Ask the Experts

Unexpected Results From a Change in Token Type

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We have noted an unusual phenomenon in our association with an inpatient behavioral health facility located in the midwestern United States. Most consumers treated in this facility exhibit conduct disorders, oppositional defiant disorder or attention deficit disorders. The facility also treats individuals with various anxiety disorders, posttraumatic stress disorder, and autism. Within the facility, we collected data from a unit that monthly serves a population of 38 to 47 children ages 3 to 11 years old.

The active intervention at the facility is a token-based contingency incentive program where tokens are earned (to be later exchanged for primary reinforcers) for good behaviors (e.g., listening while others were talking, waiting quietly in one's room in between activities, being polite to others, completing homework). Once consumers emit a positive behavior they are physically handed a plastic chip token that is 25 mm in diameter by 1 mm thick. Consumers are then allowed to place these tokens within an open basket with their name on it that was kept on a desk near the staff station. At four specific times throughout the day consumers can exchange the tokens that they earn for special opportunities such as additional recess, computer time, or ice cream during the nightly movie.

Other components of the facility's intervention program include various levels of seclusion implemented contingent upon inappropriate behavior. Staff members were trained to try and keep all individuals in groups as long as they are not severely inhibiting the effectiveness of the group for their peers. However, when a consumer is not demonstrating a positive behavior or is engaging

in a mild or escalating negative behavior such as not paying attention, distracting others, walking around the room, or not following directions, they are redirected toward engaging in positive behaviors. If the consumer continues to disregard directions, they are asked to go to their room for a short period of time (usually 3–5 minutes) to refocus their behaviors so that they can return to group and start earning tokens again. These are “soft seclusions.” In rare cases in which consumers are very disruptive but not causing physical harm, they are asked to leave group and stay in their room until it is time to begin the next group. These are “extended soft seclusions.”

“Closed seclusions,” which include placing consumers in an enclosed, hard-walled safety room, are used for managing extreme negative behaviors. Behaviors that result in institutional closed seclusions are actions deemed dangerous toward peers, staff members, or the consumers themselves. Specific examples of behaviors that result in closed seclusions include punching, kicking, spitting, throwing of objects, throwing feces, and destruction of property. Staff implement closed seclusions when other

options (time out in a consumer's room, coping strategies, or personal talk with staff member) are attempted without success. Institutional seclusions require due process, which involves the authorization for seclusion (given by a supervising nurse or doctor) as well as documentation of the date, time, and length of the seclusion.

Of the programs implemented at the facility, data only existed for number of seclusions implemented. Ideally, the frequency of positive behaviors and number of tokens issued would have been recorded and tracked also, but records were not kept at the facility for these two variables.

In order to minimize the potential spread of the flu virus during the 2011–2012 flu season within the unit population, the hospital decided to replace chip tokens with stickers, in that they were thought to be more sanitary. During a 3-month period, consumers were given stickers instead of tokens and were allowed to place them next to their name on a piece of paper. Stickers varied in size, shape, and depiction throughout the period of time that they were used. Nothing else regarding program implementation was changed. During this time period, the number of consumer closed seclusions escalated significantly. Concern was expressed by the staff that they had no ready explanation for the sudden increase in closed seclusions, in that every aspect of the program delivery had remained consistent other than the change from tokens to stickers.

Subsequently, administrators directed staff to switch from the sticker system back to the token system in hopes that this would help decrease this problem. While a process that might be responsible for an increase associated with the change from tokens to stickers was not readily understood or identified by staff, it was the only variable manipulated in an otherwise stable process and environment.

Following the switch back to using the tokens, the number of closed seclusions noticeably and immediately decreased. This decrease in the

number of closed seclusions remained relatively constant during the same months under the token system the following year. Prior to the implementation of the sticker system, closed seclusion numbers varied between 8 and 11 seclusions per month. As previously stated, the rate of closed seclusions greatly increased during the implementation of the sticker system. Specifically, a 413% increase occurred for the month that stickers replaced tokens. This rapid escalation in occurrence of closed seclusions remained constant throughout the next two months featuring sticker tokens. Stickers switched back to chip tokens in January 2012. This concomitantly led to a rapid decrease of closed seclusions back to the level seen prior to the change from chip tokens to stickers. Seclusion rates decreased by 36% during the first month of the reversal and seclusion rates continued along this trend the following month.

Follow-up included data from the same time period in 2012–2013 as the sticker substitution in 2011–2012. Overall rates of closed seclusion remained low during the follow-up observations exclusively featuring chip tokens. Overall facility census rates remained consistent ranging from 38 to 47 consumers per month with an average population per month being 42.21 consumers per month across both years.

Given this observation, we have several questions to ask the experts at *Behavior Analysis in Practice*.

In the years since Lancaster's (1805) innovative use of tokens (i.e., tickets) within large classrooms, *token economies* have been well established as integral parts of

Figure 1. Number of closed seclusions observed per capita (closed circles; plotted on left y-axis) across chip and sticker token conditions during observations from August 2011 to February 2012, with follow-up observations during equivalent time periods from August 2012 to February 2013. Total census for the unit is plotted as a histogram on the right y-axis.

behavior change programs within residential settings. What safeguards should programs use to improve fidelity within token economies and avoid haphazard applications of reinforcement and punishment?

Researchers, such as Kazdin (2008) have suggested that reinforcement-based programs that work well in controlled settings often show different results in applied situations. Why would this be, and how might we control for and monitor these differences?

Researchers such as Laraway et al. (2003) suggest that *motivating operations* exert both a value-altering effect and a behavior-altering effect. Could the dramatic increase in closed seclusions simultaneous with substitution of stickers for tokens suggest a reduction in reinforcer effectiveness, or what Laraway et al. would call a *reinforcer abolishing effect*?

Within the realm of clinical behavior analysis, is the use of seclusion in the manner described in this program advised, or might there be a better way to redirect unwanted behaviors?

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References

- Kazdin, A. (2008). *Parent management training: Treatment for oppositional, aggressive, and antisocial behavior in children and adolescents*. London: Oxford University Press.
- Lancaster, J. (1805). *Improvements in education, as it respects the industrious classes of the community* (3rd ed.). London: Darton & Harvey.
- Laraway, S., Snyderski, S., Michael, J., & Poling, A. (2003). Motivating operations and terms to describe them: Some further refinements. *Journal of Applied Behavior Analysis*, 36, 407–414. doi: 10.1901/jaba.2003.36-407