Token Economy Plus Self-Monitoring to Reduce Disruptive Classroom Behaviors

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The current study examined the effectiveness of a combined token economy and self-monitoring package with a youth displaying a major mental illness and severe aggressive and persistent disruptive behaviors. The student received points for lower rates of aggressive/disruptive behavior and ‘bonus’ points for accurately self-monitoring and recording his own behaviors. The results indicate that the addition of the self-monitoring component decreased the number of targeted behaviors beyond the substantial reduction of the token economy alone. In the reversal, there was a slight rise in the emission of problem behaviors, yet the frequency was still significantly below baseline. Implications for clinical applications and future research are discussed.

Youth diagnosed with Conduct Disorder, Attention Deficit-Hyperactivity Disorder, Oppositional Defiant Disorder or those who have emotional or behavioral problems often experience academic deficits or problems meeting the expectations of schools. These difficulties are often apparent in many other aspects of their lives; including home, social, and recreation. The difficulties experienced by youth with emotional or behavioral disorders include inattention, disruptive behaviors like calling out and out of seat behavior, social skills deficits, aggression and other maladaptive behaviors. Many different interventions have been implemented to decrease the occurrence of these behaviors to acceptable and appropriate levels. For example, behavioral interventions that are typically implemented to manage inappropriate and disruptive behaviors are variations of differential reinforcement of incompatible or appropriate alternative behaviors where the frequency of appropriate behaviors increase and a natural consequence of the increase is a decrease in disruptive inappropriate behaviors (Gaughan & Axelrod, 1989). Additionally, Fontenell and Holloman (1983) investigated the effects of differentially reinforcing hand-raising in a classroom on the rate of disruptive behavior of calling-out for teacher attention.

Token economies have also been implemented to decrease disruptive behaviors and increase appropriate behaviors. A token economy is an intervention that includes contingencies in which tokens or points are given following the emission of targeted behaviors. Tokens can then be redeemed for reinforcing objects or activities at a later point in time. Many studies have produced data that affirmed the effectiveness of token economies and contingency plans with behaviorally and/or emotionally-disordered youth for a variety of target behaviors, including aggression, on-task behavior, and social skills (Phillips, 1968). Subsequent studies have investigated token economy procedures to reinforce on-task behavior, reduce disruptive classroom behavior, and improve social skills of youth with weak reinforcement histories and emotional problems. (Ferritor, Buckholdt, Hamblin, & Smith, 1972; Ayllon & Roberts, 1974, & Gaughan & Axelrod, 1989).

Self-monitoring and self-recording have been examined as a technique to influence behavior change in multiple human populations but few have specifically targeted youth with emotional or behavioral disorders. McLaughlin et al. (1985) found that self-monitoring can improve social behavior and attending behavior in school settings. Few studies have examined the combined effects of token-economies with self-monitoring on disruptive behaviors in a classroom setting. Champagne, et al. (1990) used a token economy to effectively decrease talk outs and inappropriate facial expressions in classroom and group therapy settings. The procedures included a self-monitoring component but the contribution of the self-monitoring to the treatment effect was not investigated.

The purpose of the present study is to examine the effects of a combined intervention consisting of a token-economy program with self-monitoring of disruptive classroom behaviors in an adolescent with emotional and behavioral disorders. The relative contribution to treatment effectiveness added from the inclusion of a self-monitoring procedure will also be investigated.
Method

Participant

The participant in this study was a 13-year-old male who attended a public high school. He participated in full school days within a self-contained special education classroom with other youth also displaying behavior disorders of various intensities. He scored within the low average range for individuals of his age in special education on intellectual and achievement tests. He had diagnoses of Bipolar Disorder and Conduct Disorder. The youth was served in a Therapeutic Group Home with 11 other adolescents with severe/persistent mental illness/behavior disorders.

Setting

The experimental manipulations occurred in the school setting, and control data was obtained in the school setting, and control data was obtained in the residential group home. The classroom consisted of eight students classified as behaviorally disordered, a primary teacher and a community treatment aid (CTA). The school's staff and the residential staff from the control condition group were trained prior to the data collection on the operational definition of the behaviors.

Design and Procedure

The research design employed in this study was an A-B-C-B single subject design. Control data was obtained in the student’s residential group home. Data was collected in 5 intervals throughout the day at the group home. The five intervals were divided at natural routine times in the student’s day; breakfast, after school, dinner, evening, bedtime. Data was recorded as the percent of intervals in which the student exhibited any of the target behaviors. This data was collected for control, not generalization purposes.

Recording of target behaviors at school was done on a 5 x 7 card divided into 16 intervals that had spaces for each of the 3 behavioral categories: minor behaviors, disruptive behaviors, and aggressive behaviors. Data was collected in the residential group home throughout the baseline and intervention conditions in a control fashion.

**Baseline(A):** The treatment package was not applied to the student. The teacher dealt with student behaviors as usual. The typical methods for dealing with minor behaviors (out of seat, non-compliance) were ignored or verbal warnings were given. Disruptive behaviors (excessive talking out loud, singing) resulted in brief verbal interactions and removal to the hallway or behind a screen for a short time-out period. Aggressive behaviors resulted in the youth being returned to the group home for the remainder of the day. Baseline data was collected at school for 5 school days. During the baseline period, the student did not have access to free time on the computers or additional gym time.

**Token Economy (B):** The token economy consisted of a teacher implemented point system. The occurrence of identified target behaviors was recorded as in the baseline. The school day was divided into sixteen 15-minute intervals. For each interval, the student had the opportunity to earn three points. One point was earned for the absence of behaviors in each of the three categories during that interval. Points were allocated verbally at the end of each 15-minute interval. No points were removed during the intervention for misbehavior, but the student was removed, as was the traditional classroom practice, to behind a time-out screen for instances of persistent disruptions or aggressive behavior. Points were not earned while in time-out. The student was returned to the classroom after 5 minutes of quiet behavior. The student could earn up to 48 points per day. The student and the teacher cooperatively created a reinforcer menu. The points were exchanged after every two hours of the school day.
Token Economy + Self-Monitoring (C): During this phase the teacher implemented token economy continued. The student was trained to a 100% accurate mastery level in self-monitoring his three categories of inappropriate behavior and given a 5 x 7 card to record instances of his behavior in the three categories. At the end of each 15-minute interval, the teacher compared her count to the student’s behavior count. The student was given an additional point for an exact agreement between his self-monitoring and teacher counts. During this phase the student had the opportunity to earn 64 points, 4 in each of the 16 intervals.

Token Economy (B): In the final or reversal phase of this study, the intervention returned to the token economy alone.

Interobserver Reliability

In the classroom, the teacher, a community treatment aide, and the student compared data to a second observer after each 15-minute interval. In the group home, a second residential treatment specialist recorded behavior events every other time that data was taken. An agreement was defined if both recorders tallied the same number of target behaviors. Interobserver agreement ranged from 71% to 100% with an overall mean reliability of 85%. The student’s self-monitored reliability with the teachers monitoring had a mean of 97%.

Results and Discussion

The results of this study replicate previous research on the effectiveness of token economies in reducing minor, disruptive and aggressive classroom behaviors in youth. The results extend previous studies by showing the clinically significant contribution of the self-monitoring procedures in reducing the target behaviors when added to the token economy. A clinically significant decrease occurred in the frequency of targeted behaviors from a baseline mean of 118 (range=115-123) following the implementation of the token economy (see Figure 1). The frequency of those targeted behaviors continued to decrease throughout the initial token economy phase (mean=63, range=40-101). The addition of self-monitoring to the token economy procedures produced a clinically significant additional reduction in the target behaviors (mean=7.75, range=3-20). A slight increase in the number of targeted inappropriate behaviors occurred in the second token economy alone phase when the self-monitoring practice was discontinued (mean=12, range=8-15). Throughout periodic maintenance data probes taken over 4 weeks in the school and the group home settings revealed that the frequency of inappropriate behaviors remained low (mean=13, range=11-15) compared to baseline levels.

SEE GRAPH ON NEXT PAGE
Figure 1. Emission of inappropriate behaviors across school and group home setting.

Data from the control setting in the group home indicate that the intervention implemented in the classroom did not significantly affect the frequency of inappropriate behaviors in the home. Emission of inappropriate behaviors was stable in the group home throughout the study, including maintenance checks.

With either intervention; token economy or combined token economy and self-monitoring, the targeted behaviors of the youth significantly declined. As shown in Figure 1, the number of disruptive behaviors made by the student was substantially higher during the baseline phases than when either of the intervention packages were applied. Some control for outside contaminating variables was achieved by comparing the control data collected in the group home. It is evident and expected that the behavior changes displayed in the classroom did not generalize to the daily living activities at home. Through the reversal design it is shown that the self-monitoring component did have an additive effect on decreasing the number of targeted disruptive and aggressive behaviors in the classroom. Champagne, Ike, McLaughlin, & Williams (1990) found self-monitoring in combination with differential reinforcement of other behavior to be effective in reducing disruptive behavior in a classroom setting. The authors state that self-monitoring did not seem clinically significant but may have the effect of decreasing disruptive behavior. This conclusion could be looked at in terms of the reactivity of the subjects to his own self-monitoring and the awareness of his/her own behavior when in a self-monitoring program. The effects of the token economy intervention in a solitary application can be teased out using the present design, but it
is not possible to evaluate what effects the self-monitoring component may have had if implemented by itself. The present design did evaluate the effectiveness of a combination intervention including self-monitoring and a token economy. This study demonstrates the clinically significant additive effectiveness of self-monitoring procedures when coupled to a token economy.

Future studies should consider whether a token economy that is based on differential reinforcement of appropriate alternative behaviors would be more effective in changing an individual’s behavioral repertoire than a token economy using differential reinforcement of lower rates of behavior, as this study did. By reinforcing the non-disruptive, appropriate behaviors of compliance, hand-raising, and in-seat behavior their occurrence would increase, and naturally the occurrence of the disruptive behaviors would decrease. Continued and expanded examination of the separate effects of self-monitoring and the token economy, as well as investigating a token economy incorporating the differential reinforcement of incompatible behaviors in the context of behavioral disordered youth are also needed. Investigation should also continue into treatment methods that can be implemented in schools that support the generalization of their effects into the community and daily living settings.

References


Author's Note

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