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Addressing Internalizing Problems in Middle School Youth With Check In/Check Out

Malgorzata Borawska-Popielarz
Walden University

Walden University

College of Social and Behavioral Sciences

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Malgorzata Borawska-Popielarz

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Review Committee
Dr. Anthony Perry, Committee Chairperson, Psychology Faculty
Dr. John Meis, Committee Member, Psychology Faculty
Dr. Virginia Salzer, University Reviewer, Psychology Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
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Abstract

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Malgorzata Borawska-Popielarz

CAGS, Plymouth State University, 2009

MEd, Hofstra University, 2005

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

More than 20,000 primary- and secondary-level schools, which represent 20% of all schools in the United States, are implementing school-wide positive behavior supports (SWPBS) to enhance socially desirable behavior and promote a decline of problematic behavior among students. The overall efficacy of the 3-tier SWPBS framework is well documented. However, a paucity of empirical research addresses the use of check in/check out (CICO), a Tier 2 intervention, for youth who present as quiet and withdrawn, and who are at risk of academic and social disengagement. Accordingly, this quasi-experimental, nonequivalent groups study assessed the overall effectiveness of CICO and considered the differential effects of conducting a functional behavior assessment (FBA) at the secondary level of SWPBS. Twelve students from 1 middle school formed the convenience sample. Analysis of covariance repeated across time, with the preintervention scores being the covariate, was used to assess between group differences in the students' internalizing behaviors on the Behavior Assessment System for Children-Second Edition (BASC-2) Self-Report, teachers' BASC-2 ratings of adaptive skills, and office discipline referrals. Paired sample *t* tests were conducted to assess within-group effects. Findings indicate that CICO was an effective intervention for students presenting with a pattern of internalizing behaviors. For participants in the experimental group, a significant effect was found on the functional communication scale. Social change implications include educators having a better understanding of how Tier 2 interventions can be enhanced to meet diverse needs and that inclusion of youth's self-reports is needed when determining effects of supports.

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Dedication

To Ava, who for the first 5 years of her life shared her mom with this project. I hope you will continue to identify the worth of learning, thus growing the planted seeds of love for books and education for a lifetime.

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The following dissertation could not have been completed without the invaluable guidance of my Doctoral Committee Chair, Dr. Cary Smith, who begun this work with me and ensured that I remained focused and motivated. Dr. Smith's availability, despite time zone differences, and constructive feedback was essential and kept my momentum going. He always was just an email away. I am forever grateful to Dr. Anthony Perry who took over the Doctoral Committee Chair responsibilities. Dr. Perry's dedication and professionalism made the unanticipated transition seamless. Further, he made finishing this degree a reality for me.

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Lastly, mere words are not enough to express my heartfelt gratitude to my husband, Pawel. His unconditional support, quiet yet reassuring demeanor, and continuous patience, support, and love made my pursuit of this doctoral degree possible.

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Chapter 1: Introduction to the Study

Overview

As the trend of decreased academic achievement unfolded on a national level in the past 3 decades, the growing social, emotional, and behavioral needs of students became progressively evident. The reciprocal relationship between behavior and academics is well established. For example, Algozzine and Algozzine (2007) pointed out that the increased number of office discipline referrals (the traditional, reactive discipline response that schools typically engage in as means to correct challenging behaviors exhibited by students) corresponds to a decline in academic achievement levels. Adding to this argument, Sugai and Horner (2008) concluded that coercive interactions among educators and students, parallel decrease in academic achievement, and elevated antisocial behaviors exhibited by students are a direct outcome of reactive discipline measures.

To meet the needs of U.S. youth and address effectively the growing behavioral concerns, behavior management practices and discipline procedures in schools have been evaluated more progressively. Consequently, fundamental changes in existing practices have been mandated through legislative actions such as the amendments to the Individuals with Disabilities Education Improvement Act (Individuals with Disabilities Education Improvement Act [IDEA], 2004) and the No Child Left Behind Act (No Child Left Behind [NCLB], 2002). As a result of the aforementioned concerns and the corresponding response efforts, the concept of positive behavior supports has been gaining momentum in schools (Horner et al., 2013; Horner, Sugai, & Anderson, 2010;

Simonsen & Sugai, 2013). In essence, positive behavior supports are an alternative to traditional disciplinary practices.

The general scope of positive behavior support in the school setting relates to applying positive behavioral interventions and implementation of systems to achieve socially important behavior change (Sugai et al., 2000). School-wide positive behavior supports (SWPBS) is an evidence-based practice that has been implemented in numerous primary- and secondary-level schools throughout the United States to enhance socially desirable behavior and promote a decline of problematic behavior among students (Horner et al., 2010). The tiered approach of this framework provides varying levels of supports that are dependent on the youth's needs (Horner et al., 2010; Sugai & Horner, 2009).

Background

Approximately 89% of elementary school students, approximately 74% of students at the middle school level, and approximately 71% of high school students respond to the primary tier SWPBS interventions when it is implemented with fidelity (Horner, 2007). Despite considerable empirical support that SWPBS is an evidence-based educational practice throughout primary- and secondary-level schools (Luiselli, Putnam, Handler, & Feinberg, 2005; Muscott et al., 2004), researchers have been both mindful and cautious in generalizing findings. These reservations stem from the fact that although the features of SWPBS are universal, the particulars of the implementation of the approach likely differ due to school-based diversity as well as students' ages and

developmental needs (Bradshaw, Mitchell, & Leaf, 2010; Horner et al., 2009; Lane, Wehby, Robertson, & Rogers, 2007).

Being that not all students benefit from SWPBS in the same way (Lane et al., 2007), youth who do not respond to the universal (primary) supports likely present with needs that necessitate targeted, Tier 2, interventions (Hawken & Hess, 2006; Horner, Sugai, Todd, & Lewis-Palmer, 2005; Sugai & Horner, 2006). Similar to differences noted at the universal level, variations in student outcomes have been noted with Tier 2 interventions. The effectiveness of a second tier intervention program called check in/check out (CICO) has been both assessed (e.g., Todd, Campbell, Meyer, & Horner, 2008) and established when decrease in problem behaviors and increase in academic engagement have been the targeted outcomes (Campbell & Anderson, 2011; Simonsen, Myers, & Briere, 2010). Further, evidence suggests that students who present with externalizing behaviors show positive social, behavioral, and academic gains (Crone, Hawken, & Horner, 2010).

These outcomes are not as evident for youth who present with internalizing behavioral patterns (Hunter, Chenier, & Gresham, 2013; McIntosh, Ty, & Miller, 2013). The research base focusing on internalizing patterns of behavior presents as emerging. McIntosh et al. (2013) argued that there is a significant need for further research on SWPBS framework, universal screening practices, and interventions that specifically targets internalizing needs. To date, only one published study (Hunter et al., 2013) has focused on the CICO intervention and its effectiveness with this youth population. Research findings of Hunter et al. (2013) substantiated that youth presenting with

internalizing behavior problems benefited from CICO as evidenced by an increase in prosocial replacement behaviors and a decrease in levels of problematic internalizing behaviors.

The focus of this study was to determine whether CICO effectiveness among students at the middle school level who presented with a pattern of internalizing behaviors was improved when educators became aware of the perceived purpose (i.e., to avoid or gain attention from others) of a student's problem behavior through the process of a functional behavior assessment (FBA).

Problem Statement

Between 10% to 15% of youth present with targeted behavioral difficulties that need to be addressed through efficient, group-based supports (Lane, Oakes, & Menzies, 2010). The effectiveness of CICO is well established for youth who present with at-risk behaviors that manifest as, for example, disruptions to the learning environment and, thus, are visible (Campbell & Anderson, 2011; Crone et al., 2010; Simonsen et al., 2010). For youth who present with a nonconfrontational demeanor, who are quiet, withdrawn, and are academically and socially disengaged, CICO outcomes are not as clear, indicating a significant need for further research (Hunter et al., 2013; McIntosh et al., 2013).

Although determining the perceived intent of behavior through an FBA is a common practice within special education and at the tertiary tier of supports within SWPBS (Gable, Park, & Scott, 2014), it is not as common within the scope of Tier 2 supports. Goh and Bambara (2012) asserted that conducting FBAs in the school setting plays a vital role in determining the effectiveness of an intervention. McIntosh et al.

(2009) provided support for this assertion specific to CICO. In particular, the researchers explored the use of FBA with CICO in an effort to determine the extent to which the intended purpose of problem behavior affected the effectiveness of CICO. Results indicated that students presenting with escape-maintained behavior did not respond as favorably to CICO as did students presenting with attention-maintained behavior (McIntosh et al., 2009). However, researchers have not explored whether teachers' keen awareness of a student's intended purpose of problem behavior moderates the effectiveness of CICO for youth who present with an internalizing pattern of behavior. The purpose of the current study was to address this gap in the literature. Specifically, CICO outcomes for students at the middle school level who present with a pattern of internalizing behaviors were compared under two conditions: (a) when their teachers had awareness of the perceived purpose (i.e., to avoid or gain attention from others) and (b) when the educators did not have this explicit understanding while the students participated in the intervention.

Research Questions and Hypotheses

RQ1: What differential effect does implementation of CICO with and without teachers' awareness about function of problem behavior have on internalizing behavior problems for middle school students? Is there a notable difference on problem behavior ratings, prosocial behavior ratings, and disciplinary measures?

H_0: There are no differences in the effects of CICO when the intervention is implemented with and without teachers' awareness about function of problem behavior for middle school students who present with a pattern of internalizing behaviors. Levels

of problem behavior ratings, prosocial behavior ratings, and disciplinary measures are unaffected.

H_1: There are differences in the effects of CICO when the intervention is implemented with and without teachers' awareness about function of problem behavior for middle school students who present with a pattern of internalizing behaviors. Levels of problem behavior ratings, prosocial behavior ratings, and disciplinary measures vary.

Theoretical Frameworks

Social cognitive theory and behaviorism are the theoretical propositions for this study. Although the two theories complement each other, they addressed distinct features of this project. The lens of Bandura's (1986) social cognitive theory specifically provides a framework for CICO. By design, the intervention incorporates social influences and motivation as effective factors for youths' behavioral shifting. In addition, the theory's assumptions related to the effect of interpersonal environments suggest that social environment could play a contributing role in the development of internalizing patterns of problem behaviors in youth. Behaviorism, on the other hand, serves as the theoretical foundation for SWPBS. Further, the behavior analytic perspective provides a context specific to the functionality of one's behavior and how the behavior can be manipulated within the context of a social situation or environment. A more detailed explanation of how the aforementioned theories provide a theoretical foundation for this study will be presented in the subsequent chapter.

Rationale for Study and Design

Studying how schools can effectively support students with at-risk levels of internalizing behaviors is important because of the negative effect on academic achievement and the poor lifelong outcomes projected for this population. Being that social adjustment, teacher acceptance, personal well-being, and self-concept are significantly compromised for this student population (Bradshaw et al., 2010; Horner et al., 2009; Marchant et al., 2007; Nelson et al., 2008), this study specifically focused on determining whether a teacher's understanding of a student's function of behavior moderates the effectiveness of the CICO intervention for middle school youth who present as internalizers.

The independent variable in this study was teacher completion of the Functional Assessment Checklist for Teachers and Staff (FACTS) prior to implementing CICO intervention to identify function of problem behavior from the teachers' perspective. There were a total of 3 dependent variable measures: student-reported internalizing problem behavior ratings, teacher-reported prosocial behavior ratings, and the number of office discipline referrals. The first two variables were evaluated by using a norm-referenced, standardized behavioral rating scale (Behavior Assessment System for Children-Second Edition [BASC-2]), which is designed to help identify a variety of emotional and behavioral disorders of children. The third dependent variable is quantifiable and it is generally used as a data source in research that focuses on measuring effectiveness of SWPBS supports in schools (Bradshaw et al., 2010; Horner et al., 2009).

The nature of this study was quantitative. More specifically, the approach was a quasi-experimental, nonequivalent (pretest/posttest) control-group design. This design allowed for determining whether a difference existed in student outcomes when function of problem behavior was identified as an integral part of the CICO intervention. The proposed analysis was consistent with the primary focus of this dissertation.

Types and Sources of Information or Data

1. Internalizing problem behavior ratings obtained pre/post from the student via completion of the BASC-2 Self- Report (Reynolds & Kamphaus, 2004). The Internalizing Problems Composite of the BASC-2 is designed to assess inward feelings that are often associated with symptoms of anxiety, depression, somatization, and social stress.
2. Prosocial behavior ratings obtained pre/post from students' teachers via completion of the BASC-2 Teacher- Report (Reynolds & Kamphaus, 2004). Specifically, the Adaptive Skills Composite was considered as it examines prosocial, desirable behaviors, which include adaptability, social skills, leadership skills, study skills, functional communication skills, and activities of daily living.
3. Office discipline referral data collected for 8 weeks prior to the start of CICO and during the 8 weeks when CICO was implemented as a possible behavioral indicator of CICO effectiveness.

Type of Analysis. In this research project, data were analyzed for a pre/post comparison of CICO implementation effectiveness for each student group. A repeated-

measures multivariate analysis of variance (MANOVA) was originally proposed. However, an analysis of covariance (ANCOVA) was determined to be a more appropriate approach to determine (1) overall effects of CICO, (2) effects of CICO with identified function of problem behavior, and (3) follow up univariate analysis for each dependent variable (as determined applicable based on the overall and function-based effects).

Definitions of Key Terms

At-risk behavior: Refers to problem behaviors or characteristics that are associated with the development of emotional and behavioral problems. The intensity of the behavior is not considered to be at a clinically significant level (Burke et al., 2012).

Function of behavior: The intent or purpose a behavior serves for a person (Cooper, Heron, & Heward, 2007).

Internalizing behavior: Behavioral presentation associated with symptoms of anxiety, depression, social withdrawal, and somatic complaints (McIntosh et al., 2013).

Intervention: A planned positive behavior support action designed for an individual or group of youth that reduces problem behaviors, introduces effective replacement behaviors, and minimizes the potential of repeating the problem behaviors (Muscott, Mann, & LeBrun, 2008).

Positive reinforcement: Occurs when a behavior is followed immediately by the presentation of a stimulus that increases the future frequency of that behavior in similar conditions (Cooper et al., 2007).

Prosocial behavior: Relating to or denoting behavior that is positive, helpful, and intended to promote social acceptance that is based of feelings of connectedness to others ("Prosocial," 2007).

Office discipline referral: Documented violation of expected school behavior that contains information such as the type of incident that occurred, when and where the incident occurred, and what the teacher perceives the student's function of the problem behavior to be (Burke et al., 2012; Clonan, McDougal, Clark, & Davison, 2007).

Symptom: A specific behavioral or emotional characteristic that is associated with particular types of problems or disorders (Merrell, 2013).

Scope and Delimitations

The scope of this study was to evaluate whether identifying the function of problematic behavior differentiates the effectiveness of CICO for youth who present with an internalizing pattern of behavior. The focus of this project was specific to middle school youth as it is during this transitional life period that for many young people an at-risk level of problematic behaviors emerges.

The delimitations in this study stemmed from the selection of participants from one school, who attended either seventh or eighth grade. Participants needed to be, at a minimum, 12:0 at the time of participation. It was expected that the overall age rage will be between 12:0 to 14:6. Students younger than 12 years were excluded from the study, but their participation in the school-based intervention was not compromised. This restricting criterion was adhered to in an effort to use only the adolescent version of the BASC-2, which is standardized for youth between the ages of 12:0 and 21:11. In addition

to the age and grade level delimitations, the participants in this study included female and male students from only one middle school in New England. Being that the sample of participants was drawn from one school site, generalizability of results beyond the local setting is limited. However, it is possible that the results will be applicable to schools with similar demographics.

Assumptions and Limitations

There are several aspects in this study that are believed to be true but have not been demonstrated as facts. The first assumption is that the CICO intervention was implemented with fidelity. Although there was a fidelity measure, it is presumed that the obtained measure of implementation is indeed representative of day-to-day implementation of CICO. Secondly, it was assumed that all office discipline referral data captured and reported in the School Wide Information System (SWIS) was accurate with respect to frequency of reported incidents.

It was unreasonable to attempt to both identify and control for all of the variables that may have influenced individual students' outcomes during their participation in CICO. Because there are many aspects that can contribute to changes in behavior, nonidentification and corresponding lack of control pose as limitations of this study. For example, simultaneously with the intervention, individual youth could have been receiving community-based counseling supports or he/she could have enrolled in an extracurricular activity or sport. Both of these are feasible moderators of the student's behavior, yet they were not considered within the scope of this study. In addition, each student was likely motivated differently by the incentives that CICO offers. Similarly,

student engagement and active participation in CICO was likely effected by the extent to which the student found the intervention itself reinforcing. In addition, individual differences among CICO Coordinators and teachers likely acted as another limitation in this study.

Social Significance

The emphasis of Tier 2 is to identify problematic behaviors early and to provide targeted interventions in an effort to preclude heightening of the problematic behavioral pattern (Hawken & Hess, 2006; Horner et al., 2005; Sugai & Horner, 2006). This project addressed a less researched area of CICO, a Tier 2 intervention within the SWPBS framework. As noted earlier, the focus of the study was to determine whether a difference in the positive outcomes CICO exists for youth who present with an internalizing pattern of behavior when the intervention is implemented with and without a targeted understanding of the perceived intent of problem behavior by educators. The results of this project aimed to provide evidence for or negate the relevance of understanding the purpose of student behavior for educators when CICO is implemented.

This information will be valuable for schools in weighting the costs and benefits of completing of the FACTS prior to versus postintervention. Although the FACTS is available at no cost, the time and personnel resources required to complete it can pose as a burden to school teams. Within the SWPBS framework, this type of individual student focus would likely occur after implementation of secondary level interventions and/or at the tertiary level of support. Should this study provide supporting evidence for early identification of function of problem behavior (prior to beginning CICO intervention),

school teams will be able to provide target supports to students with internalizing patterns of behavior sooner, thus outweighing the initial cost of completing the FACTS.

The insight from this study will be relevant to school teams that oversee the implementation of CICO and determine pertinent teacher/staff trainings that are specific to this intervention. Findings from this study should also aid school personnel in determining how the systematic implementation of secondary level supports should be modified and adapted so that diverse student needs are met when CICO is implemented as a Tier 2 support. For example, the CICO procedures may need to be modified, such as be teacher initiated, to provide the youth with positive feedback without the students soliciting it. Also, teachers may benefit from being trained and be provided with scripted verbal responses that focus on highlighting the specific prosocial and/or emotional regulation students displayed during a given class as opposed to receiving feedback on, for example, their academic engagement.

Summary

This introductory section of the study is followed by four additional sections. Section 2 specifically focuses on the review of related research and literature on SWPBS, CICO, function of behavior, and internalizing patterns of behavior. In Section 3, the proposed methodology, research design, setting, sample, data collection process, and data analysis procedures are explained. Section 4 reports the particulars of data analysis and findings. Communicated in Section 5 are the interpretations of the findings, implications for social change, and recommendations for further research.

Chapter 2: Literature Review

The sequential and linear nature of schooling makes transitions unavoidable for youth. The transition from elementary to middle school has been recognized as one of several "normative life crises" (Greene & Ollendick, 1993, p. 162) that have been identified as particularly challenging for a significant number of youth (Bloyce & Frederickson, 2012). This is due to the fact that this period in the youth's lifespan is characterized by considerable developmental changes that are compounded by drastic modifications in the overall structure of the student's day and school environment (Berk, 2010; Bloyce & Frederickson, 2012; Greene & Ollendick, 1993). On one hand, this stage in one's life presents an individual with opportunities for psychological growth; however, it exposes the vulnerability of youth to a range of psychosocial challenges that could have a lasting effect.

With every new school-year beginning, an estimated 10% to 15% of the student population in middle schools throughout the United States presents with an at-risk level of social, emotional, and/or behavioral challenges (Hawken & Hess, 2006; Sugai & Horner, 2006). For this population of students, the stress and confusion of this life transition can become overwhelming. In many instances, the inability to resolve, adapt, or successfully progress through the presenting issues during the middle school years indicates foreseeable significant social, emotional, or behavioral challenges experienced in later adolescence and adulthood (Bloyce & Frederickson, 2012; Wigfield, Lutz, & Wagner, 2005).

Although proficient academic achievement and well-adjusted social and emotional growth are highly desired and valued post school outcomes for all youth, meeting these commendable goals has been a significant challenge for teachers and administrators throughout schools in the United States, especially when it comes to adolescent students who internalize and do not display behaviors that are disruptive to the learning environment. Schools throughout the nation are responding to the social, emotional, and behavioral needs of youth by implementing SWPBS (Horner, Sugai, & Anderson, 2010). Youth who present with at-risk behaviors necessitate that schools implement efficient, targeted, group-based (Tier 2) interventions (Hawken & Hess, 2006; Horner et al., 2005; Sugai & Horner, 2006). Researchers validated the effectiveness of CICO, a Tier 2 intervention program, for students who present with externalizing behaviors (Crone et al., 2010; Lane, Capizzi, Fisher, & Ennis, 2012). The findings are not as defined when it comes to students who present with internalizing behavioral patterns (Hunter et al., 2013; McIntosh et. al., 2013).

Literature Review Strategy

The literature review process began by searching global terms for *positive behavior support(s)* AND *targeted intervention(s)*. From the initial articles, the search terms were expanded to: *school-wide positive behavior supports(s), PBIS, Tier II, Tier 2, targeted-group intervention(s), secondary tier intervention(s), positive reinforcement, Check In/Check Out, Behavior Educational Program, functional behavior assessment, school-based mental health, internalizing behaviors, middle school transition, school concerns*, and *social emotional learning*.

This search process provided the basis for a more focused search for secondary-tier intervention(s) and behavioral challenges. From this, the literature search was further narrowed to *internalizing behaviors* AND *positive behavior supports(s)*. Additional searches were conducted in the areas of *school-based mental health* AND *social emotional learning*, AND *middle school challenges* and *functional behavior assessment* AND *targeted interventions.*

Peer-reviewed literature, published since 2002 and primarily focusing on the SWPBS framework was considered in the literature review process. Literature pertaining to positive behavior supports included original works dating back to 1996. The timeframe was limited to a span of 6 years (2008–2014) for peer-reviewed literature pertaining to secondary tier interventions and behavioral challenges in youth. The Google Scholar web-based search engine and library databases within the fields of psychology (e.g. PsycINFO, PsycARTICLES, and Psychology: A SAGE Full-Text Collection) and education (e.g. ERIC, Education Research Complete, and Education from SAGE) were used to complete the literature review. In addition, multidisciplinary databases (e.g., ProQuest Central, Science Direct, Academic Search Complete/Premier, and SAGE Premier) were accessed in the literature search for this project.

Theoretical Constructs

Social Cognitive Theory

Social cognitive theory (Bandura, 1986) provides a framework for understanding human behavior through the lenses of social modeling, human cognition, and motivation (Kincheloe & Horn, 2007). Bandura proposed that human behavior stems from an

interaction of personal factors, behavior, and the environment, which are influenced by one's thoughts, beliefs, cognitive competencies, and social influences. One's sense of self is contingent on one's thoughts, feelings, and actions in a given situation. Although the framework points out the importance of environmental influences and the social origins of thoughts and actions, it highlights one's functional consciousness and the ability to self-regulate as essential in modifying behavior (Bandura, 1991, 2001).

The application of social cognitive theory in the school setting has been explored by researchers within the contexts of mentoring and interventions based on principles of cognitive-behavior therapy (i.e., Holt, Bry, & Johnson, 2008; Miller, Shumka, & Baker, 2012). Holt et al. used the framework of social cognitive theory in validating the effectiveness of a school-based, adult mentoring of low-income minority students intervention by paralleling the "reciprocal interaction between personal (i.e., cognitive, affective, biological), behavioral, and environmental influences…[with] academic achievement, engagement, and learning" (p. 299). Findings indicated a desirable trend in school-related cognitions and behaviors of mentored students. Further, the researchers proposed positive longitudinal school engagement effects (Holt et al., 2008).

By originally introducing the notion that individuals engage in the process of thinking and interacting with the environment prior to acting, and later integrating this with the concept of self-efficacy, Bandura offered initial insight for how behavior change can be mediated via cognition (Huberty, 2009; Turner & Swearer, 2010). The integration of this novel concept was a precursor that laid the theoretical foundation for the emerging field of cognitive-behavior therapy (CBT). Currently, CBT is one of the most researched

and effective forms of psychotherapy in various settings, including schools (Huberty, 2009; Wright, 2004). School-based programs grounded in CBT (e.g., Coping CAT, CHOOSE HEALTH) have been used with success in educational settings to address needs of students diagnosed with mental health disorders such as anxiety and depression. The essential features of CBT-based programs include skill building, use of relaxation techniques, and behavioral shifting to enable the experience of positive rewards from the environment (Miller et al., 2012).

Behaviorism

The behavior analytic perspective provides further support for the notion that one's behavior is functional. This purpose or intent of exhibited behavior sets up the opportunity for manipulating the behavior within the context of a social situation or environment (Cooper et al., 2007). Specifically, it is the application of principles of applied behavior analysis (ABA) that allows for identification and systematic manipulation of environmental variables that affect socially relevant behaviors; this identified path, in turn, shows how the behavior can be modified (Bloh & Axelrod, 2008).

The application of behavioral analysis principles has been extensive in the field of education, both within the academic and the behavioral realms. The systematic and explicit methodology of direct instruction was particularly highlighted by Englemann and colleagues (Adams & Englemann, 1997). The approach focuses on defining, modeling, assessing, and reinforcing a given skill. Other commonly used instructional strategies based on ABA include shaping, modeling, chaining, and scaffolding; these strategies are especially relevant in times of new learning and skill acquisition (Simonsen & Sugai,

2009). Behavioral approaches such as token economies, group-based contingencies, and behavioral contracts are well established classroom management practices that are rooted in behaviorism (Maag, 2004).

Positive Behavioral Support & FBA

The notion that behaviors can be effectively changed through the application of ABA principles has been long validated through the work of Lovaas, Skinner, Baer, Wolf, and other behaviorists (Cooper et al., 2007). By the mid-1990s, researchers focused on synthesizing decades of empirical research on behavioral supports. This effort began a new era and new direction of the applied science referred to as positive behavioral support (PBS; Carr et al., 1999; Koegel, Koegel, & Dunlap, 1996). PBS specifically focuses on providing effective behavioral supports for individuals diagnosed with developmental disabilities, who present with significant behavioral challenges. One primary aspect of PBS is to change problem behaviors such as aggression or self-injury to socially desirable behaviors, which ultimately enable individuals with these significant behavioral challenges to be successfully supported and included in their community, education, employment, etc. (Carr et al., 1999; Carr et al., 2002; Koegel et al., 1996).

Essentially, PBS was the vehicle for the transfer of rigorous, laboratory-based ABA research practices and allowed for the development and practical application of effective intervention supports through the technology of a functional assessment of behavior (Carr et al., 1999). The design and use of FBA allows for understanding of what reliably predicts and maintains an individual's problem behavior. Rooted in ABA principles, this assessment approach allows for discerning the purpose of one's behaviors

that are noteworthy within the context of a social milieu. In turn, this process of uncovering the motivating factors of behavior sets the stage for designing interventions to modify problematic behaviors (Carr et al., 2002).

Analyzing the function of behavior and consequently manipulating the environmentally reinforcing aspects has become a hallmarked practice in the school setting. This mandate for determining the why through the process of functional analysis came from the Individuals with Disabilities Education Act (1975, 1997) and subsequent amendments in the Individuals with Disabilities Education Improvement Act (IDEIA) (2004). Per these educational laws, within the school setting, the requirement for conducting a functional analysis is directly related to developing positive behavior support plans for students identified with emotional and behavioral disorders (E/BD), whose challenging behaviors directly interfere with their learning and/or the learning of others (Waguespack, Vaccaro, & Continere, 2006). Historically, PBS has been associated with support for individuals with significant developmental disabilities and other low incident disorders (Carr et al., 1999); however, within the last couple of decades, the approach emerged as a research-based standard practice in public schools nationwide, especially within special education (Walker, Cheney, Stage, & Blum, 2005).

SWPBS as a Continuum

Initially, the needs of individual students who presented with significant behavioral challenges highlighted the application of ABA in the educational setting. However, the trend of decreased academic achievement that unfolded at the turn of the century on a national level essentially pointed out the growing social, emotional, and

behavioral needs of all students. Consequently, the concept of PBS has gained momentum within the context of school-wide efforts. This school-wide application of positive behavioral interventions focuses on creating sustainable systems to achieve socially important behavior change among various student populations (Sugai & Horner, 2008). The effort to implement interventions that are preventative, systematic, and sustainable has been rapidly increasing throughout schools in the United States (Chitiyo, May, & Chitiyo, 2012; Horner et al., 2010). As of August 2010, more than 13,000 schools throughout the United States implemented (SWPBS to meet the behavioral needs of youth in a proactive and a systematic manner (Chitiyo et al., 2012). With this movement, the scientific assumption that human behavior can change as the function of one's behavior is uncovered through a functional assessment and effectively supported through positive behavior intervention has become an everyday practice.

Although behaviorism provides the theoretical foundation for SWPBS, ABA is the applied science that lies beneath the framework (Simonsen & Sugai, 2009). It is through this lens that the SWPBS systems approach, also referred to in literature as School-wide Positive Behavioral Interventions and Supports (SWPBIS) and Positive Behavioral Interventions and Supports (PBIS), establishes a school environment and culture that is positive, safe, and focuses on promoting improved behavioral and academic results for youth (Chitiyo et al., 2012).

SWPBS is derived from the tiered prevention public health model that focuses on prevention, diverse populations, and positive systems change where targeted and individual programs are designed to build upon the structures of the primary level

(Bradshaw et al., 2010; Lane et al., 2010; Strein, Hoagwood, & Cohn, 2003). By incorporating person-centered planning and team-based decision making, the framework focuses on changing and supporting social behavior by establishing organizational and cultural systems (Sailor, Dunlap, Sugai, & Horner, 2008). The 3-tier framework projects that about 80% of the student population will be effectively supported through the systematic features of the universal level (Tier 1). It further estimates that 10 to 15% of students will need more and/or different type of interventions (Tier 2 group-based supports), in addition to the universal supports that are already available, to be successful. About 5% of the student population is projected to be in need of intensive and individualized supports, which are offered at Tier 3 (Horner et al., 2005; Sugai & Horner, 2006).

The defining features of the SWPBS model are that it is a comprehensive and an integrated tiered model designed to address social and behavioral needs of students in a preventative manner (Lane et al., 2010). The primary intervention practices are applied universally, across the entire school, specifically focusing on the implementation of proactive measures intended to prevent the development, or minimize the increase, of challenging behaviors while promoting pro-social skills. Key components of SWPBS at this tier include: (a) clearly defined social-behavioral expectations that are taught and reinforced with students on ongoing basis; (b) consistent consequences for violations of school expectations are implemented; (c) development of systems that support and sustain these practices; and (d) intervention planning and outcome monitoring that are

based on school-data (Feuerborn & Tyre, 2012; Horner et al., 2010; Sugai & Horner, 2009).

Researchers began to demonstrate that the universal level of the 3-tiered SWPBS framework is an effective practice across primary- and secondary-level schools (Bradshaw et al., 2010; Horner et al., 2009; Lane et al., 2007). Bradshaw et al. (2010) completed a 5-year longitudinal study to evaluate the effectiveness of SWPBS. The study involved a randomized controlled effectiveness trial of SWPBS in 37 Maryland public elementary schools. The main findings of this study provided evidence that SWPBS implementation had a desirable effect on student suspensions and office discipline referrals. Further, improvements in standardized test achievement scores were noted. Another study, conducted by Horner et al. (2009) at the elementary level, revealed lowered rates of office discipline referrals and improvements in state reading standards post SWPBS implementation.

Similar to the evidence-base for Tier 1 supports in schools, implementation of tertiary level interventions are also established in educational settings (Forness, 2005; Freeman et al., 2006; Turnbull et al., 2002). Historical application and the evidence-base for positive behavior supports at the individual level has been primarily associated with supports for individuals diagnosed with developmental disabilities and autism spectrum disorders in particular (Carr, 1999). Since the reauthorization of the IDEA of 1997, the scope of providing this level of behavioral intervention is much broader. Within the school setting, individual positive behavior supports pertain to students identified with emotional and behavioral disorders (E/BD), whose challenging behaviors negatively

effect their education or the education of others (Waguespack et al., 2006). This individualized level of intensive supports falls within the tertiary tier of SWPBS, which focuses on meeting the highly personalized needs of students who present with chronic patterns of problem behaviors and academic failure (Sugai & Horner, 2008). This is typically accomplished by using FBA procedures and consequently developing positive behavior support plans for individual students (Waguespack et al., 2006).

Comparatively speaking, while a small percentage of students (approximately 5%) receives tertiary supports, Mitchell, Stormont, and Gage (2011) argue that a considerable population of youth is at risk of developing significant behavioral and emotional needs. In an effort to prevent a growing demand for individualized supports, secondary-level supports within SWPBS have been of interest to researchers (McIntosh, Campbell, Carter, & Dickey, 2009; Simonsen, Myers, & Briere, 2011; Swoszowski, 2013). In particular, researchers have focused on the development of preventative interventions at Tier 2 within the SWPBS framework, where early identification and implementation of targeted supports to prevent exacerbation of problematic behaviors is the focal point (Hawken & Hess, 2006; Horner et al., 2005; Sugai & Horner, 2006.

Tier 2

The secondary level builds upon the primary prevention practices of the universal tier and provides more intensive, targeted academic and/or behavioral supports to youth, often within a structure of a group-based intervention that typically involves increased adult attention and monitoring (Anderson & Borgmeier, 2010; Walker & Shinn, 2002). Tier 2 supports specifically focus on students who are at risk for developing clinical

levels of emotional and behavioral disorders. Although these youth present with patterns of challenging behaviors, such as defiance, tardiness, or absenteeism, their current behavioral presentation is not severe enough to warrant individualized level of supports. As such, the intention of secondary level supports is to impede further development and intensity of behaviors of concerns by successfully addressing risk factors and increasing positive aspects of life for the youth (Yong & Cheney, 2013).

Research findings suggest that many students who present with at risk behaviors indeed respond desirably to Tier 2 interventions (Simonsen et al., 2010). Anderson et al., (2013) highlighted that such outcomes are promising as educators are able to meet youth's needs more quickly and more competently, through low-cost and low-resource interventions. To be efficient and sustainable, the systematic implementation of Tier 2 supports necessitates that the implementation include the following features. The secondary-level support is similar across students, yet the intervention is flexible based on needs identified through functional assessment. Further, all school staff are trained regarding the intervention and students have quick access and continuous availability to the intervention. Last, the intervention must be consistent with school-wide expectations that are identified at the universal level and data are used on ongoing basis to monitor students' progress on the intervention (Crone et al., 2010).

To maximize efficiency of secondary level interventions, schools often focus on Tier 2 interventions that concentrate on common behavioral concerns among youth for whom preventative universal-level supports are inadequate. Regardless of the specifics of a selected Tier 2 intervention, researchers identified several features that set the

foundation for efficient implementation of Tier 2 supports that are effective in an educational setting. Key components include (a) instruction of desired skills, (b) practice of desired skills in a targeted setting, (c) consistent reminders of desired behaviors, and (d) recurring feedback (Anderson & Borgmeier, 2010). CBT components are also echoed as the key features of a secondary intervention (as defined by the SWPBS framework).

CICO. CICO, also known as the Behavior Education Program, is a Tier 2 school-based intervention that aims to support at risk students by focusing on: (1) providing the youth with (a) clear behavioral expectations, (b) frequent feedback, (c) routines, and (d) positive reinforcement that is dependent on meeting pre-established goals; 2) examining the comorbidity of problem behaviors and compromised academic performance; and 3) fostering positive teacher/staff-student relationships as the initial basis of effective behavior supports (Crone et al., 2010). Through the lens of a systematic secondary-level SWPBS intervention, key features of CICO allow for (1) efficient and effective group-based implementation, (2) instruction of skills, (3) opportunities to practice new skills, and (4) generalization of skills across settings (Anderson, Turtura, & Parry, 2013; McIntosh et al., 2009).

The daily intervention cycle of CICO includes a morning check-in with a designated CICO coordinator, ongoing teacher feedback throughout the student's school day, an end of the day check-out at school with a CICO coordinator, and a home-based check-in with parent(s). A Daily Progress Report (DPR), which involves awarding points to the student for demonstrating desirable behaviors is used to collect data of the

student's progress on daily basis (Crone et al., 2010; McIntosh, Campbell, Carter, & Rossetto Dickey, 2009).

CICO Coordinator Role. The role of a CICO coordinator is to foster a positive school-based connection for the student. Typically this role is assigned to a respected adult within the school that has the flexibility in his/her workday to connect with students at the designated times. Staff in positions of educational assistants (i.e., paraprofessionals, teacher's aide) or program assistants are often elected by school administrators to serve as CICO coordinators due to their flexibility as well as the advantage of reducing the cost of delivering this intervention (Crone et al., 2010).

The daily morning and afternoon check in and check out with the CICO coordinator is an essential feature of the program as it sets the stage for the student to begin and end the school day on a positive note. These are also the times when the student picks up/turns in the DPR. Moreover, the end-of-the-day check out may serve to positively reinforce the student for demonstrating expected behaviors throughout the day. The positive reinforcement may be in the form of verbal praise, a tangible reinforcer (i.e., sticker), time with preferred adult, etc. Further, with the support of the school's Tier 2 team, the CICO coordinator oversees the daily structures of the CICO routines for the student, collects data, and monitors the student's progress on ongoing basis (Crone et al., 2010; McIntosh et al., 2013; Miller, Dufrene, Sterling, Olmi, & Bachmayer, 2014).

Teacher's Role in CICO. Although similar to the check ins/check outs with the CICO coordinator, the check ins and check outs with a teacher at the beginning of and at the end of each class are brief and require little effort from teacher. The main purpose of

these teacher-student communication interchanges is to foster a positive interaction between the student and the teacher and increase the likelihood that each class begins and ends in a positive manner (Crone et al., 2010). Further, the teacher-based check out includes positive feedback for the student that highlights which expected behaviors he/she demonstrated during the class period and points on the DPR are awarded accordingly to reflect that (Crone et al., 2010; Miller et al., 2014).

Student's Role in CICO. Students are nominated for participation in CICO based on the school's criteria to access Tier 2 intervention supports. Even though students are nominated and parental consent is obtained at time of referral, the student ultimately chooses to participate and cooperate with the CICO system. Despite nomination and parental permission, students are not required to be a part of the program, but they need to be willing to participate. This initial voluntary buy-in from a student is essential. He/she has the responsibility to follow through with expectations related to check ins/check outs and carrying the DPR throughout the school-day and brining it home (Crone et al., 2010).

Parents'/Caregivers' Role in CICO. The student's parents/caregivers provide permission for the student to participate in CICO. In addition, parents/caregivers agree to deliver recognition for success (based on daily DPS) to the student and, if applicable, sign the DPR to communicate that they are aware of the student's daily progress (Crone et al., 2010).

Middle School Transition

Adolescent years mark the transition from childhood to adulthood. The significant physical, cognitive, and emotional changes that take place during this period are part of lifespan development and mark the beginnings of physical and emotional maturity. Adding to the already momentous developmental advances is a significant social and environmental change that the youth encounters – the transition from elementary to middle school. The demands that stem from the new social environments (i.e., school and social networking) pose numerous obstacles and necessitate a great deal of adaptability and resilience from youth. Greene and Ollendick (1993) argued that this major school change is characterized by drastic changes in the overall structure of the students' day as well as the school environment. Some of these factors include the shift to multiple teachers, academically focused classes, and major changes in expectations related to social, emotional, and behavioral norms. Zeedek et al. (2003) noted that increased workload, peer relationships, bullying, and becoming familiar with new routines/environments were identified by youth as some of the key aspects causing worry and anxiety in the transition from primary to secondary school.

Although many students successfully make it through early adolescence and the middle school years, for some, the stress and confusion of this life transition can become overwhelming. Some of the most prominent concerns during the middle school years center around youth not fitting in or not having a sense of belonging, both of which are precursors to school disengagement (Wang & Holcombe, 2010). Prior research on school engagement validates the relationship between low levels or lack of school engagement

and the decline in academic achievement along with the corresponding rise of at risk factors among school-aged youth (Fall & Roberts, 2012; Veiga et al., 2012; Wang & Holcombe, 2010).

As the youth begins to disengage from school (i.e., decreased school attendance, decreased participation and engagement in academic tasks, etc.), the risk for developing a host of negative psychosocial outcomes (development of mental health disorders, substance abuse, school failure and dropout) substantially increases (Fall & Roberts, 2012; Hawkins, Guo, Hill, Battin-Pearson, & Abbott, 2001; Veiga et al., 2012; Wang & Holcombe, 2010).

Introverted Personality & Internalizing Behavior Patterns

In addition to the complex interactions among variables such as hormonal changes, body growth, sexual maturation, and brain development that take place, the young person also begins to construct his/her identity and evaluates his/her personality characteristics while being keenly aware and particularly vulnerable to feedback from peers (Berk, 2010; Kamphaus & Frick, 2005). Peer acceptance becomes of great value to middle school youth, while the desire to meet adult expectations is significantly decreased (Bellmore, 2011). Based on social cognitive theory, Stormont, Reinke, and Herman (2012) proposed that interpersonal environments could contribute to the development of internalizing patterns of problem behaviors in youth. The researchers illustrate this through an example in which youth that present with maladaptive coping strategies (i.e., avoidance of social situations and negative self-talk) likely react with a specific pattern of behavior that has been both modeled and reinforced within the social

milieu. Kamphaus and Frick (2005) pointed out that early personality assessments correlate with the reflective consideration of life-long personality traits that bring about behavior. These distinct personality characteristics parallel with ways of thinking and engaging in particular acts (behaviors). As such, an introverted adolescent may have a tendency to cope with stressful situations by withdrawing from social contact and present as timid or inhibited (Kamphaus & Frick, 2005).

The defining features of the introverted personality pattern closely resemble the diagnostic dimensions of internalizing behavioral problems and psychological disorders of childhood such as anxiety and depression (Huberty, 2009; Kamphaus & Frick, 2005). In educational and psychological literature, adolescents who present as socially withdrawn and/or with inhibited behavior are referred to as internalizers (Merrell, 2013). Although prevalent, the aforementioned challenges of the student population who present with internalizing symptoms tend to be dismissed and/or overlooked (Nelson et al., 2008). Marchant et al. (2007) described internalizers as students who are often undetectable due to their quiet and non-confrontational demeanor. This phenomenon simply happens because these adolescents do not necessarily disrupt the learning environment for others and thus do not solicit a reaction in response to their behaviors of concern from teachers, parents, etc.; these students disengage and accordingly become unnoticeable.

Nonetheless, the behavioral appearance of students classified as internalizers presents a considerable obstacle and can lead to significant levels of maladjustment for the individuals if not properly addressed during adolescence (Stormont et al., 2012). In

particular, personal well-being, teacher acceptance, social adjustment, poor self-concept, and academic achievement are some of the aspects that are significantly compromised and negatively effected for this population (Marchant et al., 2007; Nelson et al., 2008).

Characteristics of Internalizing Problems and Disorders

The emotional and behavioral problems of youth who present as internalizers stem from overcontrol of symptoms (Merrell, 2013). A variety of these problems become evident as a result of one's attempt to maintain control or regulate emotionally through maladaptive ways of thinking about how he/she feels. As a result of this direct link between one's emotional and cognitive states, internalizing problems are described as occurring "within" the individual. In literature, internalizing problems among youth are associated with social withdrawal, somatic problems, anxiety, and depression (Merrell, 2013; Stormont et al., 2012).

Although social withdrawal and somatic problems typically present as ancillary to internalizing disorders (i.e., anxiety and depression), they both present features that are important to consider in isolation within the context of internalizing problems among youth. Specifically, social withdrawal in young individuals is characterized by lack of interest in social interactions that may be compounded by unwarranted fear and unrealistic expectations of self in social situations. Somatic complaints of stomachaches, pains, nausea, and other discomforts for which there are no known medical causes are highly common. When combined with other internalizing symptoms, they can contribute to compromised functioning. The origins of somatic problems are believed to be psychological (stemming from emotional distress) and not physical. This unique

conceptualization makes somatic problems both a separate cluster within the broader context of internalizing problems as well as part the physiological symptoms of anxiety and depression (Merrell, 2013).

Anxiety and depression are estimated to co-occur in 50% of youth who show moderate to significant levels of either disorder (Huberty, 2009; Hyman, 2013). As these internalizing disorders are highly comorbid, it is not surprising that there is some overlap in their cognitive, behavioral, and physiological symptoms. Common cognitive characteristics associated with both anxiety and depression include concentration difficulties and memory problems. Behavioral and physiological symptoms of both disorders are irritability, sleeping and somatic problems, respectively.

An additional significant cognitive symptom associated with anxiety is worry. Social withdrawal, task avoidance, and perfectionistic tendencies are behavioral characteristics that are also indicative of the disorder. Symptoms that present as somatic complaints specific to soreness of muscles, nausea, headaches, or experiences of recurrent, localized pain, perspiration, and shortness of breath are common physiological indicators of anxiety (Huberty, 2009; Silverman & Kurtines, 2001). In contrast, common cognitive characteristics of depression involve a negative view of self, feelings of low self-esteem, hopelessness and helplessness, and suicidal thoughts. Behavioral symptoms associated with depression often include limited engagement in everyday activities, decline in self-care or personal appearance, withdrawal or detachment from others, and suicidal attempts. In addition to the aforementioned sleeping problems, poor appetite or

overeating and low energy/fatigue are physiological symptoms of depression (Bachanas & Kaslow, 2001; Huberty, 2009; Merrell, 2013).

Prevalence of Internalizing Disorders. Based on a national survey from 2010, Merikangas et al. (2010) reported that anxiety disorders are the leading mental health disorders among youth in the United States between the ages of 13 and 18. A reported 31.9% of adolescents experience emotional and behavioral problems associated with symptoms of anxiety. An additional 14.3% of school-aged youth presents with mood disorders such as depression (Merikangas et al., 2010). Stormont, Reinke, and Keith (2012) argued that these finding are likely an underestimate as they do not include youth who present with subclinical levels of these mental health disorders.

Huberty (2009) echoed this assumption by noting that all youth experience anxiety as part of normal development. The uniqueness of an anxiety disorder lies in the intensity, longer duration, and increased frequency of worry and its effect on one's functioning, not in the symptoms per se. As such, detecting the onset of an anxiety disorder can be challenging. Prevalence rates for anxiety disorders in youth are estimated to range from 10% to 20% (Huberty, 2009). Reportedly, 12.3% of youth meet criteria for an anxiety disorder diagnosis at some point in middle childhood (ages 6 to 12) and 11% in adolescent years (Costello, Egger, Copeland, Erkanli, & Angold, 2011).

Depressive symptoms are the second largest cluster of internalizing disorders. Prevalence of depression increases with age during childhood. Although an estimated 1.5% of preadolescents present with depression, the rate increases, comparatively rapidly, to 8% to 10% in adolescence (Huberty, 2009). With this peak in mid-adolescent years, an

estimated 4% to 5% of youth during late adolescence experience mental health problems associated with a depressive disorder (Thapar, Collishaw, Pine, & Thapar, 2012).

Screening for At-Risk Youth in Middle School

Although the focus of the SWPBS is on prevention and amelioration of social behavior problems, detecting at-risk levels of internalizing issues among middle school youth can be particularly challenging. The combination of the covert nature of internalizing problems along with the developmental and environmental changes that middle school youth students face makes the task daunting, but not impossible. Researchers have developed ways to address this preventative identification gap for secondary level supports by implementing the practice of universal screening as part of the SWPBS framework (Lane et al., 2010). The primary focus of universal screenings is to identify students who are not responding to the primary level of supports at an early stage (Burke et al., 2012). Typically, a systematic screening involves a large-scale assessment of a grade-level or school. As such, the nature of a universal screening demands not only that the tool(s) used be valid and reliable, but also that the screener is feasible in terms of cost, time, and personnel (Lane et al., 2010).

The Student Risk Screening Scale (SRSS) is an example of criterion-referenced, systematic behavior screening tool (Lane, Oakes, Carter, Lambert, & Jenkins, 2013). Originally the seven-question tool was developed for grades K – 6; however, in the past decade, the SRSS has been determined to be valid and reliable at the middle school level as well (e.g., Lane, Bruhn, Eisner, & Kalberg, 2010; Lane, Parks, Kalberg, & Carter, 2007). Despite its expanded applicability to middle school, a shortcoming of the SRSS is

that it is not designed to detect internalizing problems. With empirical evidence suggesting that rates of internalizing disorders are higher among students than externalizing disorders (Forness, Freeman, Paparella, Kauffman, & Walker, 2012), the need for developing a screening behavior tool that specifically detects externalizing and internalizing behaviors did not go unnoticed. Based on the original version of the SRSS (Drummond, 1994), Lane et al., (2013) recently developed and validated the Student Risk Screening Scale for Internalizing and Externalizing disorders (SRSS –IE), which specifically identifies internalizing and externalizing behaviors. Although expanded to a total of 12 items (7 from the original SRSS and 5 additional to detect internalizing behavior), the SRSS-IE continues to be a feasible tool that is also validated for use at the elementary and the middle school levels (Lane et al., 2013).

Summary

Prior research indicates that CICO is an effective secondary-level intervention for students who present with externalizing patterns of behavior. Findings are not as universal for youth who present as internalizers. This is partly attributed to the fact that students presenting with elevated levels of signs and symptoms of anxiety, depression, social withdrawal and/or somatic complaints are not necessarily disruptive to the learning environment, thus they do not solicit teacher attention and feedback. The focus of this project was to explore if determining the function of behavior with the student's teachers and implementing CICO with this understanding enhances the positive outcomes for youth who present with internalizing patterns of behavior. The methods by which this inquiry was explored are provided in the succeeding chapter.

Chapter 3: Research Method

The purpose of the study was to explore whether teachers' keen awareness of a student's intended purpose of problem behavior moderates the effectiveness of CICO for youth who present with an internalizing pattern of behavior. This was addressed by comparing CICO outcomes for students at the middle school level who presented with a pattern of internalizing behaviors when their teachers were aware of the perceived purpose (i.e., to avoid task/activity or attention from others) and when the educators did not have this explicit understanding while the students participated in the intervention.

This chapter addresses the quantitative design that was used to determine whether identifying the function of student's problem behavior prior to the implantation of the intervention had a differential effect on CICO outcomes. Also discussed in this section are the demographics of the middle school from which the population of interest was recruited and the sampling procedures that were used. In addition, validity and reliability of instruments that were used are presented. Last, proposed data collection, analysis procedures, and the steps to protect participants are discussed.

Research Design and Rationale

The nature of this study was quantitative. The approach was a quasi-experimental, nonequivalent (pretest/posttest) control-group design. A quasi-experimental design was chosen because the researcher selected participants from a naturally formed sample. The sample was drawn from a group of middle school students identified as presenting with an internalizing pattern of behavior based on a universal screening conducted at the

school. The universal screening procedures were independent of this research project as it is an established procedure of the SWPBS framework.

The selected design allowed for determining whether a difference existed in student outcomes when function of problem behavior was identified as an integral part of the CICO intervention. The initially proposed analysis and subsequent modifications to the analytic procedures allowed for determining whether identifying the function of problem behavior at the onset of CICO had a differentiating effect on outcomes, which was the primary focus of this study.

There was one independent and three dependent variable measures in this study. The independent variable was teacher completion of the FACTS prior to implementing the CICO intervention to identify function of problem behavior from the teachers' perspective. The three dependent variable measures were: (a) student-reported internalizing problem behavior ratings, (b) teacher-reported prosocial behavior ratings, and (c) the number of office discipline referrals. The first two variables were evaluated by using a norm-referenced, standardized behavioral rating scale (BASC-2), which is designed to help identify a variety of emotional and behavioral disorders of children. The third dependent variable was quantifiable and it is generally used as a data source in research that focuses on measuring effectiveness of SWPBS supports in schools (Bradshaw et al., 2010; Horner et al., 2009).

Methodology

Demographic Information

The participants for this study were recruited from a middle school located in the New England region of the United States. This school was selected as a site for this study for various reasons. First, this particular middle school was in its third year of implementing SWPBS and Tier 2 interventions such as CICO at the time the data were collected for this research project. Second, this school site was available to the researcher as the researcher was an employee of the school district.

According to the National Center of Educational Statistics (NCES) the selected middle school had a total student population of 1014 across three grade levels for the 2014-2015 school year. Sixth-grade enrollment was 310 students, the seventh-grade student population was 353, and there were 351 students in eighth grade. Fifty-two percent of the students were males and 48% of the students were females. The student population was 86% White students, 6% African American (non-Hispanic) students, and 6% Asian/Pacific Islander students. Less than 1% of the students were Hispanic and American Indian/Alaska Native. Twenty-eight percent of students were eligible for free lunch and 7% were eligible for reduced lunch (NCES, 2014). There were 76 certified teachers teaching at the school with a student/teacher ratio of 13.36.

Population

Participants in this study were male and female students who attended either seventh or eighth grade at the selected school. Participants needed to be, at a minimum, 12:0 at the time of participation. It was expected that the overall age range would be

between 12:0 and 14:6. Students who received the CICO intervention but were younger than 12:0 were not be invited to participate in the study. This restricting criterion was established and adhered to in an effort to use only the adolescent version of the BASC-2, which is standardized for youth between the ages of 12:0 and 21:11.

Sampling

Purposive sampling was the sampling strategy used. This sampling strategy was employed as the researcher tried to find a group of middle school-aged participants that met the predefined characteristic of presenting with a pattern of internalizing behavior. The sample was drawn from a student population from grades seven and eight from one middle school. Participants from the convenience sample were arbitrarily assigned to the experimental and control groups to help assure that the groups were similar to one another prior to the treatment.

Sample size. Literature review suggested that a medium to large effect size should be selected for this study (McIntosh et al., 2009). With $\alpha = .05$, it was anticipated that the sample size would fall between 21 ($\varpi^2 = .14$) to 6 ($\varpi^2 = .40$) participants for each sample.

Participant Recruitment and Participation

Participants for this study were recruited from a pool of students pre-identified by the Tier 2 team at the school via a universal screening as well as teacher referrals. It was anticipated that the screening conducted at the end of the 2013-2014 school year for students in grades six and seven would be used. These students transitioned to seventh and eighth grade, respectively, for the 2014-2015 school year, which is when recruitment

for this study was anticipated. In actuality, participants were recruited from a winter (January 2015) screening as well as teacher referrals (teacher referral is another gateway for student nomination for CICO at this school). The pre-identification via universal screening or teacher referral of students selected for participation in CICO was independent of this study.

Students nominated for participation in CICO who primarily presented with an internalizing pattern of behavior (identified based on universal screening or teacher referral) were invited to participate in this study. Informed consent to participate in this study was obtained from parents or guardians of students and teacher. Informed assent was obtained from the student participants. Approval of the aforementioned consent and assent forms was obtained from Walden University's Institutional Review Board (IRB) prior to recruitment.

A Letter of Cooperation requesting permission from the principal to conduct the research at the school was secured. Data collection for this study begun after approval was granted by Walden University's Institutional Review Board (IRB). Walden University IRB approval number for this study is 11-19-14-0159553.

Data Collection

There were three sources of data collected for the purpose of this study. Being that this study was be a quasi-experimental, nonequivalent (pretest/posttest) control-group design, all three data points were collected prior to the student participating in CICO and at 8 weeks of participation.

BASC-2 self-report. The BASC-2 self-report (Adolescent form; Reynolds & Kamphaus, 2004) was completed by all student participants prior to CICO participation and at 8 weeks of participation. The scale was administered individually. The researcher was available to clarify any question that the student participants may have had about the rating scale and the content of items on the scale. *T* scores obtained on the Internalizing Problems composite and three clinical scales (Anxiety, Depression, and Somatization) were used in data analysis procedures.

BASC-2 teacher-report. The BASC-2 teacher-report (Reynolds & Kamphaus, 2004) was completed by one of the student's core academic teachers, who also was the homeroom teacher for the student participant. Core academics at the selected middle school include Math, Language Arts, Social Studies, and Science. The selection of a core academic/homeroom teacher to be the teacher respondent allowed the teacher to see the student in both academic and non-academic setting twice per each school day. This broader context and multiple opportunities to observe and interact with the student participant gave the teacher an extended opportunity to get to know the student and allow for better understanding of the youth's behavioral presentation. From the BASC-2 Teacher-Report, the pre/post *t* scores on the Adaptive Skills composite were considered as data points. This composite was of interest as it examines prosocial, desirable behaviors. In addition, pre/post *t* scores on individual adaptive scales, which include Adaptability, Social Skills, Leadership Skills, Study Skills, and Functional Communication, were used in data analysis procedures.

Office discipline referrals. Office discipline referrals data were used as a behavioral indicator of CICO effectiveness. In particular, the frequency of office discipline referrals prior to the start of CICO and during the 8 weeks when CICO was implemented was considered. The school uses the School-wide Information System (SWIS) to collect office discipline referrals data; therefore frequency of referrals was obtained from the SWIS dashboard.

Fidelity of implementation. In addition to the three aforementioned data sources, fidelity of CICO implementation was assessed at random throughout the 8 weeks of the intervention. A fidelity checklist was completed based on direct observations of check-ins, classroom rating times, and check-out procedures. The checklist was designed to assess the presence of key features of the CICO program (Appendix).

Data Analysis Procedures

In this research project, data was analyzed for a pre/post comparison of CICO implementation effectiveness for each student group by conducting an ANCOVA. The analysis focused on determining (1) overall effects of CICO, (2) effects of CICO with identified function of problem behavior, and included (3) follow up univariate analysis for each dependent variable (as determined applicable based on the overall and function-based effects)**.** Data was entered into and analyzed with International Business Machines SPSS Statistics Standard version 22.0 program for Windows (International Business Machines [IBM], 2014).

Nature of Experimental Manipulation

The experimental manipulation in this study was the completion of an FBA for the experimental group prior to participation in CICO. Typically, within the SWPBS framework the identification of an individual student's problem behavior along with the analysis of the function of the problem behavior occurs at Tier 3 or after Tier 2 supports have been implemented with minimal positive outcomes (Gable et al., 2014). Research evidence suggests that positive effects of initial Tier 2 interventions for youth presenting with an internalizing pattern of behavior are minimal (McIntosh et al., 2009). This project sought to explore if introducing a more individualized support strategy (i.e., FBA) had a modifying effect on the outcomes of an initial Tier 2 intervention such as CICO.

For behavioral interventions to be effective, teachers need to have an understanding of a student's behavioral pattern to inform and modify instruction. Students who present with internalizing patterns of behavior are often missed or are not detected early on because of their acting in behavior (Nelson et al., 2008). Once identified, finding the balance between supporting the student by providing positive feedback while the student, for example, presents as withdrawn and avoiding social contact can be difficult for educators. Thus, defining the function of problematic behavior and identifying the behavioral pathway can play a vital role in enhancing the effectiveness of an intervention.

Manipulation of independent variable. The independent variable in this study was the completion of the FACTS with the student's core academic/homeroom teacher. The meeting with the teacher was facilitated by the researcher as a structured-interview.

It was estimated that it would take about 15 minutes to complete the FACTS in this format. By design, the FACTS interview is intended to assist teachers in identifying problem behaviors and the routines and contexts in which the problem behavior is more likely to occur. It is also used as a tool to identify the maintaining function of problem behavior (March, Horner, Lewis Palmer, Brown, Crone, Todd, & Carr, 2000).

For the experimental group in this study, the FACTS was completed prior to the student starting CICO. Completion of the FACTS allowed for analysis of the function of problem behavior prior to implementation of the CICO from the teacher's perspective. In turn, this gave the teacher a keen understanding of the student's behavior pattern from the onset of the student's participation in the CICO intervention. For the control group, the FACTS would have been completed at 8 weeks of CICO intervention if it was deemed by the school's Tier 2 team that the student did not respond to the intervention. The control group FACTS procedures were independent of this project. This is the standard practice at the selected middle school and mirrors typical Tier 2 structure of supports.

The student's placement in the experimental or the control group was used to determine teacher's assignment to the experimental or the control group. For example, if a student was in the experimental group, that student's teacher was also in the experimental group. It was proposed that in the event that a teacher had more than one student in CICO, the researcher would have controlled the students' assignment with that teacher to one group. This purposeful assignment would have been made in an effort to avoid teacher's exposure to both scenarios (experimental and control) and to eliminate potential unintended modification to CICO implementation for the control group.

Instrumentation

FACTS. The FACTS is a two-page interview intended to provide an efficient structure for conducting initial functional behavioral assessment (March et al., 2000). McIntosh et al. (2008) assessed evidence for reliability and validity of the FACTS. Based on results obtained from 10 research studies where the FACTS was used with a total of 41 students in public and private school settings at preschools, elementary, and middle school levels, the researchers demonstrated that FACTS presents with a "strong evidence of test-retest reliability and interobserver agreement" (McIntosh et al., 2008, p. 33). Test-retest reliability for selected sections of the FACTS was determined as follows: setting events .62, antecedents .77, function .92, and total statement .77 (McIntosh et al., 2008). Interrater reliability ranged from .50 to .88, thus suggesting moderate agreement. With respect to validity, McIntosh et al. (2008) demonstrated strong evidence of the FACTS convergent validity with direct observation and functional analysis procedures. Social validity and treatment utility of the instrument were defined by the researchers as "strong, with the vast majority of cases showing significant reductions in problem behavior and high levels of informant satisfaction" (McIntosh et al., 2008, p. 42).

BASC-2. The BASC-2 is a multi-dimensional evaluation system intended to assess observable behavior and self-perceptions of individuals. Assessment components of the BASC-2 include the teacher, parent, and self-report forms. Reported internal-consistencies for composites are .80 to .90 and .60 to .90 for individual scales. Mean test-retest reliabilities for composites range from .70 to .90. For Teacher and Parent forms interrater reliabilities are reported as acceptable (Reynolds & Kamphaus, 2004).

Reynolds and Kamphaus (2004) reported strong evidence of construct validity and concurrent validity of the BASC-2 with other behavior rating systems such as the Achenbach and Conners'.

Threats to Validity

Potential threats to internal validity in this study include history and mortality. Since the intervention took place across a period of 8 weeks, there is the possibility that events that occurred outside of the intervention unduly influenced the outcomes. For example, participants could have been receiving community-based counseling supports simultaneously with the intervention. This presents as a feasible moderating factor of the student's behavior, yet such factors are not considered within the scope of this study. Mortality presents as another threat to internal validity. Participation in this study was voluntary and student participants had the option of dropping out. When this occurred, the outcomes for these participants are unknown. To address this particular threat, the researcher attempted to recruit a large enough sample to account for dropouts.

Identified threats to external validity include interaction of selection and treatment and interaction of selection and setting. With respect to the interaction of selection and treatment, the participants in this study were specifically selected based on their behavioral presentation of acting in, thus generalization of results is limited to groups that present with similar characteristics. The sample of participants was from a single setting, specifically one middle school. As such, generalization to different settings is limited and compromised.

Ethical Procedures

The researcher secured all of the necessary documentation with approval from Walden University's Institutional Review Board (IRB) related to consent and assent for participation prior to recruitment. In addition, a Letter of Cooperation requesting permission from the principal to conduct the research at the school was secured. Data collection for this study begun after approval was granted by Walden University's IRB.

Treatment of data. All data collected for the purpose of this study is confidential and was deidentified prior to scoring, coding, and analysis procedures. This information is stored on the researcher's personal computer and is password protected. The BASC-2 ratings and FACTS were collected for the purpose of this study only. These records are not accessible to and have not become a part of the student's school record. The office discipline referrals data is available to authorized school personnel as it is part of the student's data record used for monitoring student's progress at the school.

Researcher's role. The researcher is employed at the school district. The researcher is part of the SWPBS team and works closely with the Tier 2 team to oversee implementation of secondary interventions. Through verbal and written assent and consent, the researcher ensured that participants and their parents/guardians understood that this study was separate from the researcher's position at the school district. The researcher emphasized that participants invited to take part in this study had the right to participate in the intervention even if they chose not to participate in this study.

Summary

The purpose of this study was to explore if teachers' keen awareness of a student's intended purpose of problem behavior moderates the effectiveness of CICO for youth who present with an internalizing pattern of behavior has a moderating effect. This chapter provided an overview of the methodology of the proposed study and discussed details related to research design, manipulation of the independent variable, protection of rights, and data collection procedures. Chapter 4 will provide detailed findings from the proposed research study.

Chapter 4: Results

The purpose of this research study was to determine if CICO is an effective Tier 2 intervention for students who present with a pattern of internalizing behaviors. Further, the study examined if CICO outcomes are modified when educators become aware of the perceived purpose of a student's problem behavior. The process of an FBA was used to gain an understanding of what reliably predicts and maintains students' internalizing behavior patterns. The practice of conducting an FBA in the school setting plays a vital role in determining the effectiveness of an intervention at the tertiary tier of supports within SWPBS (Gable et al., 2014; Goh & Bambara, 2012). However, there is limited evidence of FBA use at the secondary level of SWPBS with an intervention such as CICO (McIntosh et al., 2009). The current research addressed this gap. It investigated the differential effect on implementation of CICO with and without teachers' awareness about function of problem behavior for middle school students who primarily presented with problematic patterns of internalizing behaviors. Hypotheses posed for this study were as follows:

H_0: There are no differences in the effects of CICO when the intervention is implemented with and without teachers' awareness about function of problem behavior for middle school students who present with a pattern of internalizing behaviors. Levels of problem behavior ratings, prosocial behavior ratings, and disciplinary measures are unaffected.

H_1: There are differences in the effects of CICO when the intervention is implemented with and without teachers' awareness about function of problem behavior

for middle school students who present with a pattern of internalizing behaviors. Levels of problem behavior ratings, prosocial behavior ratings, and disciplinary measures vary.

This chapter first reviews any changes that took place between the proposal of the study and the actual collection of data and subsequent data analysis procedures. The aforementioned discussion of data collection and analysis is followed by an overview of recruitment procedures, a presentation of descriptive and demographic characteristics of the sample, reporting of intervention fidelity measure, with results and summary concluding this chapter.

Changes in Data Analysis Procedures

In its original proposal, data for this research project were to be analyzed for a pre/post comparison of CICO implementation effectiveness for each student group by conducting a repeated-measures MANOVA. Although the minimum proposed number of participants ($n = 6$) for both control and experimental groups was met, the obtained sample size was not sufficient to conduct a MANOVA.

In addition to the small sample size, the number of dependent variables (originally proposed to be three) was erroneous, as it did not include clinical and adaptive scales of the BASC-2 composites. The three originally proposed dependent variables included the Internalizing Problems composite score from the BASC-2 Self Report Internalizing Problems composite, the Adaptive Skills composite score from the BASC-2 Teacher Report, and frequency of Office Discipline Referrals. However, both of the aforementioned composites (Internalizing Problems and Adaptive Skills) have clinical scales that essentially make up the individual composite *t* scores. Specifically,

Internalizing Problems composite has three clinical scales (Anxiety, Depression, and Somatization) and the Adaptive Skills composite has the Adaptability, Social Skills, Leadership Skills, Study Skills, and Functional Communication Skills (a total of 5 adaptive scales) making up the composite. Although *t* scores of these scales were noted as of interest in the proposal, they were not explicitly included in the total number of proposed dependent variables. Inclusion of the *t* scores of these individual clinical and adaptive scales in the analysis increases the number of dependent variables to 11.

Given the constraints of the obtained small sample size and the increase of dependent variables considered, an ANCOVA was selected as a more appropriate alternative for data analysis in this study.

Inclusion of Covariance

The inclusion of covariance was deemed appropriate in the data analysis of this project based on the significant differences found in preintervention scores on the dependent variables between the control and the experimental groups. Field (2013) argued that ANCOVA reduces error variance and it leads to greater experimental control by controlling (and adjusting) the known confounding variable(s).

As presented in Table 1, significant differences between the control and experimental groups were found on 11 dependent variable preintervention scores suggesting that the two groups were different prior to the intervention. 8 out of the 11 dependent variable scores were significant at $p < .01$ and 2 of 11 were significant at $p < .05$. Carroll and Carroll (2015) stated that such differences in groups need to be statistically equated to ensure that the covariate does not erroneously account for

differences on the dependent variable(s). By using ANCOVA, the main effect of the intervention can be analyzed while the original (preintervention differences among the control and experimental groups) are accounted for (Field, 2013).

Table 1

Basis for Inclusion of Covariate

Variables	*F* Ratio	*df*	*p*
Internalizing problems	46.4	1,9	.000**
Anxiety	69.6	1,9	.000**
Depression	40.7	1,9	.000**
Somatization	17.1	1,9	.003**
Adaptive skills	27.3	1,9	.001**
Adaptability	8.37	1,9	.018*
Social skills	31.7	1,9	.000**
Leadership	12.1	1,9	.007**
Study skills	17.5	1,9	.004**
Functional communication	8.82	1,9	.016*
Office discipline referrals	3.32	1,9	.102

Note: *$p < .05$; **$p < .01$; preintervention differences between control and experimental groups

Data Collection Procedures

Changes in Participant Recruitment

It was originally anticipated that participants for this research project would be pre-identified from universal screening data and teacher referrals (both procedures

independent of this study) that were conducted in spring of 2014, with projected implementation of the intervention in fall 2014. Due to unforeseen delays in proposal and IRB approval for this study, the recruitment of participants for this project was based on teacher referrals made after Holiday Recess (post January 5, 2015) and a winter (January 2015) universal screening conducted at the school. As such, the recruitment of pre-identified participants was exclusive to students already attending grades seven and eight (mid-year) as opposed to students transitioning to the respective grade levels at the start of a new school year.

Additionally, based on IRB recommendations, the BASC-2 Self-Report was administered to each participating student individually as opposed to a small group administration. As originally proposed, the researcher was available to clarify any question that the student participants may have had about the rating scale and the content of items on the scale.

Recruitment Procedures and Time Frame

Following IRB preapproved recruitment procedures, parents/guardians of pre-identified students were initially contacted by the researcher via phone. The purpose of the brief phone conversation/voice message was threefold: (1) to provide parents/guardians with a context for receiving a letter of introduction, which extended the opportunity for their child to participate in this research project, (2) informing parents/guardians that their child's participation was voluntary, and (3) to inform parents/guardians that no part (data) of this study would become a part of their child's school record. No consent or indication of potential consent of participation was sought

during these phone conversations; when the researcher left a voice mail, parents/guardians were not asked to call the researcher back. Beyond the initial phone call/voice message, there were no follow up phone calls initiated by the researcher to parents/guardians of prospective participants. The researcher contacted parents/guardians of preidentified participants between January 5, 2015 and March 16, 2015.

For students for whom parental/guardian consent was obtained, the researcher then met individually with each student participant to explain the voluntary nature of the study, what procedures were involved in the study for the student, and to gain informed assent. The period of gaining assent was from January 7, 2015 to March 20, 2015.

Once parental/guardian consent and child assent was obtained for a student participant, the researcher sought to obtain teacher consent for the participating student. Preapproved IRB procedures for gaining teacher consent were followed. The researcher initiated this by placing the Teacher Consent letter in a sealed envelope addressed to the identified teacher and putting the envelope in the teacher's school mailbox. The Teacher Consent letter provided the teacher with information about the study, how to contact the researcher, and how to securely and privately return the consent form. The researcher also provided a self-addressed return envelope with the consent letter. When teacher consent was obtained (teachers had the choice of returning signed consent to the researcher's mailbox or directly to the researcher's office), the researcher provided the teacher with the BASC-2 Teacher Rating scale for the participating student (identifying student and teacher information was be filled out by the researcher on the BASC-2 form) and a self-addressed envelope (for return). This was achieved by putting both in a sealed

envelope addressed to the teacher in the teacher's mailbox at the school with instructions for returning the completed form within 2 school days in a sealed envelope (self-addressed by the researcher) to the researcher's mailbox at the school or directly to the researcher by dropping it off in the researcher's office. The time frame for obtaining teacher consent was from January 9, 2015 to March 22, 2015.

Recruitment Response Rate

Twenty-six students were pre-identified and invited to participate in this project during the time period from January 5, 2015 to March 27, 2015. The end of March was selected as the cut off for recruitment of participants to allow for 8 weeks of participation in the intervention prior to the end of the school year in mid-June. Thirteen parent/guardian consents were received back, a response rate of 50%. For these 13 participants, 100% child assents and teacher consents were obtained (Figure 1). At random, 6 participants were assigned to the control group and 7 to the experimental group from the original participant pool. Postintervention data points for 1 participant (originally assigned to the experimental group) were not available as the student moved during the sixth week of intervention and, therefore, no longer attended the school nor participated in the intervention. As such, a total of 12 students fully participated in this study.

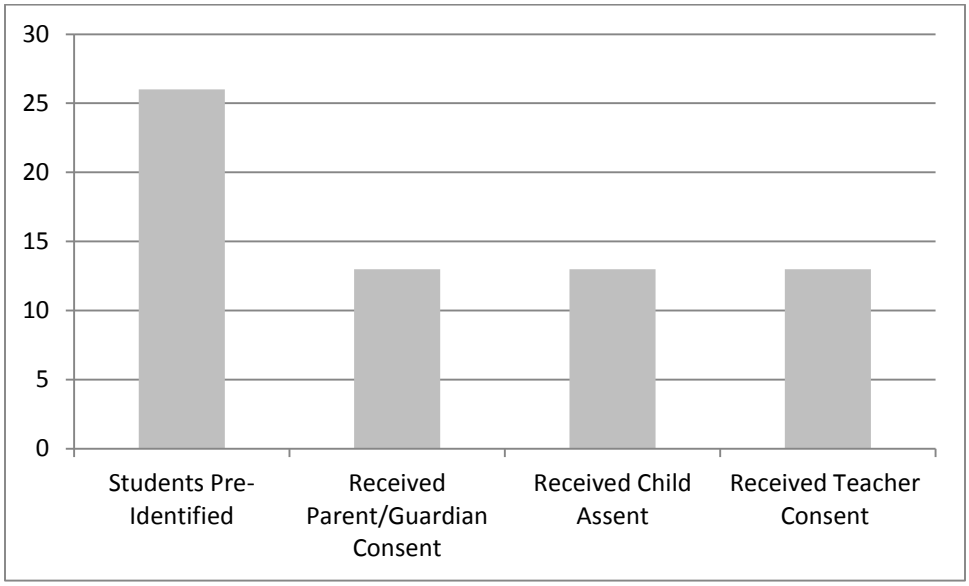

Figure 1. Number (*n*) of students preidentified to participate in intervention and number (*n*) of received parent/guardian consents, child assents, and teacher consents.

Demographic Information

As depicted in Table 2, and illustrated in Figures 2 and 3, 13 students participated in the preimplementation data collection and 12 students in data collected postimplementation. The age range was between 12-years-old to 14-years-old. Out of the 13 (pre) and 12 (post) participants, 54% and 58% (*n* = 7 for both groups), respectively, were between the ages of 13.0-13.6. In the preimplementation group, 23% were in between the ages of 12.7 and 12.11 (*n* = 3) and 15% were between 13.7 and 14-years old (*n* = 2). In the postimplementation group, 25% of participants were in the 13.7-14.2 age range (*n* = 3), and 1 participant (accounting for 8% of the sample) was between 12.7 and 12.11 years old. One participant (8%) was in the age group between 12.0 and 12.6 during the pre and the postimplementation data collection phase.

Demographic breakdown for sex and race for preimplementation and postimplementation was as follows: male participants accounted for 77% (*n* = 10) preimplementation and 83% (*n* = 10) post implantation. Twenty-three percent (*n* = 3) preimplementation and 25% (*n* = 2) were female. Seventy-seven percent (*n* = 10) of participants were in grade seven and 23% (*n* = 3) were in grade eight during preimplementation; 75% (*n* = 9) were seventh grade students and 25% (*n* = 3) were eighth grade students at postimplementation data collection. Reported race in school records for all participants (*n* = 13) was white.

Table 2

Demographic Information for Sample Size

Preimplementation (*n* = 13)		Postimplementation (*n* = 12)	
	n (%)		*n* (%)
Age			
12.0–12.6	1 (8)	12.0–12.6	1 (8)
12.7–12.11	3 (23)	12.7–12.11	1 (8)
13.0–13.6	7 (54)	13.0–13.6	7 (58)
13.7–14.0	2 (15)	13.7–14.2	3 (25)
Gender			
Male	10 (77)	Male	10 (83)
Female	3 (23)	Female	2 (17)
Grade			
7	10 (77)	7	9 (75)
8	3 (23)	8	3 (25)

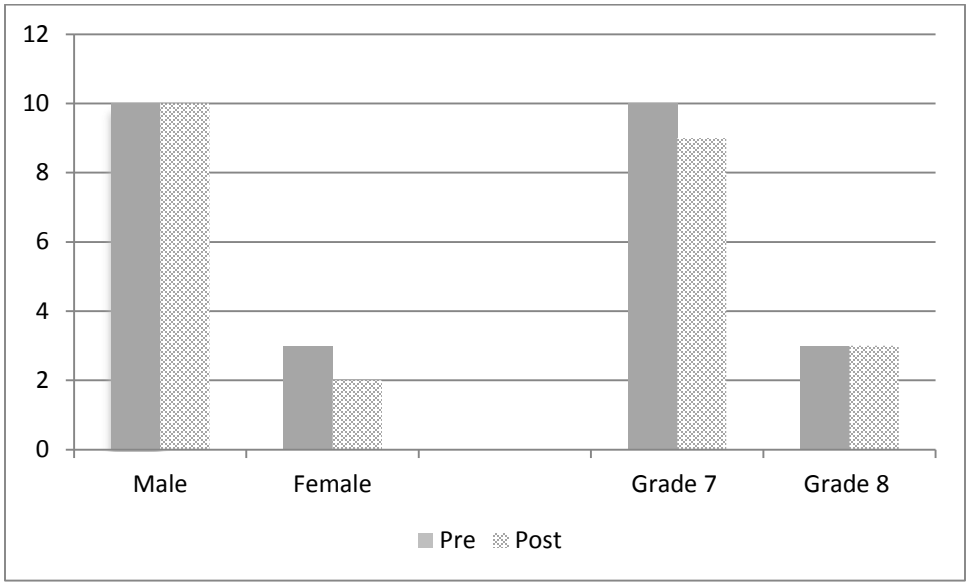

Figure 2. Sex and grade level demographics.

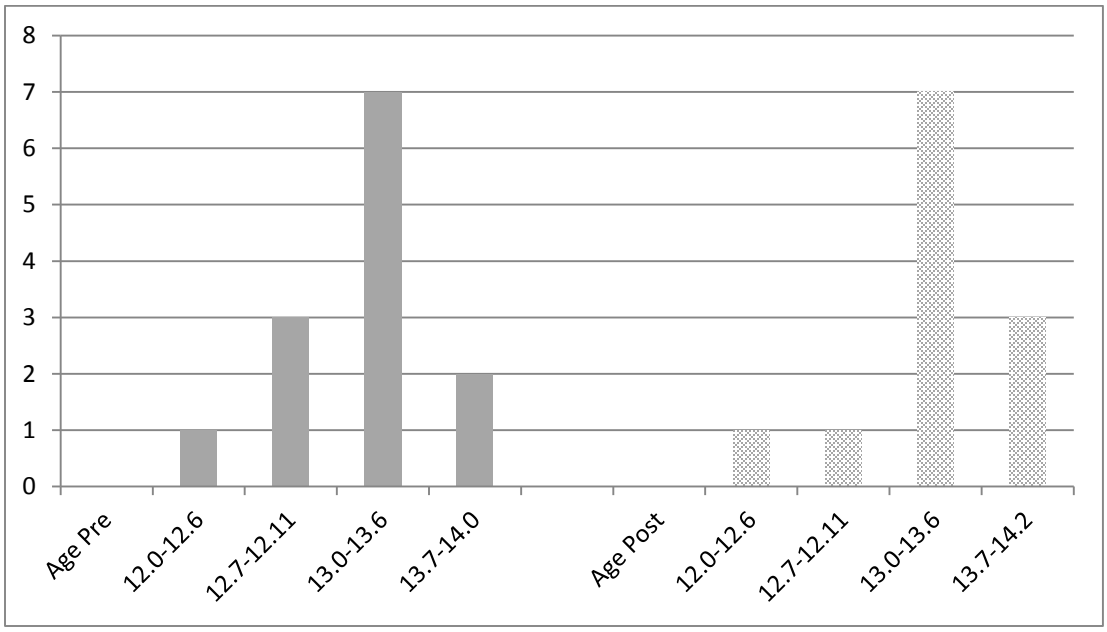

Figure 3. Age of participants (pre- and postimplementation; n = 13 and n = 12, respectively).

External Validity of Sample

The sample of participants in this study was not entirely proportional to the larger population of the school from which the sample was drawn. Gender and race of participants represent the most notable disproportionality. Males account for 52% of the school's population and females make up 48% of the student body (NCES, 2014). In the obtained sample of participants, males made up 83% of the sample and females represented 17%. All participants (100%) in this study identified their race as White. A similar trend in disproportionality was noted with regard to grade level of participants. With the exclusion of sixth grade students from the school's population, grades seven and eight equally account for the remaining student body (50% of each grade level). In this research sample, seventh grade students accounted for 75% of the sample and 25% were representative of the eighth grade.

The chronological age of participants is representative of students attending grades seven and eight in the school. Per the Department of Education of the state where the school is located, the early education law projects that students who are 12:0 on September 30th of a given school year would attend grade seven and those turning 13:0 on September 30th of a given school year would attend grade eight, unless extenuating circumstances such as retention took place in the student's schooling (Ewen, 2012). All of the participants in this study fell within the projected chronological age range for their respective grade level, with majority (54% at preimplementation and 58% at postimplementation) being in the range from 13:0 to 13:6.

Treatment and Intervention Fidelity

Data Collection Events

Data collection for this study was uneventful. There were no instances of psychological harm or unusual circumstances reported to the researcher that were directly or indirectly related to the study by student participants, parents, or teacher respondents.

Intervention Fidelity

Fidelity of implementation of the CICO program was measured at two random points for each participant during the 8-weeks of intervention. Per preapproved IRB protocol, the researcher completed the CICO Fidelity checklist (Appendix) by observing CICO implementation for each student. This was done through a single-blind observation. The student, CICO coordinator, and the teacher were not made aware of the researcher's observations at the time the observations were conducted. Informed consent/assent for these observations was obtained when participants at the onset of their participation in the study granted consent/assent.

The fidelity checklists were completed based on direct, unannounced observations of check-ins, classroom rating times, and checkout procedures on a given day. The checklist was designed to assess the presence of key features (13 total) of the CICO program. The mean percentage of observed critical CICO features in place was as follows: for the experimental group it was 91% (range = 77% to 100%) and for the control group it was 89% (range = 77% to 100%). The mean percentage of observed critical CICO features for both groups was 90% (range = 89% to 91%), indicating high levels of implementation fidelity of the CICO program.

Levels of Significance of BASC-2 *t* scores

The BASC-2 is a norm-referenced, standardized behavioral assessment. Results in the form of *t* scores are obtained for composites and individual scales when the protocols are scored. Reynolds and Kamphaus (2004) proposed the following qualitative descriptions of levels of significance (see Table 3). On the clinical composites and scales, *t* scores from 41 to 59 should be considered as average. Scores from 60 to 69 present as being in the at risk range and represent areas that may need further monitoring, and scores falling at 70 and above suggest high levels of maladjustment. On the adaptive composite and corresponding scales, higher scores denote more positive (desired) behaviors. As such, scores from 41 to 59 are considered average, scores that fall between 31 and 40 are in the at risk range, while scores of 30 and below are in the clinically significant range (Reynolds & Kamphaus, 2004).

Computer software, the BASC-2 ASSIST^{TM} (version 1.3) was used by the researcher to score the self-report and teacher protocols. Norm group selected for all protocols was the General – Combined Sex Norm Group.

Table 3

Levels of Significance of BASC-2 t scores

	t score range	Qualitative Description of Significance
Clinical Composites & Scales		
	41 - 59	average
	60 – 69	at risk
	70 and above	clinically significant
Adaptive Composite & Scales		
	41 - 59	average
	31 - 40	at risk
	30 and below	clinically significant

Results

The statistical analysis used in this research project was ANCOVA repeated across time (pre- and postintervention), with the preintervention scores being the covariate. Data was coded and analyzed by using the International Business Machines SPSS Statistics Standard version 22.0 program for Windows (International Business Machines [IBM], 2014). Results of the data analyses in provided in Table 4. As shown in Table 4, there were two significant effects found. There was a significant effect on the student self-report Anxiety scale at the $p < .01$ level [$F(1,9) = 18.1$, $p = 0.002$]. Self-reported symptoms on the Anxiety clinical scale were found to be significantly lower postimplementation for the control group ($M = 53.5$) as compared to the experimental group ($M = 54.7$). However, the obtained mean scores for both groups fell within what is considered the average range on the BASC-2 clinical scales (see Table 3).

Table 4

Analysis of Covariance Procedures for Dependent Variables

	Control		Experimental				
Variables	*M*	*SD*	*M*	*SD*	*F* Ratio	*df*	*p*
Internalizing problems	52.7	5.47	54.5	9.33	2.31	1,9	.16
Anxiety	53.5	9.18	54.7	8.33	18.1	1,9	.002**
Depression	53.7	8.66	48.8	5.42	4.84	1,9	.06
Somatization	45.67	5.85	57.33	16.9	2.67	1,9	.14
Adaptive skills	38.0	4.60	41.33	7.06	2.80	1,9	.13
Adaptability	47.3	6.35	44.2	6.40	.035	1,9	.86
Social skills	39.0	6.78	39.7	11.1	.051	1,9	.83
Leadership	38.0	3.52	39.3	7.50	.066	1,9	.80
Study skills	35.0	6.54	38.8	8.80	0.44	1,9	.52
Functional communication	38.0	7.12	49.0	6.78	10.7	1,9	.01**
Office discipline referrals	0.83	1.33	1.17	0.98	.014	1,9	.91

Note: $^{**}p < .01$

The other significant effect found was on the teacher report adaptive scale of Functional Communication. On this scale there was a significant effect at the $p < .01$ [$F(1,9) = 10.7$, $p = 0.01$]. Adaptive skills associated with functional communication were found to be significantly higher for the experimental group ($M = 49.0$) as compared to the control group ($M = 38.0$). Following the conventional qualitative descriptions of BASC-2 adaptive scores presented in Table 3, the obtained mean for the control group falls within

the at risk range, whereas the mean for the experimental group falls within the average range suggesting age-appropriate skills.

Additional Analysis

Paired sample *t* tests were conducted and further analyzed for the control and experimental groups to compare preintervention and postintervention scores for each group. Tables 5 and 6 display results for control and experimental groups, respectively.

Significant differences were noted at the $p < .05$ level on the Internalizing Problems composite for both groups (control group t (5) = 3.03, p = .02; experimental group t (5) = 3.82, p = .01). On the Anxiety scale, the results for the experimental group indicated that the preimplementation mean (M = 70.2, SD = 5.91) was significantly greater than the postimplementation mean (M = 54.7, SD = 5.91). A similar pattern was noted for the control group with preimplementation anxiety mean (M = 61.5, SD = 5.56) being significantly greater than the postimplementation mean (M = 53.5, SD = 9.18). For both the experimental and the control groups the CICO intervention significantly lowered reported symptoms of anxiety $p < .01$ level of significance (experimental group t (5) = 10.0, p =.000; control group t (5) = 7.11, p = .001). There was also a significance difference for the experimental group on the Depression scale at $p < .05$ level of significance, t (5) = 3.04, p = .03. Both the Depression and the Somatization scales were significantly different for the control group, t (5) = 2.64, p = .05 and t (5) = 2.58, p = .05, respectively. There was no significant difference noted on the Somatization scale for experimental group.

The Adaptive Skills composite and the Adaptability scale for the experimental group showed significant differences in improvement of skills (Adaptive Skills composite, t (5) = 4.78, p = .01; Adaptability scale, t (5) = 4.72, p = .01). The Control group had no significant differences on the Adaptive Skills composite and on the Adaptability scale. Similarly, neither group showed significant improvement on the Social Skills scale, the Leadership, the Study Skills scale, and the Functional Communication scale in pre-postimplementation comparison.

Table 5

Paired Samples Statistics for Dependent Variables – Control Group

	Preimplementation		Postimplementation				
Variables	*M*	*SD*	*M*	*SD*	*t*	*df*	*p*
Internalizing problems	56.7	7.63	52.7	5.47	3.03	5	.02*
Anxiety	61.5	7.56	53.5	9.18	7.11	5	.001**
Depression	57.8	11.1	53.7	8.66	2.64	5	.05*
Somatization	55.7	8.50	45.7	5.85	2.58	5	.05*
Adaptive skills	36.8	5.63	38.0	4.60	0.78	5	.47
Adaptability	42.7	6.25	47.3	6.34	1.67	5	.16
Social skills	38.3	6.98	39.0	6.78	.35	5	.74
Leadership	35.5	3.15	38.0	3.52	2.03	5	.10
Study skills	33.2	3.31	35.0	6.54	0.85	5	.43
Functional communication	42.0	7.12	38.0	7.12	2.17	5	.08
Office discipline referrals	0.50	0.53	1.17	0.83	0.60	5	.58

Note: *p < .05; **p < .01

Table 6

Paired Samples Statistics for Dependent Variables – Experimental Group

	Preimplementation		Postimplementation				
Variables	*M*	*SD*	*M*	*SD*	*t*	*df*	*p*
Internalizing problems	64.2	12.1	54.5	9.33	3.82	5	.01*
Anxiety	70.2	5.91	54.7	8.33	10.0	5	.000**
Depression	56.7	10.4	48.8	5.41	3.04	5	.03*
Somatization	60.8	16.1	57.3	16.9	1.47	5	.20
Adaptive skills	37.2	5.49	41.3	7.06	4.78	5	.01*
Adaptability	38.5	7.73	44.2	6.40	4.72	5	.01*
Social skills	39.7	9.89	39.7	11.1	0.00	5	1.0
Leadership	36.2	4.75	39.3	7.50	1.71	5	.15
Study skills	34.8	6.91	38.8	8.76	2.24	5	.08
Functional communication	43.7	7.81	49.0	6.78	2.02	5	.10
Office discipline referrals	1.00	0.89	1.17	0.98	1.00	5	.36

Note: $*p < .05$; $**p < .01$

Summary

In a review of data analysis of the Analysis of Covariance, the results of this research indicated that the null hypothesis should be rejected for problem behavior ratings of anxiety and prosocial behavior rating of functional communication. The null hypothesis should be accepted for disciplinary measures.

H_0: There are no differences in the effects of CICO when the intervention is implemented with and without teachers' awareness about function of problem behavior for middle school students who present with a pattern of internalizing behaviors.

Levels of problem behavior ratings of anxiety, prosocial behavior ratings of functional communication are unaffected is rejected.

Levels of disciplinary measures are unaffected is accepted.

The study found a significant improvement in self-reported symptoms on the anxiety scale and skills assessed by the functional communication scale on the BASC-2 when differences in groups were statistically equated. Further analysis of results indicated significant improvement on the Internalizing Problems composite and individual clinical scales for both groups. For the experimental group, significant improvement was noted on the Adaptive Skills composite and the Adaptability scale on preimplementation and postimplementation measures. Further in-depth discussion of findings and interpretation of results is presented in Chapter 5 along with recommendations for future research and a discussion of positive social change that the results of this study imply.

Chapter 5: Discussion, Conclusions, and Recommendations

This research project was designed to investigate the implications of conducting an FBA at the onset of a student's participation in CICO, an evidence-based Tier 2 intervention. Significant amount of research reviewed for this study focused on establishing FBAs and CICO as common practices within the SWPBS framework. Although the effectiveness of CICO has been established (e.g., Campbell & Anderson, 2008; Campbell & Anderson, 2011; Simonsen et al., 2010; Todd, Campbell, Meyer, & Horner, 2008), there continues to be a limited research base on the intervention's efficacy for students who present with at risk levels of internalizing patterns of behavior (Hunter et al., 2013). Further, there is no research examining the effect of conducting an FBA at the onset of the CICO intervention (Swoszowski, Jolivette, Fredrick, & Heflin, 2012; Swoszowski, 2013).

Historically, the primary purpose of an FBA was to inform the development of an individual behavior support plan as part of Tier 3 supports (Fairbanks, Sugai, Guardino, & Lathrop, 2007; March & Horner, 2002; Sugai et al., 2000). Within the SWPBS framework, the tertiary level represents intensive and highly individualized supports (Horner et al., 2005; Sugai & Horner, 2006), whereas Tier 2 supports includes targeted, group-based interventions that focus on early identification and prevention of exacerbation of problematic behaviors (Hawken & Hess, 2006; Horner et al., 2005). Therefore, the current research investigated the effectiveness of CICO for students who presented with internalizing patterns of behavior and explored the potential of a modifying effect of conducting an FBA at the onset of student's participation in CICO.

Findings from this study indicate that CICO was an effective intervention for students presenting with a pattern of internalizing behaviors. For participants in the experimental group, a significant effect was found on an adaptive skill measure, specifically functional communication. A more detailed review of results obtained from this research project follows along with interpretation of how the findings relate to further knowledge in the field. Limitations, recommendations, and social change implications are presented prior to conclusion.

Interpretation of Findings

CICO and Internalizing Patterns of Behavior

Bandura's (1986) social cognitive theory proposed that human behavior stems from an interaction of personal factors, behavior, and the environment. One's thoughts, beliefs, and cognitive competencies also play a significant role in the development of one's behaviors. Further, the theory illustrates how social environment could play a contributing role in the development of internalizing patterns of problem behaviors in youth as well as how established behavior patterns can be modified through interpersonal milieus. The CICO intervention incorporates social influences (e.g., frequent, positive feedback from adults) and motivation (e.g., earned points on daily sheet). Bandura (1991, 2001) also stipulated that one's functional consciousness and the ability to self-regulate are essential in modifying behavior. By targeting and specifically reinforcing desired behaviors, the routine and structured processes of CICO present as effective modifying factors for the youths' desirable behavioral shifting. Findings of this research project add to the already established research base that CICO is an effective intervention (Campbell

& Anderson, 2011; Crone et al., 2010; Simonsen et al., 2010). Results of this study also echo the preliminary evidence presented by Hunter et al. (2013) that CICO can be an effective intervention for students presenting with internalizing behavioral needs.

The aforementioned positive effect of CICO in this study was indicated by a decrease in students' self-assessment of reported symptoms of internalizing patterns postintervention for both the control and the experimental group. Internalizing problems among youth are associated with social withdrawal, somatic problems, anxiety, and depression (Merrell, 2013; Stormont et al., 2012). Although the ratings on the Anxiety clinical scale of the BASC-2 Self-Report were found to be significantly lower postimplementation for the control group (see Chapter 4 ANCOVA analysis), the obtained mean scores for both groups (control and experimental) postimplementation fell within what is considered the average range on the BASC-2 clinical scales. The symptomatic behaviors assessed on the Anxiety scale include "excessive worry…fears and phobia, self-deprecation (e.g., "I'm not very good at this"), and nervousness (Reynolds & Kamphaus, 2004, p. 61).

Based on teachers' BASC-2 ratings, a significant effect was found on the adaptive scale of Functional Communication (see Chapter 4 ANCOVA analysis). Adaptive skills associated with functional communication were found to be significantly higher for the experimental group as compared to the control group. Reynolds and Kamphaus (2004) described behaviors assessed on this adaptive scale as basic and advanced expressive, receptive, and written communication skills. In essence, the Functional Communication

scale is designed to assess the student's ability to communicate clearly and effectively with others (Reynolds & Kamphaus, 2004).

Based on findings from within group analysis, statistically significant differences were noted for both groups of participants on the overall Internalizing Problems composite. Additionally, postimplementation results on clinical scales of Anxiety and Depression for the experimental group were significantly lower. This indicates that postintervention students reported experiencing symptoms associated with anxiety (e.g., excessive worry, fears, nervousness) and depression (e.g., dysphoric mood, withdrawal from others) to a lesser degree. The same pattern was noted on these two clinical scales for the control group. In addition, the Somatization clinical scale, which assesses one's propensity to excessively complain of insignificant ailments (e.g., headaches) (Reynolds & Kamphaus, 2004) presented a notable difference for the control group postimplementation.

Differential Effect of FBA

The experimental group showed improvements in functional communication (between groups analysis) and significant improvements on the Adaptive Skills composite and the Adaptability scale (within group analysis). Within group analysis of BASC-2 Teacher Report scores showed two significant effects for the experimental group, but none for the control group. Specifically, the Adaptive Skills composite and the Adaptability scale showed notable improvements. The Adaptive Skills composite is designed to be a measure of emotional expression and control as well as other adaptive skills (Reynolds & Kamphaus, 2004). The Adaptability scale specifically focuses on the

assessment of one's ability to readily adapt to changes in pre-established school and/or classroom routines (Reynolds & Kamphaus, 2004).

Based on the design of the study, the changes observed in the experimental group are attributed to the completion of an FBA with the student's teacher at the onset of the CICO intervention. However, it is not clear whether the students' functional communication and adaptive skills actually improved or whether the teacher's deeper understanding of the student's at risk behaviors influenced the postimplementation ratings on the BASC-2 Teacher Report.

The Role of Teacher's Attention

In considering the characteristics of internalizing behaviors, adolescents who present as socially withdrawn and/or with inhibited behavior often do not actively seek out attention from teachers (Merrell, 2013). This passive presentation however, does not necessarily equate to avoidance or escape from attention. On the contrary, for students who internalize, receiving teacher attention through specific, positive feedback at frequent intervals challenges the common cognitive characteristics of symptoms associated with anxiety and depression. CBT reasoning suggests that the aforementioned features of CICO allow for cognitive and behavioral shifting to enable the experience of positive rewards from the environment (Miller et al., 2012).

Limitations of the Study

This research project was limited in size and location. The selection of participants from one middle school that was relatively large (total student population of 1000), yielded a small sample size. As such, the results should be viewed more so as a

pilot investigation rather than conclusive findings. Since generalizability of findings is limited, this study can potentially serve as a preview of future research that further investigates the effect of conducting FBAs within Tier 2 supports.

Another limiting factor of this study was the use of office discipline referrals. It was assumed that all data captured and reported in SWIS was accurately reported with respect to frequency of incidents (incident type and perceived function of behavior were not considered as data points in this study).

The potential presence of unknown variables needs to be acknowledged so that current findings are not mistakenly applied to other populations. As recognized in Chapter 1, identification and control for all of the variables that may have influenced individual students' outcomes during their participation in CICO was not attempted. Aspects that could have contributed to changes in behavior (e.g., individual youth could have received community-based counseling supports) were not considered. In addition, the study did not include a measure (e.g., survey) of whether or not students found the intervention reinforcing. Although the study did include a fidelity of implementation measure, individual differences among CICO coordinators and teachers in how CICO was implemented was not considered. Finally, it is also vital to consider the fact that the identification of relationships among variables does not imply causal relationships (Bewick, Cheek, & Ball, 2003).

Recommendations

As discussed earlier in this chapter, the findings of this study suggest a modifying effect of conducting a FBA. Future research may choose to assess the implications of

conducting an FBA on the teacher's perceptions and explore the potential changes in how an intervention such as CICO is delivered. Determining if there is an actual versus perceived improvement in a specific area of students' skills is another research avenue in need of further investigation.

Sustained Effects of Intervention

This research project did not measure maintenance of treatment effects. Mitchell et al., (2011) documented that there is lack of research documenting sustained positive effects of CICO. Gaining insight from future research on sustained effects could lead to further improvements in design and implementation of the CICO intervention.

Office Discipline Referrals as an At-Risk Indicator

Office discipline referrals were included as a data point in this research project. Office discipline referrals are generally used as a data source in research that focuses on measuring effectiveness of SWPBS supports in schools (Bradshaw et al., 2010; Horner et al., 2009). Office discipline referral rates, frequency, and descriptions of behaviors are common variations of how this type of data is typically used in studies (Mitchell, Stormont, & Gage, 2011).

Office discipline referrals in this research project did not present as significantly effecting the intervention for the selected population. Despite limitations of generalizability of the study, caution should be exercised in using office discipline referrals as an exclusive measure of the effectiveness of an intervention for students who present with at risk patterns of internalizing behaviors. The inhibited behavioral presentation of students who internalize may not call for disciplinary actions. Therefore,

the use of office discipline referrals as an indicator of at risk behavior may not be a reliable data source for assessing developing patterns of internalizing behaviors early on.

Implications for Social Change

Results from the study point out recommendations for practice in design and implementation of Tier 2 supports. By design, critical features of Tier 2 supports include efficiency, sustainability, and ongoing monitoring of student's progress (Crone et al., 2010). Monitoring of progress often includes low or no-cost measures such as office discipline referrals, quantitative teacher progress reports, academic grades. Seldom, if at all, is student self-rating used as a progress-monitoring tool. In considering features of internalizing patterns, standard data points (e.g., office discipline referrals) may not illustrate the student as benefiting from the intervention. As such, the intervention may be deemed as not appropriate for the student and may be ended prematurely. In this study, if findings based on office discipline referrals were the only data point considered, the aforementioned would be a logical conclusion. However, when self-reporting is taken into account, the opposite conclusion can be made.

In addition, the previously noted pre/postimplementation differences and effects are not only statistically significant, but also have practical applications when considering the effects of Tier 2 interventions and practices. For example, the improvement in reported symptoms of anxiety, on average, was 15.5 points lower on the Anxiety scale for the experimental group postimplementation; for the control group, on average, the scale score was lower by 8.0 points.

Considering the qualitative descriptions assigned to BASC-2 *t* scores (see Table 3), the experimental group average score was in the clinically significant range at preintervention and it fell in the average range postintervention. Similarly, the control group preintervention average score was in the at risk range, while the postintervention mean score fell in the average range. For students who present with internalizing patterns of behavior, highlighting and considering individual student progress as reported through the youth's self-assessment measure(s) should be included as a standard source of data at initial screening and ongoing monitoring.

Although the findings of this study do not provide a conclusive understanding of what led to the effects found in the experimental group (actual skill improvement versus change in teacher perception), the outcomes of the CICO intervention from the students' reported self-assessment show desirable changes on the participant's perceptions and reported feelings of internalizing patterns. At first glance, one might be tempted to conclude that the completion of an FBA is not necessarily of benefit to the student. However, the purpose of completing an FBA is to enhance teacher's understanding of a student's behavioral pattern and perceived motivations. This in turn can lead to improvements and adjustments in implementation of CICO as well as sustained implementation of the intervention.

Conclusion

Youth presenting with elevated internalizing patterns of behavior in early adolescence are at risk for challenges across school, community, and home settings. Personal well-being, teacher acceptance, social adjustment, poor self-concept, and

compromised academic achievement are some aspects that are negatively effected for this population (Marchant et al., 2007; Nelson et al., 2008). If these challenges are not properly addressed in early onset, significant levels of maladjustment are likely to develop and be present in adulthood (Stormont et al., 2012).

As difficult as it may be to detect at risk levels of internalizing patterns early on, it is both a priority and a necessity that schools, community partners, and parents are mindful of recognizing them and properly address identified internalizing needs in youth. At first glance, the hidden nature of the youth's struggles may seem that they are not interested in engaging with others. It is precisely this indifferent presentation that needs to be challenged through the experience of positive rewards from the environment, social modeling, and social influences. CICO presents as an efficient and effective intervention to accomplish this in the school setting. Potential modifications in implementation of CICO features for youth who internalize can be further identified and considered by educators through the process of an FBA.

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Appendix: Check In/Check Out Fidelity Checklist

Student: _____ Date: _____

Time	CICO Responsibilities	Observed
AM Check In	Student checked in with CICO Coordinator	Yes No
	CICO Coordinator provided student with daily CICO sheet	Yes No
	CICO Coordinator provided positive prompt related to student having a successful day	Yes No
Classroom	As student entered classroom teacher greeted the student at the door	Yes No
	Upon entering classroom, student placed CICO sheet in designated area	Yes No
	At the end of class, teacher assigned points to student	Yes No
	Teacher provided verbal positive feedback regarding students overall behavior	Yes No
	Teacher provided encouragement to student to work on a specific behavior	Yes No
PM Check Out	Student checked out with CICO Coordinator	Yes No
	Student presented completed CICO sheet to CICO Coordinator	Yes No
	CICO Coordinator provided positive verbal feedback about student's day (based on points earned)	Yes No
	CICO Coordinator solicited student's reflection of how the day went	Yes No
	CICO Coordinator positively reminded the student about morning check in on the following school day	Yes No

Number of Yes/ Total Number of Yes & No: ___/_13_ = ___ * 100 = ___%