

Use of Positive Strengthening Methods Inferential Reinforcement of Low Rates (DRL) in Reducing Impulsive Behavior for ADHD Children

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Abstract

The goal of the study was to determine the use of differential reinforcement of low rates (DRL) positive strengthening methods to reduce verbal impulsive behavior in ADHD (Attention Deficit Hyperactivity Disorder) children. Quantitative research method experiments Single Subject Research (SSR) with design A-B-A. The subject in this study was 1 (one) ADHD student in the 12th grade of SKh Bina Citra Anak Serang High School, Banten. Data collection uses observation techniques performed during the prior, administration of interventions, and after the intervention. This study was conducted in the school for 15 observations conducted in three phases, namely 5 baseline sessions before the intervention (A1), 6 sessions in the intervention phase (B), and 4 sessions in the baseline phase (A2). In this study, a reduction in the rate of verbal impulsive behavior cut off the speech of others after the use of the DRL method from the previous results of the average score of the appearance of verbal impulsive behavior that is 1 time / minute reduced to 0.6 times / minute.

Keywords: ADHD; impulse behavior of verbal; DRL method

Abstrak

Tujuan dari penelitian ini adalah untuk mengetahui penggunaan metode penguatan positif diferensial reinforcement of low rates (DRL) untuk mengurangi perilaku impulsif verbal pada anak ADHD (Attention Deficit Hyperactivity Disorder). Metode penelitian kuantitatif eksperimen Single Subject Research (SSR) dengan desain A-B-A. Subjek dalam penelitian ini adalah 1 (satu) siswa ADHD kelas 12 SMA SKh Bina Citra Anak Serang Banten. Pengumpulan data menggunakan teknik observasi yang dilakukan pada saat sebelum, pemberian intervensi, dan setelah intervensi. Penelitian ini dilakukan di sekolah selama 15 kali observasi yang dilakukan dalam tiga fase, yaitu 5 sesi baseline sebelum intervensi (A1), 6 sesi pada fase intervensi (B), dan 4 sesi pada fase baseline (A2). Pada penelitian ini penurunan tingkat perilaku impulsif verbal memotong ucapan orang lain setelah penggunaan metode DRL dari hasil sebelumnya skor rata-rata munculnya perilaku impulsif verbal yaitu 1 kali/menit berkurang menjadi 0,6 kali / menit.

Kata kunci: ADHD; impuls perilaku verbal; metode DRL

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INTRODUCTION

ADHD stands for *Attention Deficit Hyperactivity Disorder* which is commonly used to describe children with three main types of problems: overactive behavior (hyperactivity), impulsive behavior, and difficulty paying attention or concentration (Mirnawati and Amka, 2019). Inattentiveness is the behavior of no attention or noattention so that the individual is difficult to focus on something that is facing him. Impulsivity is the ability to control behaviors that prioritize to follow and obey impulses (impatient), and hyperactivity is behavior that can not be silent, behavior that has a tendency to do an excessive activity, both motor and verbal (Marlina, 2008).

Some ADHD children show an improved condition as they enter adolescence although it is undeniable that ADHD children have problems that continue into adolescence and beyond. Major symptoms of ADHD, such as attention difficulties, can increase with age, behavioral problems such as disobedience or aggression become worse if children don't receive help. It is therefore very important for children to receive help as early as possible, to prevent them from developing other maladaptive behavioral problems. It's important to remember that 30-40% of children with ADHD do well as adults, and this percentage can be increased if an ADHD child is given the right help. But children with ADHD become antisocial or aggressive at school, because they get treatment and help that doesn't fit or doesn't fit their child's needs, at risk ADHD as an adult. The role of family and school becomes very important in providing help or support to ADHD children instead of blaming (Mirnawati and Amka, 2019).

When we talk about inappropriate behavior by a child, then we must first understand what is meant by appropriate behavior by a child. The behavior expected of a child is to feel motivated and confident to develop their best potential, be able to make friendships in a good and right way, be able to do the things they are told to do well, be able to make meaningful contributions to the group, and be able to develop confidence (Moritmer in Thompson, 2010).

There are ways to improve individual behavior, one of which is behavior modification. Behavior modification is a way that aims to change an individual's behavior by applying learning principles. This behavior change will be more effective if it is based on precise information about the cause of the behavior, the intensity of the behavior, and the consequences resulting from the behavior. Behavior modification has two main goals, namely increasing or cultivating adaptive behavior, and reducing or eliminating non-adaptive behavior (Purwanta, 2012). A positive way to reduce behavior using positive strengthening *differential reinforcement of low rates (DRL)* is strengthening when target-behavior appears infrequently. The confirmation is given if during a certain interval the subject performs target-behavior no more than the predetermined frequency. (Purwanta, 2012).

The difference between ADHD children and children in general, these differences can be seen from the way they interact with others. ADHD children have impulsive behavior, which is the act of having the urge to say or do something that is not controlled by himself, impulsive behavior is often a problem when ADHD children enter the general environment (Erinta and Budiani, 2012).

The study subjects were conducted with ADHD students of class XII at SKh Bina Citra Anak initials (MH). M.H. has verbal impulsive behaviors such as frequently cutting off other people's speech. The thing that concerns researchers is impulsive behavior in children that can make uncomfortable people he talks to, especially later the child will be faced with the general public in his daily life and develop into an adult. Behavior that can be a problem is behavior related to others or with yourself, maladaptive behavior is known or felt by others but the individual who is concerned does not mind, but others around him feel influence that may be quite disturbing as a result of the behavior (Asri and Suharni, 2021). Currently the subject has been sitting in the 12th grade of high school which means that in 2022 children will graduate from high school, it is hoped that later the child can become a better

person with the reduction of impulsive behavior because after graduating from high school later the child will plunge into society such as working or continuing higher education, the goal is that children will be able to get used to controlling impulsive behavior. Especially verbal impulsive behavior.

Many teachers or therapists who treat ADHD are more focused on their hyperactive behavior and less touching on their impulsive behavior. Often this is due to the misconception that a child with ADHD is a hyperactive child, whereas hyperactivity is only one of the hallmarks of ADHD. Another similarly important characteristic of ADHD is impulsivity. Impulsive behavior cannot be left alone without the special handling and attention of people around (Erinta and Budiani, 2012).

Based on the description, researchers are interested in finding out whether the use of behavior modification methods of positive strengthening *Differential Reinforcement Low of Rates* (DRL) can reduce verbal impulsive behavior in ADHD children.

METHOD

Research uses a quantitative approach to experimental methods, e-experiment is a way to look for causal relationships (causal relationships) between two factors that are deliberately caused by researchers by eliminating or reducing or eliminating other disturbing factors. Experiments are always conducted with the intention of seeing the consequences of a treatment (Arikunto, 2013). The experimental method used is Single Subject Research (SSR) which is used to evaluate an intervention performed on a single object or individual (Sunanto, Takeuci & Nakata in Prahmana, 2021). The advantages of SSR research are that interventions carried out can be seen quickly the effect that can be known whether the intervention works or not, it is possible to draw strong conclusions related to factors that can affect bound variables, and the SSR's waiting is appropriate to answer the formulation of problems that test independent variable interventions that have an influence on changes in one or more dependent variables (Prahmana, 2021).

The SSR study used an A-B-A design in which target behavior (verbal impulsive behavior) is measured repeatedly during baseline (A), interventional or treatment conditions (B), and baseline conditions where intervention is withdrawn (A2). At the baseline stage I (A1) researchers have not taken action on the study subjects, researchers looked at verbal impulsive behavior indicated by subjects that had not been interfered with the actions of the researchers. At this stage researchers recorded the frequency and duration (units of 5 minutes) of the emergence of verbal impulsive behavior in ADHD children and the results were calculated the final score of each session. At the intervention stage (B) the researcher gives an action to the study subject. The action taken is that the researcher applies the *Differential Reinforcement of Low Rates* (DRL) method to the subject, if the child's verbal impulsive behavior is reduced then the researcher can give a positive confirmation given at the end of each session, the confirmation is in the form of praise that can motivate the child such as "today you have learned well, you can already control words when in class. Tomorrow is even more spirited!", in addition to the positive confirmation praise given by researchers can provide foods such as bread for

later time off. At this stage researchers recorded the frequency and duration of the appearance of verbal impulsive behavior in ADHD children and then the results calculated the final score of each session. In the baseline stage II (A2) researchers looked back at the child's verbal impulsive behavior after being given action from the researcher in the form of differential reinforcement of low rates (DRL). At this stage researchers recorded the frequency and duration (unit minutes) of verbal impulsive behavior in ADHD children and the results were calculated on average.

This was done on a male student with ADHD who was in the 12th grade of High School (12th high school) in SKh Bina Citra Anak who had verbal impulsive behavior such as frequently cutting off the talk of others.

Independent variables or free variables in this study are behavior modifications differential reinforcement of low rates or DRL (X) methods that affect the change or emergence of dependent variables, namely impulsive behavior (Y). In this study, the Differential Reinforcement of Low Rates (DRL) method is a method used when conducting interventions with the aim of lowering verbal impulsive behavior in ADHD children. While bound variables are impulsive behavior (Y) as variables that are influenced by the Differential Reinforcement of Low Rates (X) method as free variables.

The type of bound variable size used in this study is the type of unit of measurement rate. Frequency indicates the number of events in a given period of time. Rate is displayed in the number of responses or the number of events in units of time (minutes or hours). In this study used units (minutes) with a period of 10 minutes (ten minutes), used this type of unit of measurement rate so that researchers can find out how often an impulsive behavior of verbal impulsive occurs (Yuwono, 2018). Data collection is obtained using direct observation by recording the frequency (recording of events) conducted before, during, and after the intervention using the Differential Reinforcement Low of Rates (DRL) method.

Data analysis techniques in this study (quantitative) use statistics. Data analysis is an activity carried out after research data is collected, such activities are; Presents the variable data studied, performs calculations to answer problem formulations, and performs calculations to test the proposed hypothesis. (Sunanto, Takeuchi & Nakata, 2006). In experimental research when analyzing data using descriptive statistical techniques, in research with a single subject used simple descriptive statistics (Yuwono, 2018).

Before being given the intervention, the researcher discussed with the subject making a deal during the study. If the subject's verbal impulsive behavior is reduced compared to the previous session, the researcher will give verbal praise and entitled to give gifts to the subject in the form of food for him to eat during recess or home from school. However, if impulsive behavior does not decrease or even increase, researchers will not give praise or gifts promised earlier.

RESULTS

Data Description

The data from the SSR study was processed using descriptive statistics that refer to the initial conditions (baseline A1 senelum given intervention), intervention(B), and final kodisi (baseline A2 after no longer given intervention).

In this study, researchers conducted a study of 15 sessions with details of 5 sessions at baseline A1, 6 sessions in the intervention phase (B), and 4 sessions in the baseline phase of A2. Each session is measured by calculating the frequency of impulsive behavior in duration (unit minutes).

Data on baseline conditions (A1) were obtained through direct observation of the child's ability to reduce verbal impulsive behavior (cutting off the speech of others) before being given the observation intervention was carried out for 5 days. The number of events in a duration of 10 minutes is 10, 10, 9, 9, 9. The duration of each session is 10 minutes. This persuades the observations in the baseline phase of A1 to be stopped on day 5 because the data is stable.

In the intervention condition (B) of the data obtained showed that the number of events in the duration of 10 minutes was 8, 8, 8, 7, 7, 7. The data showed a decrease in the rate of verbal impulsive behavior of children cutting off the speech of others. The interventional condition (B) was stopped on the 11th day because the data already showed a stable graph line.

At the baseline condition (A2) is re-observed to the verbal impulsive error of children cutting off the speech of others. The data obtained shows that the number of events in the duration of 10 minutes is 6, 6, 6, 6. This condition was stopped on the 15th day. The following frequency scores of verbal impulsive behavior in each session can be seen on this table:

Table 1 Frequency Score of Verbal Impulsive Behavior

Target behavior	Baseline I (A1)					Intervention (B)						Baseline II (A2)			
	1	2	3	4	5	1	2	3	4	5	6	1	2	3	4
Verbal impulsive behavior (cutting off other people's speech)	10	10	9	9	9	8	8	8	7	7	7	6	6	6	6

After calculating the score rate (frequency: duration) which is the average result of (frequency of each session: 10 minutes) then the score is presented in the following table:

Table 2 Score Rate of Verbal Impulsive Behavior

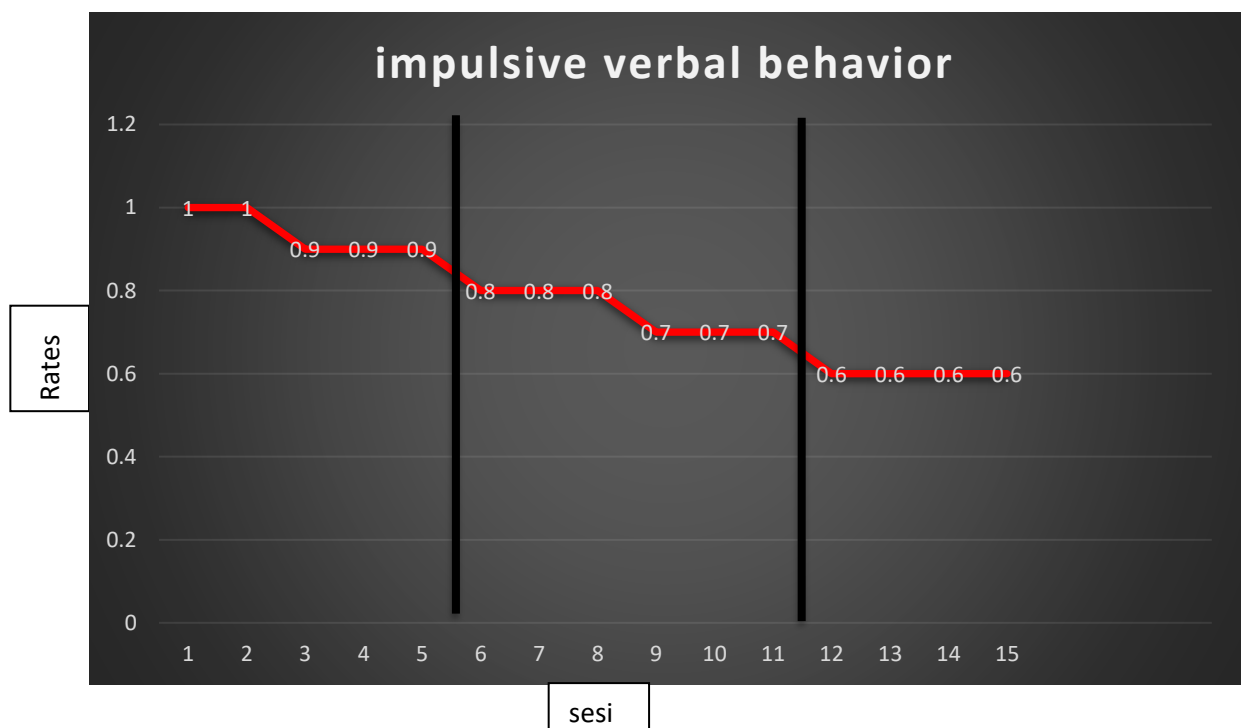
Target behavior	Baseline I (A1)					Intervention (B)						Baseline II (A2)			
	1	2	3	4	5	1	2	3	4	5	6	1	2	3	4
Verbal impulsive behavior (cutting off other people's speech)	1	1	0,9	0,9	0,9	0,8	0,8	0,8	0,7	0,7	0,7	0,6	0,6	0,6	0,6

The table above shows the child's impulsive behavior (cutting off other people's speech) in subject MH conducted as many as 15 sessions. Five sessions were conducted in the baseline phase (A1) in which researchers observed verbal impulsive behavior before administering the DRL method. In the baseline phase the subjects showed the behavior 10 times in the duration of 10 minutes in the 1st and 2nd sessions with an average score result of (1 time / minute) then 9 times in the duration of 10 minutes in the 3rd to 5th session with a score (0.9 times / minute).

In the intervention phase (B) was carried out as many as 6 sessions with details of the results in the 6th to 8th session children showed frequency as much as 8 times in the duration of 10 minutes each session with the score result that is (0.8 times / minute) while in the 7th to 10th session children show verbal impulsive behavior as much as 7 times with the score result that is (0.7 times / minute).

In the baseline phase (A2) conducted as many as 4 sessions with details in the 1st session² to the 15th session impulsive behavior appeared 6 times in a duration of 10 minutes with a score (0.6 times / minute).

Data obtained from these three conditions can be described in the following graph:

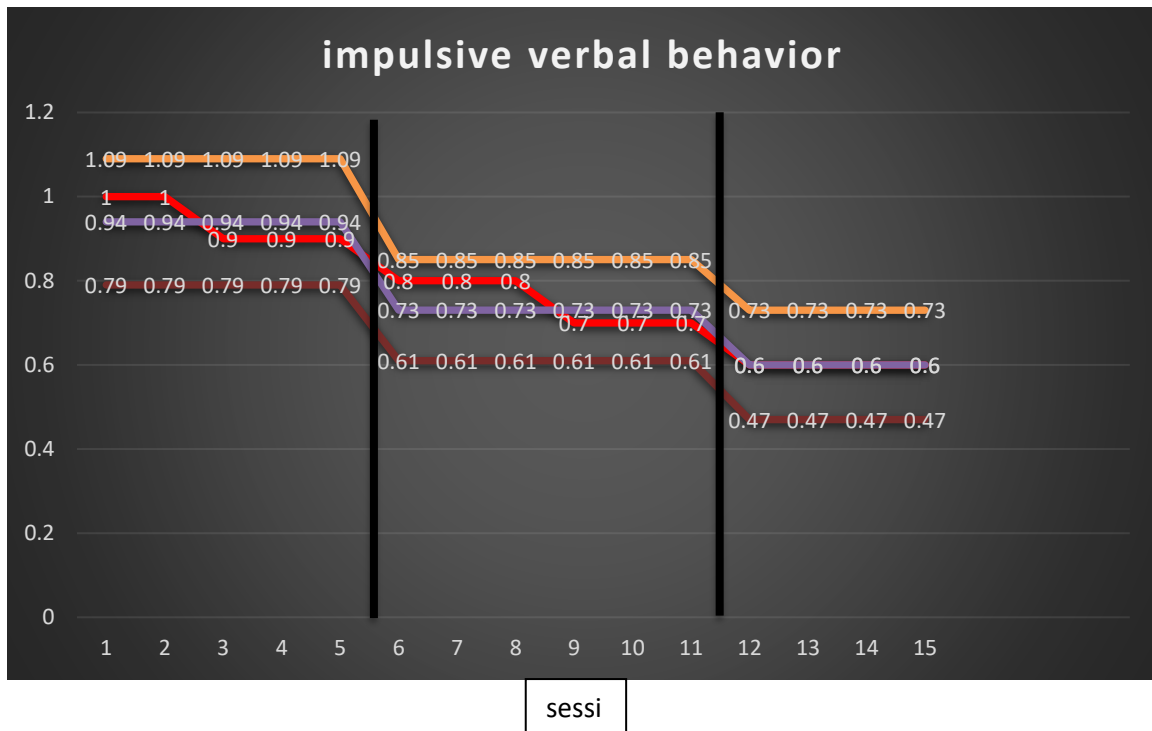


**Graph 1 Recapitulation Rates impulsive behavior cuts off other people's speech
Baseline A1, intrevention (B), and Baseline (A2)**

Data Analysis

Based on visual analysis of this study it is known that the use of positive strengthening *Differential Reinforcement Low of Rates* (DRL) can reduce verbal impulsive behavior in subjects.

Data obtained from these three conditions can be described in the following graph:



Graph 2 Recapitulation rates of impulsive behavior cut off the speech of others
Baseline A1, intervention (B), and Baseline (A2)

--	Rates score
--	Mean
--	Upper limit
--	Lower limit

Analysis in Conditions

Analysis in the conditions of this study is to analyze the changes shown by the data of the results of the study on graphs in each condition. The analysis complex in this condition can be seen in the following table:

Table 1 Summary of Analysis in Impulsive Behavior Conditions
Cut Off Other People's Conversations



No.	Condition	A1	B	A2
1	Length of Condition	5	6	4
2	Directional Tendencies	Decreased	Decreased	Decreased
3	Stability range	(1 x 0.15) = 0.15	(0.8 x 0.15) = 0.12	(0.9 x 0.15) = 0.13
4	Data trail	+	+	+
5	Level of change	(1 - 0,9) = 0.1 (+)	(0,8 - 0,7) = 0.1 (+)	(0,6 - 0,6) = 0 (+)

From the results of the summary it can be concluded that verbal impulsive behavior cutting off the speech of others can decrease through the DRL method.

1. Analysis between Conditions

The analysis complex in this condition can be seen in the following table:

**Table 2 Summary of Analysis between Impulsive Behavioral Conditions
Cut Off Other People's Conversations**

No.	Condition	A1:B	A2:B
1	Number of variables changed	1	1
2	Directional Tendencies	 Decreased	 Decreased
3	Changes in stability tendencies	Variable to variable	Variable to variable
4	Level Change	$1 - 0.8 = 0.2$	$0,6 - 0.8 = -0.$
5	Overlap	0%	0%

DISCUSSION

This study was conducted in school for 15 observations made in three phases, namely 5 baseline sessions before the intervention (A1), 6 sessions in the intervention phase (B), and 4 sessions in the baseline phase (A2). Based on visual analysis of this study, there is a reduction in rates of verbal impulsive behavior cutting off the speech of others after the use of drl methods. The DRL *Differential Reinforcement Of Low Rates* method involves administering an inaugural if the subject's target behavior occurs less frequently than the amount of time specified during the entire session (Austin and Bevan, 2011). Behavior that can be a problem is behavior related to others or with yourself, maladaptive behavior is known or felt by others but the individual who is concerned does not mind, but others around him feel influence that may be quite disturbing as a result of the behavior (Asri and Suharni, 2021). Impulsive behavior is a person's ability to control behaviors that the person prioritizes to obey impulses so that impatient either in motor or verbal control (Marlina, 2008). Dapat concluded that impulsive behavior is an individual condition that can not control the speed / slow response so that it appears to act or say without thinking first.

The reduced target behavior in this study is verbal impulsive behavior (cutting off other people's speech) which according to (Widhata in Desiningrum, 2016) Impulsive characteristics are often giving answers before the question is asked is finished, having problems waiting for their turn, often cutting off other people's speech or sabotaging, and likes to hit shows dislike by physically attacking.

Five sessions were conducted in the baseline phase (A1) in which researchers observed verbal impulsive behavior before administering the DRL method. In the baseline phase the subjects showed the behavior 10 times in the duration of 10 minutes in the 1st and 2nd sessions with an average score result of (1 time / minute) then 9 times in the duration of 10 minutes in the 3rd to 5th session with a score (0.9 times / minute). In the intervention phase (B) conducted as many as 6 sessions with details of the results in the 6th to 8th session children showed frequency as much as 8 times in the duration of 10 minutes each session with the score result that is (0.8 times / minute) while in the 7th to 10th session

children showed verbal impulsive behavior as much as 7 times with the score result that is (0.7 times /minutes). In the baseline phase (A2) conducted as many as 4 sessions with details in the 12th session until the 15th session impulsive behavior appeared 6 times in a duration of 10 minutes with a score (0.6 times / minute). This proves that the use of DRL methods can reduce the verbal impulsive behavior of ADHD children.

CONCLUSION

Based on the results of research and discussion, it can be concluded that behavior modification of positive strengthening methods *differential reinforcement low of rates* (DRL) in reducing verbal impulsive behavior in ADHD (*Attention Deficit Hyperactivity Disorder*) children aged 15 years in the 12th grade of high school at Bina Citra Anak Serang Special School, Banten. *Differential Reinforcement Low of Rates* (DRL) positive strengthening methods can reduce verbal impulsive behavior in ADHD (*Attention Deficit Hyperactivity Disorder*) children.

SUGGESTION

After showing the results of the researcher's findings obtained from the conclusions that have been put forward, there is a suggestion in this study that: For researchers, can develop the results of research using this DRL method in behavior modification for other special needs children. For teachers, in order to use the DRL method in overcoming verbal impulsive behavior in ADHD children or other special needs children. For further researchers, it is expected to add research using this DRL method as a reference material and reference as further research on DRL methods.

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