children and Adolescents* (2nd ed.) (pp. 45-60), New York, NY: The Guilford Press.

- Kendall P. C., & Hedtke K (2006). *Cognitive-behavioral therapy for anxious children: Therapist manual*. Ardmore, PA: Workbook Publishing.
- Kilgus, S. P., Chafouleas, S. M., & Riley-Tillman, T. C. (2013). Development and initial validation of the Social and Academic Behavior Risk Screener for elementary grades. *School Psychology Quarterly*, 28, 210-226. doi:0.1037/spq0000024
- Kilgus, S. P., Dart, E., von der Embse, N. P., & Collins, T. (2015). Development and validation of the Internalizing Behavior Observation Protocol (IBOP). *Manuscript in preparation*.
- Kilgus, S. P., & Eklund, K. (2017). Resilience Education Program. Unpublished curriculum and workbook.
- Kilgus, S. P., Reinke, W. M., & Jimerson, S. (2015). Understanding mental health intervention and assessment within a multi-tiered framework: Contemporary science, practice, and policy. *School Psychology Quarterly*, 30, 159-165. doi:10.1037/spq0000118
- Kilgus, S. P., Sims, W. A., von der Embse, N. P., & Taylor, C. N. (2016). Technical adequacy of the social, academic, and emotional behavior risk screener in an elementary sample. *Assessment for Effective Intervention*, 42, 46-59. doi:10.1177/1534508415623269
- Kilgus, S. P., & von der Embse, N. P. (2014). Unpublished technical manual of the Social, Academic, and Emotional Behavior Risk Screener.
- Klein, J. B., Jacobs, R. H., & Reinecke, M. A. (2007). Cognitive-behavioral therapy for

- adolescent depression: a meta-analytic investigation of changes in effect-size estimates. *Journal of the American Academy of Child & Adolescent Psychiatry*, 46, 1403-1413. doi:10.1097/chi.0b013e3180592aaa
- Knoff, H. M. (2001). *The Stop & Think Social Skills Program*. Longmont, CO: Sopris West.
- Kovacs, M., & Devlin, B. (1998). Internalizing disorders in childhood. *The Journal of Child Psychology and Psychiatry and Allied Disciplines*, 39, 47-63. doi:10.1111/1469-7610.00303
- Kusché, C. A., & Greenberg, M. T. (1994). *The PATHS curriculum*. South Deerfield, MA: Channing- Bete Co.
- La Greca, A. M., & Lopez, N. (1998). Social anxiety among adolescents: Linkages with peer relations and friendships. *Journal of Abnormal Child Psychology*, 26, 83-94. doi: 10.1023/A:1022684520514
- Levitt, V. H., & Merrell, K. W. (2009). Linking assessment to intervention for internalizing problems of children and adolescents. *School Psychology Forum: Research to Practice*, 3, 13-26.
- Lewinsohn, P. M., & Clarke, G. N. (1999). Psychosocial treatments for adolescent depression. *Clinical Psychology Review*, 19, 329-342. doi: 10.1016/S0272-7358(98)00055-5
- Lock, S., & Barrett, P. M. (2003). A longitudinal study of developmental differences in universal preventive intervention for child anxiety. *Behaviour Change*, 20, 183-199.
- Malecki, C. K., & Demaray, M. K. (2002). Measuring perceived social support:

- Development of the Child and Adolescent Social Support Scale. *Psychology in the Schools*, 39, 1–18. doi:10.1002/pits.10004
- Malecki, C. K., Demaray, M. K., Elliott, S. N., & Nolten, P. W. (2000). *The child and adolescent social support scale*. DeKalb, IL: Northern Illinois University.
- Masten, A. S., & Garmezy, N. (1985). Risk, vulnerability, and protective factors in developmental psychopathology. In B. B. Lahey & A. E. Kazdin (Eds.), *Advances in clinical child psychology* (pp. 1–52). New York, NY: Springer.
doi:10.1007/978-1-4613-9820-2
- Masten, A. S., Roisman, G. I., Long, J. D., Burt, K. B., Obradović, J., Riley, J. R., ... & Tellegen, (2005). Developmental cascades: linking academic achievement and externalizing and internalizing symptoms over 20 years. *Developmental Psychology*, 41, 733-746. doi:10.1037/0012-1649.41.5.733
- McConaughy, S. H., & Achenbach, T. M. (2009). Manual for the ASEBA direct observation form. *Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families*.
- McIntosh, K., Ty, S. V., & Miller, L. D. (2014). Effects of School-Wide Positive Behavioral Interventions and Supports on internalizing problems: Current evidence and future directions. *Journal of Positive Behavior Interventions*, 16, 209-218. doi:10.1177/1098300713491980
- Merikangas, K. R., He, J., Burstein, M., Swanson, S. A., Avenevoli, S., Cui, L., ... Swendsen, J. (2010). Lifetime prevalence of mental disorders in US adolescents: Results from the National Comorbidity Study-Adolescent Supplement (NCS-A).

Journal of the American Academy of Child & Adolescent Psychiatry, 49, 980-989.
doi:10.1016/j.jaac.2010.05.017

Michael, K. D., & Crowley, S. L. (2002). How effective are treatments for child and adolescent depression?: A meta-analytic review. *Clinical Psychology Review*, 22, 247-269. doi:10.1016/S0272-7358(01)00089-7

Miller, L. M., Dufrene, B. A., Sterling, H. E., Olmi, D. J., & Bachmayer, E. (2015). The effects of check-in/check-out on problem behavior and academic engagement in elementary school students. *Journal of Positive Behavior Interventions*, 17, 28-38. doi:10.1177/1098300713517141

Mitchell, B. S., Stormont, M., & Gage, N. A. (2011). Tier 2 interventions implemented within the context of a tiered prevention framework. *Behavioral Disorders*, 241-261. doi:10.1177/019874291103600404

Muris, P., Merckelbach, H., & Collaris, R. (1997). Common childhood fears and their origins. *Behaviour Research and Therapy*, 35, 929-937. doi:10.1016/S0005-7967(97)00050-8

Mychailyszyn, M. P., Méndez, J. L., & Kendall, P. C. (2010). School functioning in youth with and without anxiety disorders: Comparisons by diagnosis and comorbidity. *School Psychology Review*, 39, 106-121.

Pallant, J. F. (2000). Development and validation of a scale to measure perceived control of internal states. *Journal of Personality Assessment*, 75, 308-337. doi:10.1207/S15327752JPA7502_10

Parker, R., Hagan-Burke, S., & Vannest, K. (2007). Percentage of all non-overlapping

- data (PAND): An alternative to PND. *Journal of Special Education*, 40, 194–204.
doi:10.1177/00224669070400040101
- Parker, R., & Vannest, K. (2009). An improved effect size for single-case research: Nonoverlap of all pairs. *Behavior Therapy*, 40, 357–367.
doi:10.1016/j.beth.2008.10.006
- Parker, R. I., Vannest, K. J., Davis, J. L., & Sauber, S. B. (2011). Combining nonoverlap and trend for single-case research: Tau-U. *Behavior Therapy*, 42, 284–299.
doi:10.1016/j.beth.2010.08.006
- Paternite, C. E. (2005). School-based mental health programs and services: Overview and introduction to the special issue. *Journal of Abnormal Child Psychology*, 33, 657-663. doi:10.1007/s10802-005-7645-3
- Pavri, S. (2010). Response to Intervention in the Social-Emotional-Behavioral domain: Perspectives from urban schools. *Teaching Exceptional Children Plus*, 6, 2-15.
- Pine, D. S., Cohen, P., Gurley, D., Brook, J., & Ma, Y. (1998). The risk for early-adulthood anxiety and depressive disorders in adolescents with anxiety and depressive disorders. *Archives of General Psychiatry*, 55, 56-64.
doi:10.1001/archpsyc.55.1.56
- Proctor, E., Silmere, H., Raghavan, R., Hovmand, P., Aarons, G., Bunger, A., ... & Hensley, M. (2011). Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Administration and Policy in Mental Health and Mental Health Services Research*, 38, 65-76.
doi:10.1007/s10488-010-0319-7
- Reinecke, M. A., Ryan, N. E., & DuBois, D. L. (1998). Cognitive-behavioral therapy of

- depression and depressive symptoms during adolescence: a review and meta-analysis. *Journal of the American Academy of Child & Adolescent Psychiatry*, 37, 26-34. doi:10.1097/00004583-199801000-00013
- Reynolds, C. R., & Kamphaus, R. W. (2015). *Behavior assessment system for children – Third Edition (BASC-3)*. Bloomington, MN: Pearson.
- Richardson, J. W. (2008). From risk to resilience: Promoting school-health partnerships for children. *The International Journal of Educational Reform*, 17, 19-36. doi:10.2105/9780875530062ch24
- Richardson, J. T. E. (2011). Eta squared and partial eta squared as measures of effect size in educational research. *Educational Research Review*, 6, 135–147.
- Royston, P. (2004). Multiple imputation of missing values. *Stata Journal*, 4, 227-41.
- Rubin, K. H., & Mills, R. S. (1991). Conceptualizing developmental pathways to internalizing disorders in childhood. *Canadian Journal of Behavioural Science*, 23, 300-317. doi:10.1037/h0079019
- Scruggs, T. F., & Mastropieri, M. A. (1998). Summarizing single-subject research: Issues and applications. *Behavior Modification*, 22, 221–242. doi:10.1177/01454455980223001
- Sinclair, M. F., Christenson, S. L., Evelo, D. L., & Hurley, C. M. (1998). Dropout prevention for youth with disabilities: Efficacy of a sustained school engagement procedure. *Exceptional Children*, 65, 7-21. doi:10.1177/001440299806500101
- Sinclair, M. F., Christenson, S. L., & Thurlow, M. L. (2005). Promoting school

completion of urban secondary youth with emotional or behavioral disabilities. *Exceptional Children*, 71, 465-482.

doi:10.1177/001440290507100405

Stark, K. D., Arora, P., & Funk, C. L. (2011). Training school psychologists to conduct evidence-based treatments for depression. *Psychology in the Schools*, 48, 272-282. doi:10.1002/pits.20551

Stark, K. D., Schnoebelen, S., Simpson, J., Hargrave, J., Molnar, J., & Glenn, R. (2005). Treating depressed children: Therapist manual for ACTION. Ardmore, PA: Workbook Publishing.

Stice, E., Shaw, H., Bohon, C., Marti, C. N., & Rohde, P. (2009). A meta-analytic review of depression prevention programs for children and adolescents: factors that predict magnitude of intervention effects. *Journal of Consulting and Clinical Psychology*, 77, 486-503. doi:10.1037/a0015168

Stone, L. L., Otten, R., Engels, R. C., Vermulst, A. A., & Janssens, J. M. (2010). Psychometric properties of the parent and teacher versions of the Strengths and Difficulties Questionnaire for 4-to 12-year-olds: A review. *Clinical Child and Family Psychology Review*, 13, 254-274. doi:10.1007/s10567-010-0071-2

Substance Abuse and Mental Health Service Administration (2016). *Mental and substance use disorders*. Retrieved from <https://www.samhsa.gov/disorders>

Suldo, S. M., & Shaffer, E. J. (2008). Looking beyond psychopathology: The dual-factor model of mental health in youth. *School Psychology Review*, 37, 52-68.

Todd, A. W., Campbell, A. L., Meyer, G. G., & Horner, R. H. (2008). The effects of a

- targeted intervention to reduce problem behaviors: Elementary school implementation of Check In-Check Out. *Journal of Positive Behavior Interventions*, *10*, 46-55. doi:10.1177/1098300707311369
- Walker, H. M., Horner, R. H., Sugai, G., Bullis, M., Sprague, J. R., Bricker, D., & Kaufman, M. J. (1996). Integrated approaches to preventing antisocial behavior patterns among school-age children and youth. *Journal of Emotional and Behavioral Disorders*, *4*, 194-209. doi:10.1177/106342669600400401
- Weist, M. D., & Murray, M. (2008). Advancing school mental health promotion globally. *Advances in School Mental Health Promotion*, *1*, 2-12.
- Weisz, J. R. (2015). Bridging the research-practice divide in youth psychotherapy: The deployment-focused model and transdiagnostic treatment. *Verhaltenstherapie*, *25*, 129-132. doi:10.1159/000430432
- Weisz, J. R., McCarty, C. A., & Valeri, S. M. (2006). Effects of psychotherapy for depression in children and adolescents: a meta-analysis. *Psychological Bulletin*, *132*, 132-149. doi:10.1037/0033-2909.132.1.132
- World Health Organization (WHO; 2017). *Child and adolescent mental health*. Retrieved from http://www.who.int/mental_health/maternal-child/child_adolescent/en/
- Yoshikawa, H., Aber, J. L., & Beardslee, W. R. (2012). The effects of poverty on the mental, emotional, and behavioral health of children and youth: implications for prevention. *American Psychologist*, *67*, 272. doi:10.1037/a0028015
- Zahn-Waxler, C., Klimes-Dougan, B., & Slattery, M. J. (2000). Internalizing problems

of childhood and adolescence: Prospects, pitfalls, and progress in understanding the development of anxiety and depression. *Development and Psychopathology*, 12, 443-466.

Appendices

Appendix A. REP Curriculum Structure

Appendix B. Daily Progress Report

Appendix C. CICO & CBI Fidelity Checklists

Appendix D. IBOP Operational Definitions

Appendix A.
Resilience Education Program (REP): Curriculum Structure

Lesson	Concepts	Objectives (Students will be able to...)
1. Team building and introduction to REP	<ul style="list-style-type: none"> • Getting to know you • Group purpose, rules, structure, & format • Describe CICO procedures 	<ul style="list-style-type: none"> • State the group purpose & rules • Demonstrate familiarity with the structure of the group • State the group meeting time & CICO procedures
2. Identifying strong feelings and emotions	<ul style="list-style-type: none"> • When you feel strong feelings, it's hard to think clearly • Unmanaged, strong emotions can lead to negative behavior and consequences 	<ul style="list-style-type: none"> • Identify and name strong feelings/emotions when they occur • Describe what triggers their own emotions • Describe what happens to thinking and behavior when experiencing strong emotions
3. Using coping skills to manage strong emotions	<ul style="list-style-type: none"> • Using coping strategies can decrease feelings of sadness or anxiety • Staying in control of your emotions help you get along better with others and be successful at school 	<ul style="list-style-type: none"> • Demonstrate the ability to stop escalating emotions • Determine a personal "trigger" • Use calming down strategies (e.g., deep breathing, positive imagery) to address stressful or anxiety-provoking feelings
4. Using cognitive restructuring to prevent negative thoughts	<ul style="list-style-type: none"> • Altering our thinking can prevent internalizing behavior and bad behavior • Staying in control of your emotions can help you make better choices 	<ul style="list-style-type: none"> • Demonstrate the ability to stop escalating emotions • Use cognitive restructuring strategies to reduce negative thoughts
5. Using problem-solving strategies to generate solutions	<ul style="list-style-type: none"> • Following steps can help you solve problems • Solving problems helps you be successful in school 	<ul style="list-style-type: none"> • State the problem (including trigger, thoughts, feelings, behaviors) • Identify possible solutions and potential consequences • Select a solution and try it out

Appendix B.
Daily Progress Report.

Daily Progress Report (DPR)

	Controlled Emotions	Made Good Choices			Total Points	How I Felt
Math	0 1 2	0 1 2	0 1 2	0 1 2		
Science	0 1 2	0 1 2	0 1 2	0 1 2		
Social Studies	0 1 2	0 1 2	0 1 2	0 1 2		
Language Arts	0 1 2	0 1 2	0 1 2	0 1 2		
Special	0 1 2	0 1 2	0 1 2	0 1 2		
Total						

Please rate the extent to which the student engaged in each of the following three behaviors during each of the five academic activities:

0 = Never, 1 = Sometimes, 2 = Often

Total percent = _____ Reward chosen = _____

Goal percent = _____ Time reward was provided = _____

Goal met? _____ Yes / No Teacher initials _____

Appendix C.
CBI & CICO Fidelity Forms

CICO Fidelity Check

Today's Date: _____ **Student:** _____

CICO Mentor: _____ **Observer:** _____

Please indicate 'Y' for yes and 'N' for no.

Morning Check-In

- _____ Greets student.
- _____ Collects DPR from previous day.
- _____ Reminds student of DPR expectations and/or goals for the day.
- _____ Reminds student of CBI skills to use for the day.
- _____ Reminds student to keep his/her DPR in designated location.
- _____ Prompts student to return to classroom.
- _____ Uses a positive, encouraging tone throughout.

Afternoon Check-Out

- _____ Greets student.
- _____ Reviews DPR from today & identify if goal was met.
- _____ Signs daily sheet.
- _____ Gives reinforcement (verbal praise) if goal was met and allow student to access
reward. If goal was not met, gives corrective feedback (what may try differently) and encouragement (you can try again tomorrow) and reminds student to practice using CBI skills.
- _____ Prompts student to return to classroom.
- _____ Uses a positive, encouraging tone throughout.
- _____ Stores DPR data.

Adapted from MO PBIS & PBIS.org

EVALUATION OF TIER 2 INTERNALIZING INTERVENTION

CBI Lesson Fidelity Check

Today's Date: _____ **CBI Group/Lesson #:**
_____ / _____

CBI Facilitator: _____ **Observer:** _____

Please indicate 'Y' for yes and 'N' for no.

- _____ Collects and reviews homework.
- _____ Reviews previously learned skills.
- _____ Defines the skill and key vocabulary.
- _____ Explains why the skill is important.
- _____ Provides steps for using the skill and gives opportunity for students to repeat the skill
- _____ steps out loud.
- _____ Models steps for using the skill.
- _____ Provides students opportunity to role-play the skill.
- _____ Provides reinforcement for students practicing the skill.
- _____ Provides specific examples and non-examples of the expected skill.
- _____ Include time for goal setting and introducing homework assignment.

Name of Student in CBI group	In attendance? Y or N
1.	
2.	
3.	
4.	
5.	
6.	

Adapted from MO PBIS & PBIS.org

EVALUATION OF TIER 2 INTERNALIZING INTERVENTION

Appendix D.

Internalizing Behavior Observation Protocol (IBOP) Operational Definitions

Depression	Anxiety
Withdrawal: Drawing back from or out of a place or position. Examples: stays away from people, refusal to interact with others, does not speak, unusually quiet, keep to self, disinterested in environment	Worry: Verbal expression of phobias, fear, or nervousness (general or specific). Examples: expressing concerns regarding test performance, questioning whether he or she is going to get sick, stating he or she is afraid an activity will hurt them.
Crying: Expression of distress through visible tears. Examples: tears after corrective feedback, loud tantrum, audible yelling	Fidgeting: Nearly nonstop and often repetitive movement of at least one part of the body. Not essential to academic task. Examples include manipulating objects, wringing hands or fingers, tapping feet or hands and body rocking.
Sadness: Verbal expression of grief, unhappiness, self-deprecation, catastrophizing, or pessimism. Examples: "I'm sad." "My life sucks." "No one is ever going to hang out with me again." "Nothing ever works out for me."	Ritualism: Engaging in ritualistic behavior that serves no apparent function. Examples: repeated checking if he/she has an item in their bag, tapping of objects a certain number of times, insisting on completing an action "perfectly" before moving on, washing hands repeatedly.
Somatization: Verbal expression of complaints regarding health, sickness, or pain. Examples: Child states that his belly hurts, "I don't feel good," or states that he/she "Feels funny."	Panic: Shortness of breath, perspiration, trembling, and/or expression that heart is racing or pounding
Clinging: Reluctance to leave others (e.g., parents, teachers); preferring to stay in close proximity to a particular individual. Examples: holding onto a parent's leg when meeting new people, refusing to enter a room alone, hiding behind others when starting a new task.	Irritability: Verbal or nonverbal expression of frustration, anger, or discomfort related to the state of affairs or inability to transition to a new activity. Examples: complains something is boring, slams fist when told he/she cannot start a new task, whining, flailing.
Morbidity: Expression of morbid thoughts, including violent scenes, descriptions of injuries, or discussion of death.	Self-Injury: Self-directed physical acts that have the potential to cause harm. Examples: scratching of skin, picking of skin or scabs, hair pulling, punching head or leg.
Anhedonia: Lack of interest in preferred activities or interactions with preferred adults/peers. Examples: refuses an invitation to play a preferred game, rejection of opportunity to interact with best friend.	Restlessness: Expression of nervousness or boredom and tending to move around a lot. Examples: continuously moving, verbal expression of discontent, inability to sit still
Lethargy: Display of weariness or fatigue. Examples: yawning, expression of feelings of tiredness, falls asleep during inappropriate times, moves slower than usual through daily activities	

EVALUATION OF TIER 2 INTERNALIZING INTERVENTION

VITA

Kayla Deanne Kilpatrick was born in Saint Louis, Missouri on May 29, 1991 to Kevin and Tina Kilpatrick. After graduating from Eureka High School in 2009, Kayla began studying at the University of Missouri. In May 2013, Kayla graduated with a Bachelor of Arts in Psychology as well as minors in Spanish and Women's and Gender Studies. She entered the University of Missouri School Psychology Program in August 2013. She earned her Master of Arts degree in December 2016. During her time as a doctoral student, Kayla conducted research and provided psychological services to youth in school and clinical settings through a variety of practica experiences as well as through a state-funded mental health grant for rural schools. Kayla will complete her pre-doctoral internship with Cypress-Fairbanks Independent School District in Houston, Texas in June 2019 and will graduate with her doctorate in school psychology in August 2019. Kayla has obtained a position as a Regional Coordinator with the Boone County Schools Mental Health Coalition at the University of Missouri for the 2019-2020 school year.