

Effectiveness of token economy in reducing temper tantrums among the intellectually disabled children

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ABSTRACT

Behavior is operationally defined as the response by an organism to the given stimuli. The stimulus factors could be the reason behind a behavior. Research studies on the behavioral analysis of the problem behavior of persons with Intellectual disability have indicated the following reasons such as Attention seeking Factors, Self stimulation, Escape and Tangible factors for the manifestations of problem behavior. The present research is undertaken to know the effectiveness of token economy in reducing the temper tantrums among children with intellectual disability. To study the same 100 children from various disabled school of Mysore city was screened for PBSS to know the level of Problem behavior. Among them 10 students with temper tantrums were randomly picked for experimental group, who received 12 intervention sessions (Earned tokens for minimizing their targeted behavior) and another 10 were assigned for control group who did not receive any intervention. The obtained 't' scores before implementation of intervention technique indicated no significant difference between both the group. However the F ratio of both pre and post interventions indicated that, introduction of token economy had a positive effect in reducing the temper tantrums among the intellectually disabled children.

Keywords: Token Economy, Temper tantrums, Intellectually disabled children.

Intellectually disabled children often develop problematic behaviour such as violence, temper tantrums, antisocial behavior, repetitive behavior, hyperactivity, rebelliousness etc due to sub-average intelligence. Researchers opine that the individuals with intellectual disability who exhibit such problem behavior are at increased risk for hospitalization and dependence on external support. Traditionally medication is the clinical treatment of choice for this behavior with combination of differential reinforcement, non-contingent reinforcement and response cost procedures which are found to be effective. (Travis Robert & Sturmey Peter 2008).

Temper tantrum is one such problematic behavior which is associated and leading to other problem behaviours such as engaging in self-destructive behaviour misbehaving with others, violent and destructive behaviour and so on. Exhibiting temper tantrums is often due to their inability to express their emotions and mainly due to the factors such as escape, attention,

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avoidance, and for tangible items. Temper tantrums not only hamper the personal relationships but also hinders their learning process. Temper tantrums among the children is simply not a matter of behavioural aggravation, it's a serious matter of concern which needs to be address by care givers at home and at school.

Special educators, psychologist and counsellors adopt different techniques to deal with temper tantrums. An important and most promising technique among such behaviour modification technique is token economy. The token economy affords structured therapeutic environment, and mimic other naturally occurring reinforcement systems such as the use of money and further gaining a backup reinforce.

Token economy system is an effective method of behavior modification techniques. According to O'Leary & Becker, (1971) token economy is that best method of behavioral intervention compared to any other positive reinforcement program. Token economies are among the oldest and most successful programs with well-documented therapeutic and educational benefits (Hackenberg, 2009). According to Filcheck et. al, (2004) in managing the class room behavior of the students use of a token economy for the whole class was more effective in dealing with and managing the classroom problems.

Research intended to evaluate the influence of stimulant medication and a token economy on attentive and disruptive behavior during kickball games of ADHD children, found that the use of token economy had a positive impact in reducing disruptive behavior of the ADHD children further token economy system generally improved the effects of stimulant medication. (Reitman 2001).

It was proved from the research that through token economy a wide array of deviant and maladaptive behavior has been treated, ranging from decreasing the frequency of thumb sucking (Baer,1962) to teaching mute autistic children to speak (Lovaas,1987). From the review of literature it was evident that not much of the work has been conducted in knowing the effectiveness of Token economy as an intervention technique in minimizing the temper tantrums among the intellectually disabled children. To fill the research gap the present study is initiated.

METHODOLOGY

Hypothesis

- 1. H₁** – Token economy approach will have a positive effect in the reduction of temper tantrums among the children with Intellectual disability.

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 temper tantrums were selected for and randomly categorized into experimental and control group. Keeping the prevailing reinforcement procedures constant, token economy was administered for the experimental group only.

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Measures

- **Socio demographic details** - A demographic questionnaire was used to obtain descriptive information about participating subjects. Parents were asked questions such as their Name, age gender, parent's qualification, family income etc.
- **PBSS - Problem Behavior Survey 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.
- PBSS consists hundred items grouped under the main eleven 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
 11. Any other

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 raw score, which can be converted into cumulative percentages and graphic profiles.

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 correlation coefficients of reliability between domains varied between 0.18 and 0.89 and validity – Internal consistency of overall scale is 0.55

Intervention Technique (Introduction of tokens for experimental group only)

Procedure

Initially 100 mild mentally retarded children who were admitted to special schools were administered with PBSS scale to know the level of temper tantrums behavior along with the same the socio demographic details of each child was collected. Based on the intensity of temper tantrums 20 children were selected and were randomly assigned into experimental and control group. A 12 sessions of intervention was introduced to experimental group where in each time they minimized the temper tantrums. They were given counterfeit money and the same was withdrawn when they showed temper tantrums. The backup reinforcement or the privileges 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, or being the monitor and so on according to the likes and dislikes of the individual.

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Number of occurrence of target behavior for the day were noted with the help of a data sheet with proper observations and tokens were offered and withdrawn according to the occurrence of the target behavior. Weekly once the child was allowed to buy the liked privilege of its choice from the money so earned in school itself.

The analysis of data has been presented under following tables:

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

Group	N	Mean	SD	t Value	df	P value
Experimental	10	7.10	1.197			
Control	10	7.10	1.889	-0.849	18	0.208

The ‘t’ value obtained for pre scores of experimental and control groups on temper tantrums ($t = -0.849$; $P = 0.208$) found to be non-significant indicating that there is no significant differences between Experimental and control groups in relation to temper tantrums. Thus, the equating as well as randomization of the groups was taken care of during the pre-test.

Table 2 Mean pre and post test score on temper tantrums of children belonging to experimental and control groups

Group	Gender	Pre test		Post test		Change
		Mean	S.D	Mean	S.D	
Experimental	Male	7.0	1.225	2.33	1.803	4.67
	Female	8.0		1.00		7.0
	Total	7.10	1.197	2.20	1.751	5.903
Control	Male	7.80	2.683	7.80	2.683	00
	Female	7.60	0.894	7.60	0.894	00
	Total	7.70	1.889	7.70	1.889	00
Total	Male	7.29	1.816	4.29	3.407	3.0
	Female	7.67	0.816	6.50	2.811	1.17
	Total	7.40	1.569	4.95	3.332	2.45

Table 3 Repeated measure ANOVA on mean pre and post test score on temper tantrums 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	45.037	1	45.037	90.074	.000
Change* group	45.037	1	45.037	90.074	.000
Change * Gender	1.801	1	1.801	3.603	.076
Change * Group * Gender	1.801	1	1.801	3.603	.076
Error(change)	8.000	16	.500		
Between subject effects					
Between groups	51.425	1	51.425	8.753	.009
Gender	.178	1	.178	.030	.864
Groups x Gender	.001	1	.001	.000	.988
Error	94.000	16	5.875		

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Results of repeated measure ANOVA on mean pre and post test score on temper tantrums of children belonging to experimental and control groups. It was found that the mean scores irrespective of group from pre test to post test situation was found to be significant ($F=90.074$, $p=.000$) on the whole the pre test mean was 7.40 and the post test mean was 4.95, thus a change of 2.45 in total mean score was observed after intervention which was found to be significant.

Further, the change of temper tantrums was verified within groups, the F value indicated a significant difference between Experimental and control group ($F=90.074$, $p=.000$) wherein the experimental group had high level of change in temper tantrums (mean change is 5.903) compared to control group (mean change is 00) where no change in temper tantrums can be seen. 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 ($F= 3.603$, $p=.076$) and the interaction effect within group, gender and change in temper tantrums was also found to be not significant ($F= 3.603$, $p=.076$).

By analyzing between subjects effects, on the whole, significant difference were observed between groups ($F=8.753$; $p=.009$), between gender ($F=0.030$; $p=.864$) and interaction between group and gender ($F=0.000$; $p=.988$) were found to be not significant.

DISCUSSION

The current research aimed at investigating the effectiveness of token economy by using the principles of positive reinforcement among the mild intellectual disabilities. The findings of the research indicated that the token economy had a positive consequence on reducing the temper tantrums among mild intellectually disabled children.

Temper tantrums causes the children to rebel against their own life interest and sometime temper tantrums can also be used as a form of defense mechanism by young children and the condition is almost same with intellectually disabled children. In order to get the attention of caregivers, parents and significant others or to avoid the given work, generally these children demonstrate temper tantrums.

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 behavior not only causes inconvenience to the care giver but also for the child itself. Presence of such behavior brings great difficulties to the parents, teachers and others concerned.

Researchers are of the opinion that temper tantrums are even manifested in many other childhood disorders such as oppositional defiant disorder and conduct disorder. These children may show issues such as hostile, uncooperative, rebelliousness, aggressiveness and include self-injury as well harming others also. To deal with such issues behavior intervention techniques especially the role of token economy plays a major role.

Baer R, Ascione F, Casto G (1977) in their study on the efficacy of token economy procedures for decreasing the disruptive classroom behavior of retarded children proved that delivering the token economy system alone was not much effective in reducing the disruptive behavior further approach of token delivery and removal was more effective in dealing with targeted behavior.

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The result of the present study is supported by other studies which used token economy as a form of reinforcement in dealing with problematic behavior of intellectually disabled children (Hoffmeister 1979, Lippman & Motta 1933).

Thus the research paper showcases the role of token economy in minimizing the selected problematic behavior i.e. temper tantrums among the intellectually disabled children. Studies have also showed that by using token economy among mentally retarded adolescents helps in reducing the anti social behaviors like cheating, stealing, fighting and showing violence and destructive behavior also (Burchard 1967). Further through this research is also recommended that the study can be extended in knowing the effectiveness of token economy on temper tantrums among adult population also.

CONCLUSION

1. In concluding, through the current research it is proved that token economy system had a positive effect in reducing the temper tantrums among the intellectually disabled children.
2. Token economy is a best technique to deal with problematic behavior such as temper tantrums among the intellectually disabled children than using any form of aversive techniques.
3. Through token economy many forms of learnt behavior can be made to unlearn.

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Conflict of Interest

The author declared no conflict of interests.

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