Research Paper

Token Economy - Technique to Reduce Violence and Destructive Behavior among Intellectual Disabled Children

Hemamalini. T[1]*, Prof. Ramaswamy C[2]

ABSTRACT

The present study aims at examining the effectiveness of a token economy in reducing violence and destructive behavior. A total of 100 children from the various disabled school of Mysore city was screened for PBBS (NIMH, 2015), to assess the level of violence and destructive behavior. Among them, 10 students were randomly assigned for the experimental group, who received 12 intervention sessions (Received tokens for minimizing the targeted behavior) and another 10 were assigned for a control group who did not receive any intervention. The directional hypothesis was formulated and the obtained results were statistically analyzed using independent samples 't' tests and repeated measure ANOVA The obtained 't' scores before implementation of intervention technique indicated no significant difference between both the group. Repeated measure ANOVA revealed that introduction of the token economy had a positive effect in reducing the violence and destructive behavior among the intellectually disabled children.

A token is a generalized conditioned reinforcement that is distinguished by its physical properties (Skinner, 1953). A token is an object that needs to be exchanged for a conditioned reinforcement. According to Skinner, the pairing of tokens and positive reinforcers during the exchange produces a conditioning effect. A token Economy is a form of reward training technique, which is scientifical, the designed method proved to initiate, maintain and strengthen the desired behavior. Here the subject is rewarded for making a particular desired response. This technique of token economy is used as an important tool for intervention mainly attempting to modify the targeted behavior. When the concept of a token economy is used in a proper systematic way, it can be as good as and follows the characteristics of other behavior modification techniques.

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[1] (Research Scholar, Dept. of Psychology, University of Mysore, Mysore, India)
[2] (Principal, University College of Fine Arts, Manasagangothri, Mysore, Karnataka, India)
*Responding Author

Through Several studies, it was evident that use of token economy in dealing with behavioral modification or increasing and maintain good behavior across diverse population such as normal children at school, disabled children at special schools, patients at psychiatric hospitals had a positive impact. (Kazdin, 1977). The study on the effect of rehabilitation program based on Gordon Paul's Social learning approach, on the rate of aggressive and injurious behaviors among intellectually impaired and psychiatric ill patients, showed that use of token economy had a positive impact in lowering the rate of aggression and self-injurious behavior (Stephen et al, 1999). Study on modification of severe violent and aggressive behavior among psychiatric inpatients through the use of a short-term token economy introduced eight weeks of behavior modification approach using token economy and the findings seemed to be positive indicating use of short-term token economy approach minimized the violent and aggressive behavior among the samples and study further suggested that use of coercive measures or psychoactive medicines in reducing the violent and aggressive behavior should be minimized and replaced by behavior modification technique using token economy (Park & Lee, 2012).

Children with Intellectual disability show problem behavior, which are considered as deficits in adaptive behavior because of the limitations in carrying out the routine activities. The problem behaviour not only causes inconvenience to the caregiver but also for the child himself. Presence of such behavior brings great difficulties to the parents, teachers and other concerned. A study investigated the effectiveness of an intervention comprising posted classroom rules, token economy, response cost, and mystery motivators in reducing disruptive classroom behavior. There was a considerable decrease in inappropriate classroom behavior during follow-up. The teacher reported that the intervention was relatively easy to implement, and together with its effectiveness in reducing disruptive behaviors, functioned to reinforce her willingness to incorporate the intervention into daily instructional practice (Mottram, 2008).

In the current paper, an attempt is made to study the effectiveness of Token economy in minimizing the violent behavior among children with intellectual disabilities. It is hypothesized that the Token Economy procedure reduces the violent and destructive behavior among the intellectually disable children

METHODOLOGY

Sample:

A total of 100 children from different special schools were screened with PBSS checklist, to know the current level of Problem behavior. Among them, 20 samples who were identified with violence and destructive behavior were selected for and randomly categorized into experimental and control group. Keeping the prevailing reinforcement procedures constant, the token economy was administered for the experimental group only.

Tools employed
Socio-demographic details –
This was intended to provide detailed information regarding age, gender, the educational and economic background of the family, and other demographic details.

PBBS - Problem Behavior Survey Schedule developed by NIMH 2015 –
It has been designed to elicit systematic information on the current level of behaviors in school going children with mental handicap. The scales are suitable for children with Mental retardation within 3-18 years. Scales are relevant for behavioral assessment and can also be used as a curriculum guide for program planning and training based on the individual needs of each mentally retarded child. PBSS is the latest version of Basic MR which has two parts, Part A and Part B.
Part A assesses the skill deficits and Part B assesses the current level of problem behavior.

Part B consists of seventy-five items grouped under the main ten domains.
1. Violent and destructive behavior
2. Temper tantrums
3. Misbehavior with others
4. Self-injurious behaviors
5. Repetitive behaviors
6. Odd behaviors
7. Hyperactivity
8. Rebellious behavior
9. Antisocial behavior and
10. Fears

There are specific quantitative scoring procedures. Record booklet, profile sheets, and a report card are included in the scales. There are provisions for periodic assessments for each child for every quarter or 3 months, to calculate the raw score, which can be converted into cumulative percentages and graphics profiles. For the present study, only the Violent and destructive behavior domain is taken.

The psychometric properties of the PBBS scale are, reliability - test-retest reliability under Pearson's correlation was found to be 0.89 (p;<0.001), cronbach's alpha cporrelation coefficients of reliability between domains varied between 0.18 and 0.89 and validity – Internal consistency of overall scale is 0.55
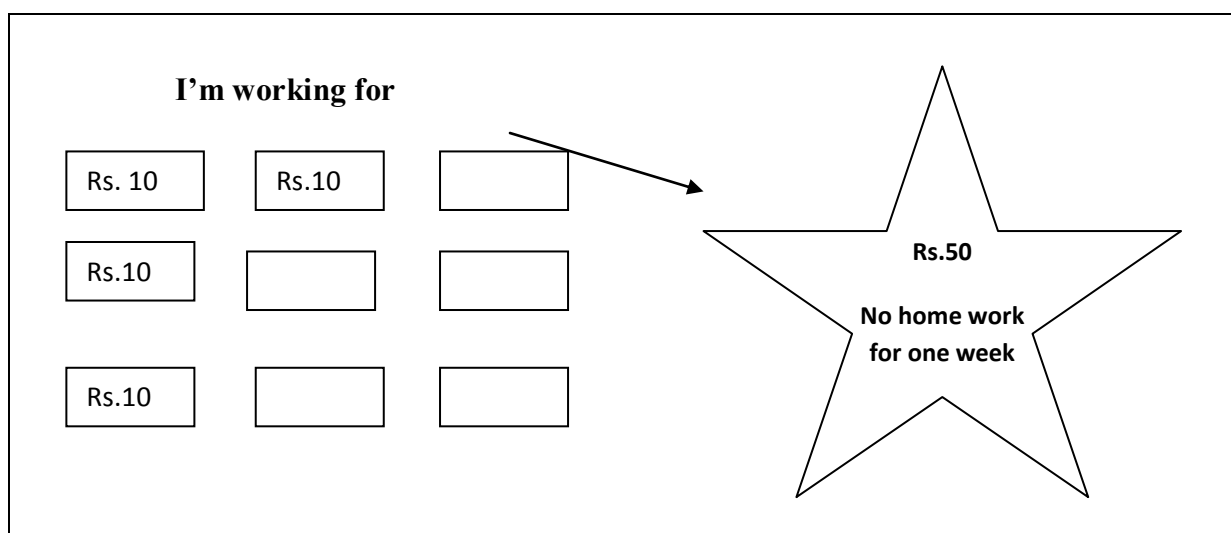
Procedure:
Initially, 100 mild mentally retarded children who were admitted to special schools were administered with PBBS scale to know the level of Violent and destructive behavior along with the same the socio-demographic details of each child was collected. Based on the intensity of violence behavior 20 children were selected and were randomly assigned into experimental and control group.

12 sessions of intervention was introduced to an experimental group wherein each time they minimized the violence and destructive behavior they were given fake money and the same was taken back when they showed violence and destructive behavior. The backup reinforcement or the privileges which were made available in school and were listed out with its cost value like extra TV time, snack with the teacher, no home works for a week, extra time on the computer and so on according to the likes and dislikes individually.

The data sheet was filled by observing the child's behavior and a number of occurrences was noted date wise and tokens were given and withdrawn according to the occurrences of the problem behavior. Once a week tokens were totaled and the child was allowed to choose the privilege of its choice in the school itself.

A Workbook is given with a board as follows:

Once the data were collected, they were scored and fed to the computer. To confirm the randomization of the groups, Independent samples 't' test was applied. To find out the effectiveness of token economy procedure repeated measure ANOVA was employed. Table 1 presents mean pre-test scores on Violence and destructive behavior of participants in two groups and results of Independent sample t-tests. Tables 2 and 3 present results of repeated measure ANOVA for mean pre and post-test scores on violence and destructive behavior of children belonging to experimental and control groups.

RESULTS

Table 1: Mean pre-test scores on Violence and destructive behavior of participants in two groups and results of Independent sample t-tests

Group	N	Mean	SD	t Value	df	P value
Experimental	10	12.80	3.676			
Control	10	10.40	4.502	1.306	18	0.208

The 't' value obtained for pre scores of experimental and control groups on Violence and destructive behavior (t=1.306; P=.208) found to be non-significant indicating that there are no significant differences between Experimental and control groups in relation to violence and destructive behavior. Thus, the equating, as well as randomization of the groups, were taken care of during the pre-test.

Table 2 Mean pre and post-test score on violence and destructive behavior of children belonging to experimental and control groups

Group	Gender	Pre-test		Post-test		Change
		Mean	S.D	Mean	S.D	
Experimental	Male	14.33	6.028	6.33	4.933	8.0
	Female	12.14	2.545	4.14	2.673	8.0
	Total	12.80	3.676	4.80	3.360	8.0
Control	Male	10.00	1.581	10.60	2.191	0.60
	Female	10.80	6.535	10.80	6.535	00
	Total	10.40	4.502	10.70	4.596	0.30
Total	Male	11.63	4.104	9.00	3.817	2.63
	Female	11.58	4.420	6.92	5.583	4.66
	Total	11.60	4.185	7.75	4.951	3.85

Table 3 Repeated measure ANOVA on mean pre and post test score on violence and destructive behavior of children belonging to experimental and control groups

Sources of Variation	Sum of Square	Df	Mean Square	F Value	P Value
Within subject effect					
Change	135.336	1	135.336	75.712	.001
Change* group	157.249	1	157.249	87.971	.001
Change * Gender	.205	1	.205	.115	.739
Change * Group * Gender	.205	1	.205	.115	.739
Error(change)	28.600	16	1.788		
Between subject effects					
Between groups	15.714	1	15.714	.461	.507
Gender	6.523	1	6.523	.191	.668
Groups x Gender	16.523	1	16.523	.485	.496
Error	545.248	16	34.078		

From the table, it is clear that the mean scores irrespective of the groups from pre-test to post test situation was found to be significant (F=75.712, p=.001) on the whole the pre-test mean was 11.60 and the post test mean was 7.75, thus a change of 3.85 in total mean score was observed after intervention which was found to be significant. Further, the change of violence and destructive behavior was verified between groups, the F value indicated a significant

difference between Experimental and control groups (F=87.971, p=.000) wherein the experimental group had recorded more decrease in the violence and destructive behavior (mean change is 8.0) compared to control group (mean change is 0.30). the gender wise comparison of applying intervention technique was analyzed and the F value indicated there is no significant difference found among the boys and girls with respect to intervention (F= 0.205, p=.739) and the interaction effect between group, gender, and change in violence and destructive behavior was also found to be not significant (F= 0.205, p=.739).

By analyzing between-subjects effects, on the whole, no significant difference was observed between groups (F=0.461; p=.507), between gender (F=0.191; p=.668) and interaction between group and gender (F=0.485; p=.496) were found to be not significant.

DISCUSSION

Major findings of the study

- The token economy had a positive effect in reducing violent and destructive behavior among the intellectually disabled children
- Gender did not have significant influence in reducing violent and destructive behavior among the intellectually disabled children

The present study aimed at knowing the effectiveness of token economy by using the principles of positive reinforcement among Children with mild intellectual disabilities. From the above results, it was evident that the introduction of the token economy had a positive effect on reducing the violence and destructive behavior among mild intellectually disabled children.

The result of the present study is supported by other studies which used the token economy as a form of reinforcement (Hoffmeister 1979, Lippman & Motta 1933). As per the observations of the researcher the probable reasons for the violence and destructive behavior among the intellectually disabled children were seeking attention, avoidance, escapism, avoid or escape from performing a given task and to remain center of attraction among the peers.

Studies have identified that problematic behavior such as violence, destructive behavior, and other behaviors interferes in the classroom learning process, can agitate other students and disturb the classroom atmosphere also. Study on minimizing inappropriate behaviors such as out of seat, talking out, and poor posture of an elementary student with learning disabilities through token reinforcement program indicated that awarding tokens for the absence of the three target behaviors was an effective procedure but implementation of token economy procedures should adopt appropriate teaching method, curriculum materials and rules (Higgins, 2001). Study by Mirzamani, Ashoori and Sereshki (2011) investigated the role of social and token economy reinforcements on the academic achievement of students with intellectual disabilities and findings indicated that token economy was more effective in improving the academic achievements of intellectually disabled students compared to social reinforcements.

The present study shows the light on the use of positive reinforcement as a token in order to unlearn the negative behavior, in a way showcases the role of the token economy as an important tool for behavior modification. Studies have also shown that by using token economy among mentally retarded adolescents helps in reducing anti-social behaviors like cheating, stealing, fighting and showing violence and destructive behavior also (Burchard 1967).

Thus it is concluded from the present research that the token economy system has a positive effect on reducing the violence and destructive behavior among the intellectually disabled children. Further, the study has social and psychological implication in making use of a token economy as a tool to modify any target behavior effectively.

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