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An Evaluation on the Effects of Check-In/Check-Out with School-aged Children Residing in a Mental Health Treatment Facility

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An Evaluation on the Effects of Check-In/Check-Out with School-aged Children Residing in a Mental Health Treatment Facility

by

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Table of Contents

List of Figures

Abstract

School-Wide Positive Behavior Interventions and Support (SWPBIS) is an evidence-based application of Applied Behavior Analysis (ABA) to address and prevent problem behaviors from occurring, promote pro-social behaviors, and create a positive learning environment for all students. There are many secondary interventions that have been utilized within the framework of SWPBIS that have high success rates. However, the research conducted on the use of Check-In/Check-Out (CICO), a secondary intervention, has focused its attention more on its effectiveness in public elementary schools. There is a lack of research evaluating the effectiveness of CICO in alternative school settings. This study provides an extension to the literature by examining the effects of the CICO program with school-aged children residing in a mental health treatment facility. Using a concurrent multiple baseline across participants design, students were exposed to a CICO intervention strategy in which problem behaviors were targeted for reduction and academic engagement was targeted for acquisition. All three students showed substantial decreases in problem behavior and increases in academic engagement when the CICO intervention was in place.

Chapter One:

Introduction

School violence, bullying, and noncompliance are prevalent in the school system and are negatively affecting the learning environment and school climate (Anderson & Kincaid, 2005). Many children as young as preschool age come into schools exhibiting aggressive or challenging behaviors. A majority of the time these aggressive and challenging behaviors will diminish over time and the teachers are able to redirect the children to more appropriate behaviors (Fox & Clarke, 2006). Some children display challenging behavior at a higher frequency and intensity to the point where the teacher is not able to redirect the child. These on-sets of challenging and aggressive behaviors are a precursor to long-term difficulties not only in school but at home and in the community (Fox, Dunlap, & Powell, 2002). The populations that are at a higher risk for these types of behaviors are children diagnosed with developmental disabilities and children from urban environments (Fox et al., 2002; Hieneman et al., 1999).

There is a need for comprehensive services to address child problem behaviors, as well as, to address the needs of families because it is important to not only improve the quality of life for the individual but also the quality of life for those who support the individual (Smith-Bird & Turnbull, 2005; Carr et al., 2002). Positive behavior support (PBS) is an application of Applied Behavior Analysis (ABA) that assesses the behaviors and provides services that uniquely fit the individual's family unit (Fox & Clarke, 2006; Fox et al., 2002). Also, School-Wide Positive Behavior Interventions and Support (SWPBIS) is an evidence-based application of ABA that is able to address and prevent problem behaviors from occurring and promote pro-social behaviors

and create a positive learning environment for all students (Anderson & Kincaid, 2005; Anderson & Spaulding, 2007).

Positive Behavior Support (PBS) is an applied science with the goal of enhancing the individual's quality of life and minimizing his or her problem behaviors using methods of education and system method changes within the environment to expand the child's behavior repertoire (Carr et al., 2002). PBS integrates the technical features of applied behavior analysis, person-centered values, and the normalization and inclusion movement to develop its model. Behavior analysis practices, such as functional assessments, stimulus control, establishing operations, and shaping and fading procedures to increase appropriate behaviors are all major contributors to PBS. Also, many of the PBS principles assess the child's values and needs to help improve quality of life and receive equal opportunities and respect from society (Carr et al., 2002; Hieneman et al., 1999). Unlike other behavior analytic approaches, PBS emphasizes the importance of prevention strategies of problem behaviors and focuses on system changes to help decrease problem behaviors and increase more appropriate behaviors. One application of PBS approach includes four main steps- creating a team, conducting a functional assessment, brainstorming the behavior support plan, and implementing the behavior support plan (Fox & Clarke, 2006; Hieneman et al., 1999). School-wide positive behavior interventions and support (SW-PBIS) is an expansion of the PBS model but is a universal system to help prevent problem behaviors and promote appropriate behaviors at a school-wide level.

When dealing with discipline and problem behaviors, schools often tend to use a reactive-approach through implementing consequences after the problem behavior has already occurred (Anderson & Kincaid, 2005). This can be in the form of office referrals, detention, and suspension from school. Even though the consequences have an immediate affect and stop the

problem behavior at that specific moment, these methods do not typically prevent the problem behavior from occurring again in the future. Using reactive-approaches can actually inadvertently reinforce problem behavior, by escaping a task or getting one-on-one attention from administration (Anderson & Kincaid, 2005). Therefore, there has been a call for more comprehensive school-wide programs to address and prevent problem behaviors from occurring and to subsequently promote pro-social behaviors to occur instead (Anderson & Kincaid, 2005).

SW-PBIS is an evidence-based prevention strategy that seeks to enhance academic performance, increase safety, decrease problem behavior and establish positive school cultures by creating and sustaining a three-tier system of support (Bradshaw, Mitchell & Leaf, 2010; Kincaid, Childs, Blasé & Wallace, 2007). According to Kincaid et al. (2007), changing the school environment and the procedures to promote positive interactions from school staff will then alter the student's behavior in a positive way. This is accomplished through data management, leadership and training, providing reinforcement systems and minimizing consequences. The SWPBIS approach is implemented in three levels of support: universal support, targeted support, and individual/intensive support. The universal level of support, which is effective for 80-90% of the school population (Lindsey & White, 2009), is considered the framework for SW-PBIS in which the targeted and more individualized supports can be implemented. Its goals are to prevent the development of new problem behaviors, eliminate or decrease existing discipline problems and behaviors, and to increase pro-social behaviors for all students (Anderson & Kincaid, 2005).

Targeted supports are specially designed for groups of students who are at high risk of discipline problems and school failure and exhibit poor social skills and challenging family situation and who are not responding with only Tier 1 supports (Anderson & Kincaid, 2005;

Lindsey & White, 2008). Many of the students who are referred to this level of intervention have multiple office referrals, detention, low academic scores and a poor attendance record. Tier 2 interventions are the least researched intervention compared to the universal and individualized interventions (McIntosh, Campbell, Carter, & Dickey, 2009) and 5-10% of the school population may need this level of support to be successful in school (Lindsey & White, 2009). Individual or intensive support, which 1-5% of the school population may need to be successful in school (Lindsey & White, 2009), are for students whose behavior does not respond to the universal or the targeted interventions provided beforehand (Anderson & Kincaid, 2005). The tier 3 intervention is designed to meet the unique academic and behavioral needs of the student which include wraparound planning, a process that is based on the student's strengths and needs across their home, school and the community (Lindsey & White, 2009).

Check-in/Check-out (CICO) is a Tier 2 multicomponent intervention based on a simple strategy for increasing ongoing structure and feedback for at-risk students to decrease problem behavior and increase pro-social behavior through direct behavior ratings of student performance (McIntosh et al., 2009; Todd, Campbell, Meyer, & Horner, 2008). This intervention is usually implemented with students who exhibit non-dangerous problem behaviors during academic routines (Campbell & Anderson, 2011). CICO is designed to add structure to the school day, provide a formal mechanism for students to receive feedback on their behavior, cultivate a relationship with an adult member in the school, and receive reinforcement for desired behaviors and home-school daily rating cards (Campbell & Anderson, 2011; McIntosh et al., 2009; Todd et al., 2008).

During the check-in component, the student meets with a mentor in the morning before school begins to receive their rating card along with positive interaction and pre-correction and

encouragement for the start of the day (McIntosh et al., 2009; Todd et al., 2008). Throughout the day the student receives prompts for acceptable behavior, feedback, and in-classroom ratings from the teacher on their behavior in predefined positive expectations (school-wide expectations). During the check-out procedure the student meets up with his or her mentor at the end of the school day to review his or her behavioral performance (McIntosh et al., 2009). The student totals the amount of points earned for the day which he or she can put towards earning tangibles, social privileges and/or lunch with the mentor. The rating card is sent home with the student for the parent or guardian to sign (McIntosh et al., 2009).

CICO has been shown to be effective in decreasing problem behaviors and increasing academic engagement time for students (McIntosh et al., 2009). In some cases, CICO has shown better results with students whose behavior is maintained by adult attention than students whose behavior functions as peer attention or escape from aversive stimuli (Campbell & Anderson, 2011; Simonsen, Myers & Briere III, 2011). Overall, the intervention increases predictability, sets the occasion for appropriate behavior to occur, provides contingent feedback for social behavior, and can be implemented with a group of students (Simonsen et al., 2011).

Campbell and Anderson (2011) conducted a study using CICO in a suburban elementary school. The school had been implementing Tier 1 interventions for five years and Tier 2 interventions for two years. The students were nominated if they accumulated 2-5 office referrals. The hypothesized function of the problem behavior of the students was adult attention. Results showed a decrease in problem behavior and an increase in academic engagement for all four students (Campbell & Anderson, 2011). Todd et al. (2008) conducted a similar study at a rural elementary school. Four school-aged boys were nominated to participate in the study due to high rates of office visits and disruptive behavior in the classroom. The hypothesized function of

the problem behavior was adult attention. The results showed a decrease in problem behaviors as well as a decrease in office referrals when CICO was implemented (Todd et al., 2008).

A larger study by McIntosh et al. (2009) was conducted on CICO across 6 elementary schools. There were a total of 34 students who participated in the study. The results indicated a significant decrease in problem behavior and referrals, and a significant increase in pro-social behavior such as helping, sharing, and volunteering (McIntosh et al., 2009).

CICO has also been conducted in middle school settings. Simonsen et al. (2010) evaluated CICO with 42 students in an urban middle school and compared the effectiveness of the CICO intervention with the school's standard practice (SP) in decreasing students' off-task behaviors. The results yielded statistically significant differences for the direct observation data of the classroom behavior (Simonsen et al., 2010).

Students enrolled in public school can be transferred to alternative schools or programs for various reasons, including physical altercations, substance use or possession, chronic truancy, weapon use or possession, and disruptive verbal behavior which are all signs of being at risk for educational failure (National Center for Education Statistics (NCES), 2010). According to the NCES, public school districts collaborate with many agencies outside of the district to provide extra services to students in alternative schools and programs (i.e. criminal justice system, community mental health agencies, crisis intervention centers). Because the students who engage in at risk behaviors are excluded from general education learning, the approaches to their behavior tend to be more punitive and reactive (Swoszowski, Patterson, & Crosby, 2011). These practices are ineffective for students with significant behavioral needs and there is a need for more proactive and preventative practices (Swoszowski et al., 2011).

Traditionally, CICO is implemented in general public school settings at the elementary (Campbell & Anderson, 2011; McIntosh et al., 2009; Todd et al., 2008) and middle school (Simonsen et al., 2010) level. Only a few studies have assessed the effectiveness of CICO in alternative school environments. Ennis, Jolivette, Swoszowski, and Johnson (2012) examined the effects of CICO in a residential program with middle and high school aged students diagnosed with emotional and behavioral disorders (E/BD). The study showed that CICO was effective in decreasing problem behavior with students who had attention maintained behaviors but not escape maintained behaviors. Swoszoswki, Jolivette, Fredrick, and Heflin (2012) examined the effects of CICO in a residential facility with middle school aged students diagnosed with E/BD. Results indicated that four out of six students responded positively to the intervention, regardless of function, as evidence by a decrease of problem behavior. Neither of these studies evaluated the effects of CICO on improving academic engagement.

The purpose of this study was to extend the literature on the effects of CICO programs to an elementary alternative school setting located within a locked residential treatment facility for children with mental health diagnoses. The study sought to assess the effects of CICO on both problem behavior and academic engagement through direct observations during targeted time periods and throughout the day.

Chapter Two:

Method

Participants

Three students from the same classroom participated in the study, Jimmy, Amy, and Janice. They were selected to participate by using the Systematic Screening for Behavior Disorders (SSBD) created by Walker and Severson (1991). The SSBD is a multi-gate screening process to identify students at-risk for ongoing behavior concerns (Walker & Severson, 1991). For this study, the SSBD was used as a ranking scale of the students in the classroom. This scale ranked the students from severe (ex. aggression causing bodily harm) to moderate problem behaviors (ex. making disruptive noises). The participants selected for this study exhibited moderate problem behaviors.

Jimmy was an 8 year old, Caucasian student enrolled in the second grade. He was diagnosed with Bipolar Disorder (Not Otherwise Specified). In addition, Jimmy was academically behind in all subjects and had difficulty with reading. The teacher reported that he could only recognize common sight words. Amy was a 10 year old, biracial student enrolled in the third grade. She was diagnosed with Mood Disorder (Not Otherwise Specified), Attention Deficit and Hyperactivity Disorder, and Post Traumatic Stress Disorder. She was academically on grade level for most subjects. Janice was a 10 year old, biracial student enrolled in the fourth grade. She was diagnosed with Bipolar Disorder, Post Traumatic Stress Disorder, and Oppositional Defiant Disorder. She was academically on grade level for all subjects.

Setting

This study took place in a school that was located within a locked residential mental health treatment facility for adolescents and young children. The classroom held approximately 12 students. Along with the teacher, there were three mental health technicians (MHTs) that helped with managing the students in the classroom. All data collection occurred in the classroom of the three students during typical classroom activities. There were no school-wide or classroom-wide behavioral interventions being implemented at this school. Although, a level system was implemented for all the children residing in the facility that remained constant throughout the current study and seemed to not be effective.

Target Behavior and Data Collection

Data was collected on problem behavior and academic engagement. These behaviors were defined and used across all participants. Problem behavior included the following: disruptions, out of location or seat, and negative physical or verbal interactions. *Disruptions* were defined as speaking out of turn during instruction or independent seat-work, making inappropriate noises, and using items in which they were not designed (slamming a book on desk). *Out of location or seat* was defined as the student not being in the assigned area when expected and not having bottom in contact with chair when expected to be seated. *Negative physical or verbal interactions* were defined as hitting, kicking and throwing objects at peers or making inappropriate comments about or towards peers.

Academic engagement was defined as having eyes oriented towards teacher or relevant materials for the task on hand, working on assignments, following appropriate teacher direction within 5-s, and appropriately requesting assistance from the teacher regarding assigned tasks.

The teacher implemented CICO throughout the entire school day. Data was collected during an observation period of 15-20 min using a 10-s interval recording system. For problem behavior, data was collected through partial interval recording. For academic engagement, data was collected through whole interval recording. The observer was seated to the side of the classroom using the data sheet to collect data on the assigned student participant. The observations were conducted 3 to 5 days a week for the duration of the academic activity where the problem behavior occurred most frequently based upon the functional assessment (i.e. reading for Jimmy, math for Amy, and language arts for Janice). The teacher collected data on the Daily Report Card (DRC).

Interobserver Agreement

Interobserver agreement (IOA) was assessed by having two independent observers simultaneously collect data for approximately 32% of observations across all participants. The observers consisted of graduate and undergraduate students from the University of South Florida Applied Behavior Analysis program. An agreement of the occurrence of academic engagement was defined as both observers recording that the behavior either did (A) or did not (–) occur during each interval. An agreement of the occurrence of problem behaviors was defined as both observers recording that the behavior either did (P) or did not (–) occur during each interval. IOA was calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100. IOA was taken for Jimmy 31% of the days and the percent agreement was 88.5% (Range of 66-100%). Amy had IOA taken 31% of the days and the percent agreement was 95% (Range of 91-100%). Finally IOA was taken for Janice 33% of days and the percent agreement was 92% (Range of 88-96%). Overall IOA across participants was taken for 32% of the days and the percent agreement was 92%.

Social Validity

At the end of the study, the teacher completed the teacher version of the CICO Program Acceptability Questionnaire (Hawken & Horner, 2003). The five-item checklist assessed the teacher's perceptions of the decrease in problem behavior, increase in academic engagement, ease of implementation, effort of implementation, and whether she would recommend the intervention to others. The checklist was scored using a 6-point Likert scale (1= *strongly disagree*, 6= *strongly agree*). At the end of the study, the participants also completed a questionnaire to assess their perception of the CICO program. The five-item questionnaire assessed the participants' perception of teacher interactions, the daily report card, earning points and reinforcers, and if they would want to continue using CICO in the classroom.

The results of the social validity surveys were in favor of the CICO program being implemented in the classroom. The teacher scored the CICO program a 6 out of 6 for four of the five questions and a 5 out of 6 for the amount of time/effort to implement CICO in the classroom. The participants also scored the CICO program highly. They all strongly agreed that interactions with the teacher and staff were more positive; they enjoyed earning points and trading the points in for a reward. In addition, the participants indicated that they would like to continue using CICO in the classroom.

Fidelity of Implementation

Fidelity of implementation was measured for 27% of the days that the participants were participating in the CICO program collectively. The researcher observed staff interaction with participants and the classroom feedback session. The researcher completed a revised version of a 12-item checklist that rates the presence of key components of the CICO program (Campbell &

Anderson, 2011). A 96% fidelity of implementation for the teacher and staff occurred across participants during the days that CICO was being implemented.

Experimental Design

A concurrent multiple baseline design across participants was used to assess the effects of Check-In/Check-Out on problem behavior and academic engagement.

Procedure

Functional Assessment. A functional assessment was conducted for each participant. The purpose was to determine when each participant engaged in problem behavior and to accurately define the problem behavior. The functional assessment consisted of a teacher interview and direct observations. The teacher interview was conducted using the *Functional Assessment Checklist for Teachers and Staff* (FACTS; March et al., 2000). After the interveiew, three 10-min observations were conducted during the context of which the problem behavior was reported to occur most frequently based on the FACTS. During the observation, an ABC recording sheet was used to collect data. Data was collected on problem behaviors.

Based on the functional assessment, Jimmy's behaviors were most problematic during reading. Through FACTS, the teacher reported that Jimmy would make disruptive noises and try to talk amongst his peers. In addition, when the teacher or MHTs would try to redirect him back on task, he would make rude comments or refuse to do his work. These behaviors would usually result in gaining attention from his peers and the adults or escaping from the task at hand. When Jimmy exhibited these problem behaviors, the teacher would either reprimand him for his actions or the MHTs would remove him from the classroom. Also, the teacher reported that she would make curriculum changes (ex. easier work). The researcher's observations confirmed the results of the FACTS.

Amy's behaviors were most problematic during math. Through FACTS, the teacher reported that Amy would become frustrated with the task to where she began to be disruptive to her peers (ex. screaming, grunting). She would also become withdrawn from the task and refuse to finish her work or try to get another activity to do instead (ex. coloring). These behaviors would result in escape from the activity and peer or adult attention. The teacher's responses to her problem behaviors were in the form of reprimands and sending her out of the classroom. The researcher's observations confirmed the results of the FACTS.

Janice's behaviors were most problematic during language arts. Through FACTS, the teacher reported that Janice would make disruptive noises during the activity (ex. farting noises). In addition, she would try to talk with her peers and make jokes, and get out of her seat to do something unrelated to the task at hand. These behaviors would result in escape from the activity and gaining peer and adult attention. The teacher's response to her problem behaviors included reprimands and sending her out of the classroom. The researcher's observations confirmed the results of the FACTS.

Baseline. During baseline, the teacher was instructed to conduct the class and manage student behaviors as usual. In addition, the teacher filled out the DRC for each participant without giving feedback to him or her. The DRC points were used for data purposes.

Training CICO. Prior to the implementation of the CICO program, the teacher attended a CICO training session. The training required the teacher to watch an instructional DVD on the CICO program called *The Behavior Education Program: A Check-In, Check-Out Intervention for Students at Risk* (Hawken, Pettersson, Mootz, & Anderson, 2006). After watching the introductory video, a Behavioral Skills Training (BST) session took place. During BST, the instructor demonstrated how to implement CICO. The teacher was then asked to practice CICO,

and how to provide feedback regarding points earned. Based on the teacher's performance, the instructor provided feedback and/or praise.

CICO. During this phase, participants were individually checked-in with the researcher before the start of the school day. The researcher provided the student with a new DRC (which the teacher held onto) stated the daily points goal, went over the expectations, and provided verbal encouragement. The DRC is a 5'x 7' piece of paper that included the participant's name, date, CICO schedule, an area to record points that are earned for appropriate behaviors and a space for teacher signature for each period.

At the end of each period, the participants met with the teacher to receive their points and individual feedback of their behavior. During feedback sessions, the teacher would reward the participants up to 2 points for exhibiting behaviors congruent with the classroom expectations (ex. safe, respectful, and responsible). The expectations were determined by the teacher prior to implementation and the definitions of the expectations are located on the DRC. Within the 3-point scale the participants could earn 2 points for a great job, earn 1 point for doing okay, and 0 points for having a hard time. The participants could earn up to 6 points per period and 30 points per day. Each participant was told how many points they needed to earn to reach their goal for that day. The goal set for points earned was 80% per day for all participants.

At the end of the school day, the participants checked-out and were given the DRC to the researcher. The researcher recorded the points earned for the day and provided feedback based upon the points earned. If the participants earned 80% of points or greater, the researcher provided praise ("Way to go! You met your goal."). If the participants earned less than 80% of points, the researcher provided neutral comments (i.e. "You will be able to earn points tomorrow"). When the participants did not make their goal, the researcher also discussed

problem-solving skills and how they could improve their behavior. The participants earned tangible and intangible rewards based on the points accumulated each day. The point value for rewards ranged from relatively small (candy bar, small toy from treasure chest) to large (15-min break, homework pass). The participants were able to earn a small reward by trading points daily or save points to earn a larger reward by the end of the week. Each participant traded points for a reward in the treasure chest, which was located in the classroom. The items that were chosen for the treasure chest were based on a preference assessment interview for each participant. During the interview, participants were asked specific questions about what they would like to earn. This included food items, tangible items, and activities they enjoyed. The parent component of the CICO program was not implemented due to the participants residing in the residential treatment facility.

Chapter Three:

Results

The percentage of intervals scored with problem behavior and academic engagement are shown in Figure 1 for all participants. During baseline, Jimmy's problem behaviors were occurring at very high levels (M=95.5%). Jimmy's academic engagement occurred at relatively low levels (M=5.5%). When CICO was implemented, Jimmy's problem behaviors decreased and maintained at low levels (M=8.4%). In addition, his academic engagement increased and maintained at high levels (M=91.6%). Amy's problem behaviors were occurring at relatively high levels (M=76.3%) during baseline. In addition, her academic engagement was occurring at relatively low levels (M=23.7%). When CICO was implemented, academic engagement increased (M=95.3%) and problem behaviors decreased (M=4.7%). Janice's problem behaviors during baseline were slightly variable but stabilized at a high level (M=68.8%). Academic engagement occurred at low levels (M=31.2%) as well during baseline. Once CICO was implemented, Janice's problem behaviors decreased to low levels (M=10.5%) and academic engagement increased to high levels (M=89.5%), which remained stable throughout CICO phase.

Figure 2 shows data on the percentage of points earned during baseline and CICO using the daily report card (DRC) during the entire school day and during the context where problem behavior typically occurred for each participant. Jimmy's percentage of points earned daily were variable but remained at low levels (M=44.6%) during baseline. In addition, during reading he earned a low percentage of points (M=36.6%) in baseline. When CICO was implemented, Jimmy earned a high percentage of points daily (M=95%) and during reading (M=93.3%). On the 11th

day, Jimmy did not meet his daily goal of 80%; therefore, he was not able to earn a reward for that day. Amy's points earned were variable throughout baseline with low a percentage of points daily (M=61.7%) and during math (M=44.5%). During implementation of CICO, Amy earned a high percentage of points daily (M=91.9%) and during math (M=90.7%). During baseline, Janice earned a low percentage of points daily (M=65.7%) and during language arts (M=50.1%). Once the implementation of CICO took place, Janice's percentage of points earned increased for both daily (M=86.2%) and during language arts (M=100%). On the 11th day, Janice did not earn the 80% of points needed to receive a reward.

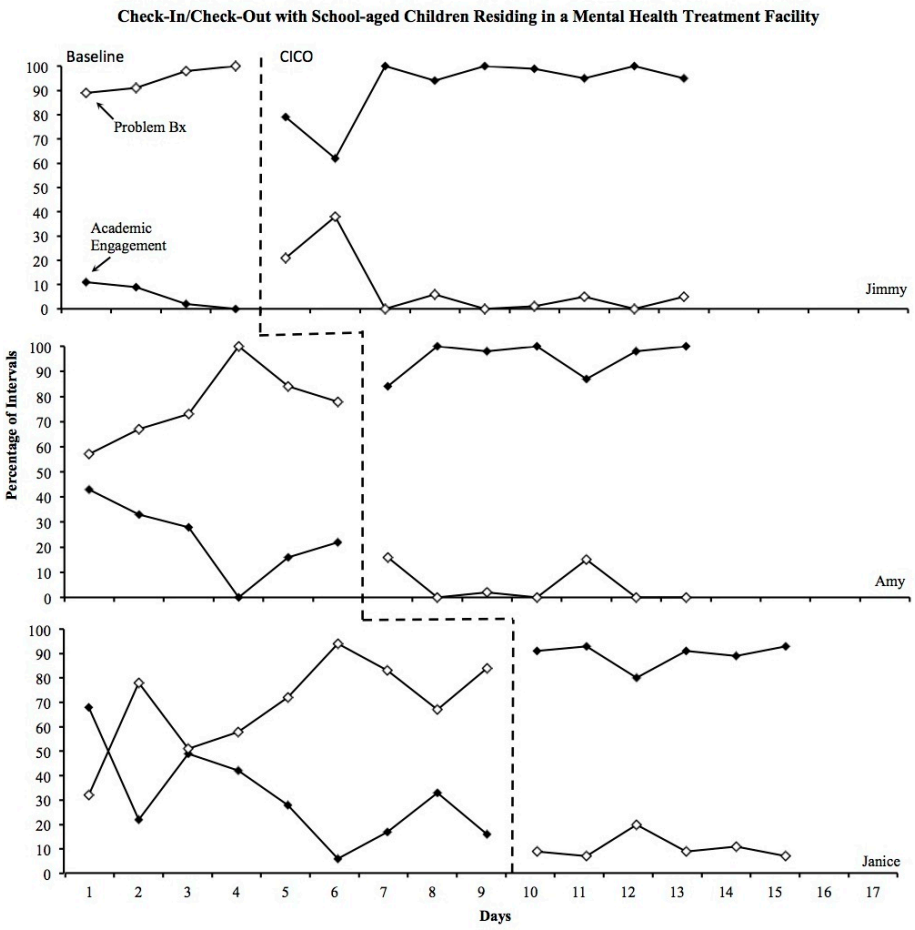

Figure 1. Shows the percentage of intervals of problem behavior and academic engagement on the y-axis and days on the x-axis for each participant. This data was collected each day during the time of day that was problematic for each participant.

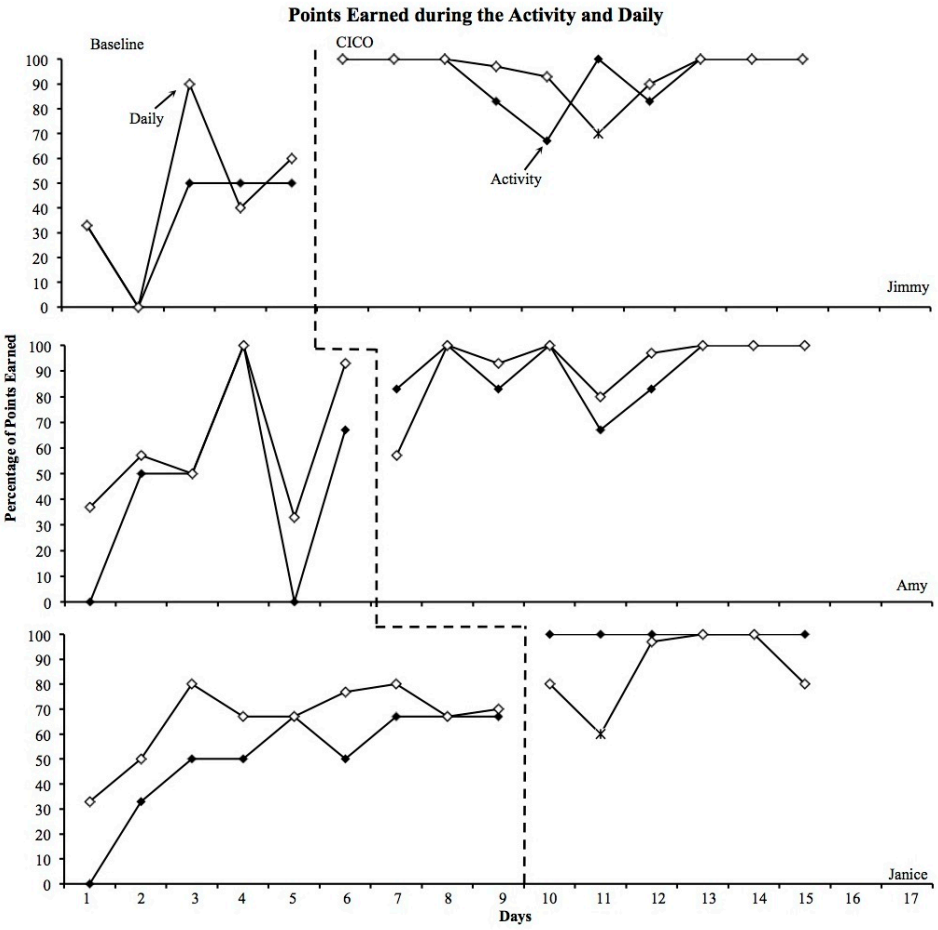

Figure 2. Shows the percentage of points earned for the entire day (Daily) and the percentage of points earned during the activity in which problem behavior occurred the most for each participant. The (X) is for days that the participants did not make their percentage goal that day.

Chapter Four:

Discussion

The primary purpose of this study was to evaluate the effectiveness of CICO with a school-aged population residing in a locked mental health treatment facility. No known studies have evaluated CICO in this type of setting. Results indicated that all three participants showed immediate reductions in problem behavior when CICO was implemented. Substantial increases in academic engagement were also observed for each participant. Because of the increase of academic engagement, it provided opportunities and set the environment for learning engagement. There still needs to be a good instructional teaching and academic instruction to improve learning. These results are similar to prior studies that showed CICO was effective in reducing problem behaviors in alternative school settings (Ennis, Jolivette, Swoszowski, and Johnson, 2012; Swoszowski, Jolivette, Fredrick, and Heflin, 2012).

Unlike previous research, there were three different measures including points from the daily report card, points during a specific problematic time of the day and 20-minute observations of activity for each participant. Previous studies (Campbell and Anderson, 2011; McIntosh, Campbell, Carter, and Dickey, 2009; Simonsen, Myers, and Briere III, 2011; Todd, Campbell, Meyer, and Horner, 2008) only used observations of problem behavior and/or academic behavior as a measure. Even though Campbell and Anderson (2011) mentioned using the DRC and percentage of points earned for the day as a measure, there were no graphs or data showing it. No known study has used the DRC as a measure for effectiveness of CICO. This allowed for examining if CICO would be effective during the times that the participants were

most likely to engage in problem behavior. Results indicated that CICO was effective in improving behavior across the day and during more problematic activities. There did not appear to be a difference between the percentages of points earned during the problematic activity versus those earned across the day.

Typically CICO is implemented within the framework of SWPBIS. For this study, the residential treatment facility was not implementing SWPBIS and had no experience or training related to SWPBIS or Tier 2 interventions. Although, it is encouraging that CICO was effective for the three participants, it is not known whether these participants would have required a Tier 2 intervention if the school was implementing the entire tiered system with fidelity. Problem behavior for these participants may have reduced with universal supports in place, which would require less need for targeted supports such as CICO. It is important to note that CICO appeared to be feasible to implement in the residential setting as evidenced by the teacher social validity outcomes. The teacher indicated she was able to implement Check-In/Check-Out with ease and thought the program was very helpful in improving student behavior. She also mentioned that the CICO program not only made a positive impact on the participants but also positively impacted the other students in the classroom. It is possible that the participants acted as peer models for the other students in the classroom for how to behave. In addition, the teacher and staff created positive relationships with the students and did not use reactive strategies as much once the program was implemented. In addition, the three participants scored *strongly agree* and *agree* on their social validity questionnaire regarding CICO. The participants indicated interactions with the teacher were more positive, the DRC was useful and they all would like to continue using CICO in the classroom.

All three participants appeared to have multiple functions for their problem behaviors including attention and escape from tasks. Some studies on CICO have found that it may not be as effective for students with escape maintained behaviors. For our three participants this did not appear to be the case. This may also be due to the environment that the participants were living in. The participants did not have access to preferred items or activities throughout the day at the residential facility which may have led to the presence of a strong establishing operation (EO) for earning the reinforcers in the treasure box.

Although the results of this study are promising for the implications of using CICO in an alternative school setting there were some limitations. At times it was difficult to control for outside variables related to the residential facility. For example, on the 11th day two of the three participants, Jimmy and Janice, did not make their points goal to receive a reward. On that day, Janice found out that her mother cancelled a visit and outing with her that had been planned and Jimmy participated in a treatment team meeting that morning that did not end on a positive note.

Another limitation is that this study was not able to use the home component for the daily report card. When Check-In/Check-Out is implemented in a public school setting the students are able to take the daily report card home for their parents/guardians to see and receive feedback and encouragement on their behavior that day. The students were residing in a mental health facility in which the school was located and therefore did not have access to parents on a daily basis. In addition, some of the children (not our participants) residing at the facility were in the foster care system; therefore, they would not have a parent/guardian to see or speak to. The home component could potentially be implemented with staff members at the facility but would be difficult in this type of setting. As suggested by Swoszowski, Patterson, and Crosby (2011), the daily report card could be sent with the student back to the housing or unit supervisor for a

signature. With this the supervisor could provide praise to the student for meeting his or her goal and encourage the student to meet his or her goal the next school day. Although the home component would be a nice addition, given the results of this study, the home component may not be necessary to see positive outcomes for students in the classroom.

Future research is needed to specifically evaluate more in depth the feasibility and efficacy of CICO at an alternative school setting within a locked residential mental health treatment facility. Some implications of future research include replication of the current study, adding the home component, implementing Tier 1 systems of support, and having teachers and other personnel in the classroom more involved in implementing CICO while fading out the researcher. Additionally, follow-up or long term data would be important to see if CICO maintains over time and if students could be weaned off the CICO program while maintaining low rates of problem behavior in the classroom.

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