SYSTEMATIC REVIEW OF THE CHECK-IN/ CHECK-OUT COMPONENTS AND THE EFFECTIVENESS FOR STUDENTS WITH CHALLENGING BEHAVIORS

Dana Laging
Trinity Christian College
dana.laging@trnty.edu

Caitlin Buerger
Trinity Christian College

Christine Hoekstra
Trinity Christian College

Shannon Childs
Trinity Christian College

ABSTRACT
The purpose of this systematic literature review was to summarize the outcomes of the Check-In and Check-Out (CICO) intervention components and the effectiveness of the intervention for at risk students with challenging behaviors across multiple grade levels. School-wide Positive Behavior Supports (SWPBS) is a system of evidence based interventions that are implemented on a continuum to reach academic and behavioral success for all students. CICO is a tier 2 behavioral intervention package that promotes positive reinforcement, social skills training, frequent feedback, and home communication. The findings indicate that the CICO procedures contain similar components and that it is an effective Tier 2 intervention for problem behaviors.

Introduction

An extensive amount of school districts within the United States utilize a three tiered prevention model for behavioral needs of students. According to pbis.org, "School wide positive behavior support (SWPBS) is an empirically supported approach that is implemented by more than 10,000 schools in the United States to support student and staff behavior." SWPBS consists of three tiers. Tier 2 focuses on providing students who do not respond to Tier 1 interventions (school-wide practices) with more specialized and intensive support. Eighty percent of students in this model fall within the Tier 1 range that is targeted by school-wide behavior supports. Some students (approximately 5-15% of the student population) will need additional behavior support that can be provided by Tier 2 behavior interventions (Crone, Hawken, & Horner, 2010; Hawken, Adolphson, MacLeod, & Schumann, 2009). Students who do not respond to Tier 2 interventions, move into the Tier 3 range. This affects about 5% of students overall. These students require significant behavioral interventions and supports including a functional behavior assessment, or an individualized behavior plan.

Check-In/ Check-Out (CICO)

Check-in/Check-out is an effective and commonly used Tier 2 intervention. According to Hawken (2014), "CICO is one of the most widely implemented Tier 2 interventions, with over 3,000 schools across the country currently using the CICO-SWIS database to document progress for students receiving the intervention." However, this number is not a current reflection of the number of districts utilizing the CICO procedure due to the various behavior databases used to track the effectiveness.

According to Campbell and Anderson (2008), CICO has shown to be an effective intervention for elementary and middle school aged students. The CICO intervention is commonly utilized to reduce various problem behaviors, both internalizing and externalizing. Gresham & Kern (2004) found that "externalizing behaviors are those behaviors that are directed outwardly and are considered under controlled. These behaviors include aggressive behaviors, conduct problems, disruptive behaviors, hyperactivity-impulsivity, opposition/defiance, and acting out." The study by Gresham & Kern (2004), also defined internalizing behaviors as "behavior patterns that are directed inwardly at the individual and are considered to be over controlled. This includes social withdrawal, somatic complaints, poor self-esteem, negative self-thoughts, depression, and anxiety." Crone, Hawken, & Horner (2010) validate that CICO is an effective intervention for externalizing behavior problems. On the other hand, CICO was also found to be an effective intervention for reducing internalizing behaviors (Hunter, Chenier, & Gresham, 2014).

The components of the CICO procedures may vary between school districts; however, according to Everett, Sugai, Fallon, Simonsen, & O'Keeffe (2011pbis.org), the CICO daily activities include the following and provides a reference to the "traditional" CICO procedure.

- Check in with a CICO coordinator (or their homeroom teacher) in the morning.
- Carry a point card that is based on school-wide expectations.
- Receive frequent and regular feedback on their behavior from adults throughout the day.
- Review their goals with the coordinator (or their homeroom teacher) at the end of the day.
- Take their point card home for parent signature and positive feedback.

Review Purpose

The purpose of this review was to determine the necessary Check-In/Check-Out components and the effectiveness of this intervention with students considered "at risk" or in the Tier 2 range. The following research question has been developed to guide the present review: What components of the check in/ check out system are essential to the effectiveness of the intervention?

Method

Inclusionary Criteria

A systematic review was done in order to collect data on the CICO components utilized within various published studies. A database search was conducted on Educational Resources Information Center (ERIC). Sixteen articles were found in the initial search using the keywords check-in/check-out intervention. A strict set of inclusionary criteria was put in place to review the articles. The criteria required the following items:

- Peer reviewed journal
- Check In/ Check Out Intervention
- Study had to be conducted between the years 2007-2017.
- Article required to have at least one participant that was considered at risk (Tier 2)
  - Students were not receiving any special education support for behavioral needs
- Participants had to be within a general education setting
- The study had to be a single-subject design
- The participants had to display emotional/ behavioral characteristics
  - Inability to build or maintain satisfactory interpersonal relationships with peers and/ or teachers
  - Internalizing Behaviors/ Externalizing Behaviors

Based on the inclusionary criteria, seven articles met all expectations needed to conduct this systematic review. Within these seven articles, there were twenty-three participants that met the inclusionary criteria.

Coding Procedures

Graduate students coded the seven eligible studies according to the following characteristics: article title and year of publication, participants, grade level, school placement (general education), target behavior, CICO components mentioned within the study, baseline data, intervention data, and overall results. A checklist was completed in order to document all of the CICO components that were used in each study. The components of the CICO procedures varied between each of the articles. Although many articles utilized similar or the "traditional" components, some studies mentioned using additional components. Therefore, additional columns were added to the spreadsheet in order to depict the specific elements that were mentioned within each article.

Coder Reliability

All seven articles were coded by two reviewers to verify the components found. The articles were found to have between 66%-100% agreement when reviewed a second time. The IOA was calculated by the number of items coded divided by the number of items coded the same way plus (+) differences. Overall, the mean percentage of agreement for coding items was 87%.

Results

CICO Component Results

Each article coded listed multiple components used in the Check-In/Check-Out intervention process. The findings show that all seven articles included giving the participant a point card to track progress, a morning check-in, and an afternoon check-out. Six of those seven articles required parental involvement of some kind (sent home with student/required parent signature daily). Multiple check ins throughout the day and the process of setting a goal

for the participant was discovered in five articles. In four of the articles, multiple scorers were used throughout the intervention process. Additionally in those four articles, an incentive was given for those participants who reach their set goal. Three of the seven articles discussed how the CICO procedure followed school-wide PBIS expectations, and implemented some form of teacher training sessions. In two articles, there was a requirement for the student to approach the teacher for feedback about daily progress and fill out the point card. Only one article mentioned additional components in the CICO process such as: the participant earning bonus points for having homework done, being prepared for class, having the teacher review and sign point card, social skills training, and functional based adaptations. (See Table 1).

CICO Effectiveness Results

There were a total of 23 participants within the seven articles. Each of the participants were enrolled in grade levels ranging from kindergarten to eighth. The participants were chosen for the check in/ check out intervention based on their identified target behaviors, both internalizing and externalizing. Common target behaviors of participants included internalizing behavior (social withdrawal, negative self-thoughts, anxiety), disruptive behavior (out of seat, talking out of turn, impulsivity), defiant behavior (refusal, non-compliance), and physical aggression.

All twenty-three participants started with the traditional CICO procedure (had components noted in the pbis.org daily activities). Seventeen of those participants showed decreasing levels of challenging behavior. The other six participants needed additional supports for CICO procedure to be effective. Once these supports were added, those six participants also showed decreasing levels of challenging behavior. Therefore, some form of the CICO procedure was noted to be effective for all twenty-three participants based on decreasing levels of problem behavior and increasing levels of prosocial, appropriate behavior.

The "traditional" CICO was not found to be effective for six of the participants. Four of the participants who did not respond to the "traditional" CICO procedure required a social skills component. The social skills component took an average of 15 minutes each day and involved explicit instruction on identified social skill gaps, modeling, and guided practice of skills within social environments. Once a social skills training component was added to their CICO procedure, all four participants showed an increase in positive social engagement and a decrease in negative social engagement behaviors (i.e. teasing, gossiping, etc.). Two of the participants that did not respond to the "traditional" CICO and required an addition component/ consideration be added to their daily CICO. Two of the participants were given a function based adaptation. A functional analysis was done during baseline of this study and the function of the students behavior was considered after the "traditional" CICO was found to have little to no effect on problem behaviors. Once a function based adaptation was implemented, their problem behavior was observed in significantly less intervals.

Discussion

The purpose of this review was to determine the essential components of the CICO Tier 2 intervention and the effectiveness it holds with students considered "at risk." Results indicated that all participants experienced success with some form of the CICO process. The findings show that methods used in the "traditional" CICO procedures were effective for 74% of the participants reviewed in this study. 17 out of 23 participants responded to the "traditional" CICO. The other six participants required an additional, individualized component in order to find success with the CICO procedures. After the additional components of social skills instruction and function based adaptations were added to their CICO procedures, the intervention appeared to be successful as documented by a decrease in problem behaviors and an increase in positive social engagement. Therefore, the CICO procedure was successful for 100% of the participants within this systematic review given that the procedures were individualized and additional components were added as needed to address skill deficits and the function of behavior. Multiple studies agreed that "CICO can be modified to address different behavioral needs, such as students who require more frequent check ins throughout the day or students whose behavior is sensitive to contingencies other than adult attention" (Fairbanks et al., 2007; March & Horner, 2002).

Many different dependent variables were evaluated across all studies included in this review. Of all of those dependent variables, three were consistently identified in all articles reviewed. In order to be considered a Check-in/Check-out intervention within the Tier 2 model, participants must be given a point card, and have one morning check-in and one afternoon check-out. Additional components that were found to be successful include parental involvement, multiple check-ins throughout the day, setting a goal, and providing an incentive for achieving that goal. These, along with other components can be provided to the participant based on his/her identified needs.

Limitations

       Although the Check-in/ Check-out intervention was found to be effective for all of the participants within the articles reviewed, there are some limitations that should be kept in mind. "Research indicates that CICO is less effective for students whose problem behavior is hypothesized to be maintained by avoidance of instructional activities" (March & Horner, 2002; McIntosh, Campbell, Carter, & Dickey, 2009). Our research supports this hypothesis due to the fact that the articles utilized in this systematic review does not include any participants demonstrating escape or avoidance as a function of problem behaviors. Secondly, only three of the seven articles that were reviewed mentioned some form of training for CICO coordinators and other staff members. It is unclear as to what the protocols are regarding the training process, or the criteria necessary to be an implementer of the CICO intervention. There was also no mention of how long the training process was or if the implementers would need continuing courses to validate fidelity. Lastly, fading and maintenance procedures were not noted or identified within the articles reviewed.

Table 1

Article Title	Participant/ Grade Level	AM Check In	PM Check Out	Point Sheet/ Card	Parent Signed/ Report	Multiple Check-Ins	Goal Setting	Multiple Scorers	Incentive	PBIS	Teacher Training	Student/ teacher feedback	Additional Components Noted
Addressing Task Avoidance in Middle School Students: Academic Behavior Check-In/ Check-Out (2014)	Toby (8th) Katie (7th) Nick (6th)	X	X	X	X				X			X	*Bonus Points for being prepared for day, having homework in AM, and having homework to go home, and teacher reviewed and signed homework
Check-In Check-Out + Social Skills: Enhancing the Effects of Check-In Check-Out for Students With Social Skill Deficits (2015)	Emily (5th) Olivia (5th) Lucida (3rd) Sarah (3rd) Tom (1st)	X	X	X	X	X	X	X			X		*Social Skills training needed for Emily, Olivia Lucida, and Sarah
Enhancing Effects of Check-in/ Check-out With Function-Based Support (2008)	Joe (4th) Kyle (4th)	X	X	X	X	X	X	X	X	X		X	*Function Based Adaptation
The Effects of a Targeted Intervention to Reduce Problem Behaviors (2008)	Chad (1st) Kendell (2nd) Eric (K)	X	X	X	X	X		X		X			
Check-In/ Check-Out: A Systematic Evaluation and Component Analysis (2011)	Kyle (2nd) Mike (5th) Nick (5th) Paul (5th)	X	X	X	X	X	X		X			X	
Evaluation of Check In/ Check Out for Students With Internalizing Behavior Problems (2014)	Patrick (4th) Chris (4th) Caroline (4th) Jeff (4th)	X	X	X	X		X		X				
Using a Changing-Criterion Design to Evaluation the Effects of Check-In/ Check-Out With Modifications (2016)	Kaiya (7th) Tina (7th)	X	X	X		X	X	X			X	X	

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